

Interactive Pre-Interview Screening System (IPSS)
for High-Performance Customer Contact Workforce

by

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Dissertation submitted in partial fulfilment
of the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

MAY 2011

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CERTIFICATION OF APPROVAL

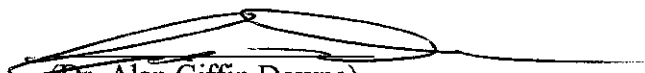
**Interactive Pre-Interview Screening System (IPSS)
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Siti Nurdiyana binti Abdul Wahab

A project dissertation submitted to the
Business Information System Programme
Universiti Teknologi PETRONAS
in partial fulfilment of the requirement for the
BACHELOR OF TECHNOLOGY (Hons)
(BUSINESS INFORMATION SYSTEM)

Approved by,



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May 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.



SITI NURDIYANA BINTI ABDUL WAHAB

ABSTRACT

This research and development project by the name of *Interactive Pre-Interview Screening System (IPSS) for High-Performance Customer Contact Workforce* is aimed to address the critical area in customer contacts environment and human resources management. The purpose of this project is to provide a solution system to measure candidates' capabilities at the earliest stage of recruitment process in order to shortlist them for the next stage of selection process (i.e. the interviews). This solution system must be able to automatically evaluate the candidates' capabilities to handle real working situations and respond to real-life problems, while at the same time pre-screen the candidates' soft skills (listening skills, reasoning abilities, problem solving, etc.).

To develop this project, prototyping was implemented as the Software Development Life Cycle (DSLCL) methodology. Prototype is a smaller scale representation of the overall system development, where user requirements are usually revised and refined. The scope of study involves the Customer Service Representative (CSR), recruitment and selection process, interface design for the end-user and simulated environment for the potential candidates to get used to. Based on the findings from unstructured interview and observation, two types of modelling diagrams were designed which are Use Case diagram and Activity diagram.

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

1.1 Background of Study

1.1.1 Industry Partner

This project was undertaken with the assistance of VADS Berhad (VADS). VADS is one of Malaysia's leading Managed ICT Service providers and is a wholly owned subsidiary of TM, serving more than 500 medium to large businesses across industries [1]. VADS services include Business Process Outsourcing (BPO) and solutions development. VADS has agreed to provide corporate access, to offer consultative support from their HR and IT divisions, and to allow the author to prototype and test the system in their facilities.

1.1.2 Project Background

This project name is *Interactive Pre-Interview Screening System (IPSS) for High-Performance Customer Contact Workforce*. IPSS which is a web-based application is designed to assist the Human Resources department in their employee selection process. This system will in the end evaluate and filter the large number of potential candidates to shortlist the selected one for the next stage of selection process, i.e. face-to-face interview. For requirement gathering, a few interviews had been conducted with the industry partner representatives. Data were also gathered through observation process. Prototyping methodology was used in this system development. By using the prototyping methodology, there were four phases involved for the Software Development Life Cycle which were planning, analysis, design and implementation.

1.2 Problem Statements

For service-based firms that are constantly recruiting and hiring new employees, using interview as a sole method sometimes fails to adequately evaluate candidates' capabilities to cope with real-life workplace demands and situational challenges.

1.2.1 Problem Identification

Given the competitive nature of today's service industry, it is necessary for firms to constantly recruit, select and hire new employees. For most firms, the cornerstone of the employee selection process is still the structured job interview. However, interviewing as a sole method of job analysis sometimes fails in adequately evaluates the candidates' capabilities to handle real working situations and respond to real-life problems. Besides being cost consuming, it is also time consuming as interviews need to be conducted in several stages to pre-screen candidates at each level before the firms can finally decide who are the best suited for the job.

An alternative approach may be to have a computer-based application system that pre-tests candidates' listening skills, critical thinking abilities, problem solving skills and language skills. This can be an effective way to measure candidates' capabilities at the earliest stage of the recruitment process stages while at the same time keeping recruitment costs much lower than holding face-to-face pre-screening.

1.2.2 Significance of the Project

This project is targeted to make the selection process for the Customer Service Representative (CSR) much easier. It helps in term of shortening the actual time frame for the early stage of the selection process. Eventually, it reduces the recruitment cost in the long run.

Besides that, this application system and the research associated with it will make a contribution to the field of Information Sciences, especially related to Knowledge Management (KM) within contact centre, Customer Relationship Management (CRM) and other service industry workforce planning. This system as a whole integrates the three pillars of KM which are people, process and technology.

Once designed, prototyped and field-tested, it is expected that the application will both increase HR effectiveness and reduce HR costs in relation to employee selection. As such, there is considerable potential for downstream commercialisation of the resolution system.

1.3 Objective

To model, design and test a web-based application that serves as a first filtering stage to pre-screen large numbers of potential Customer Service Representative (CSR) for the selection process, by April 2011.

1.4 Scope of Study

There are several scopes of study to be focused on in this project. The major scopes are as follows:

1. Customer Service Representative (CSR)
 - This project is basically related to the Customer Service Representatives which are the call centre's agents.
 - It involves the selection stage of the recruitment process for CSR.
 - The nature of their job must be studied and analysed to understand their main tasks.

2. Recruitment and selection process
 - This project is focusing on the recruitment and selection process.
 - The flow of the CSR selection process need to be studied to understand the requirements involved.

3. Interface design for the end-user
 - Graphic User Interface (GUI) is the best method to design and develop a user-friendly and readily usable system.
 - GUI enables the user to feel comfortable in using the system and they can easily understand the instructions given by the system and respond accordingly.
 - Thus, any special tutorial in utilizing the system is not required. This way saves time and cost.

4. Simulated environment of real scenarios
 - The simulated environment of the system is more likely to the real working system that the company is using.
 - However, only several functionalities will be included.
 - A few scenarios are provided as the simulations.

1.4.1 The Relevancy of the Project

This project development is relevant according to the client's demand which is the industry partner. With IPSS, the process of selecting new employees especially the Customer Service Representative (CSR) will be much easier, smoother and shorten the actual time frame to complete the whole process. As the system requires no human intervention during the sessions, interviews can be conducted with minimal HR personnel involvement. This, in the long run, helps the industry partner to save time and cost at the same time.

1.4.2 Feasibility of the Project within the Scope and Time Frame

32 weeks were estimated for the whole project to be completed. However, this time range might differ from what have been plan from time to time due to any arising matters during the development of this web based application. In addition, the project requirements might also be changed or added according to the adjustment of client's preferences and interests. More or less, the author may need extra time in doing more related research especially for the programming part to ensure that all objectives were achieved and the system functionalities were working well.

CHAPTER 2

LITERATURE REVIEW

2.0 LITERATURE REVIEW

2.1 Introduction

In building and retaining customer relationship with an organization, contact centre is viewed as one of the important approaches. The continued growth of contact centre in term of economic importance and its complexity has encouraged further research and academic works into its operation. Technology, processes and procedures are the key issues to ensure productivity in contact centre [2]. In order to make this chapter significant, several sources such as journals, books and websites has been referred. This chapter reviews

the context of customer contact workforce, group interview and selection process, agents' attrition, knowledge management in contact centre and analysis on existing interview systems.

2.2 Customer contact workforce

Every customer contact is an opportunity to build a relationship. Attending to customer enquiries consistently and promptly identifying customers' needs and concerns could be innovative ways to leverage on customer interaction to enhance the brand value a company holds. Thus, this is the reason for call centre existence. Basically, a call centre comprises a set of resources that enable delivery of services via the phone. Typically, people (referring to the agents that handle phone calls) are the resources. These people are also referred to as Customer Service Representatives (CSRs). Using a set of technological tool, CSRs interact with the users of the services provided by an organization. Agents are organized according to their skills (i.e. their ability to speak languages). In order to provide a better service to the user, each time a call arrives and the system detect its origin, the call will be routed to agents speaking the right language [2].

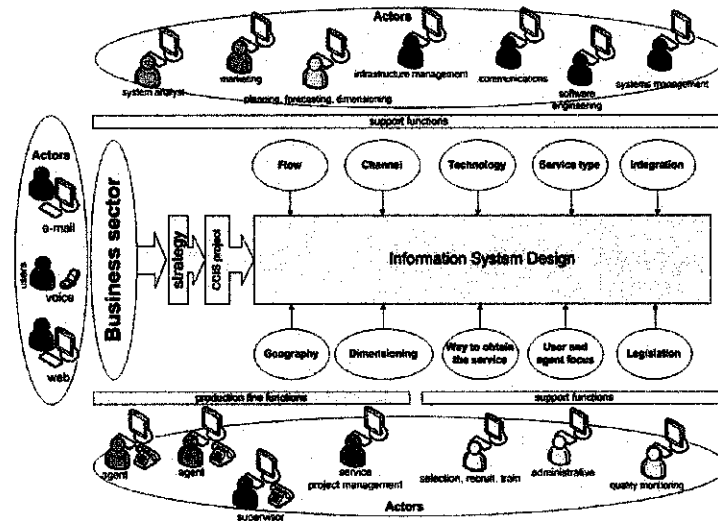


Figure 1: The framework of a contact centre [2]

An interaction exists every time there is a contact between a user and the organization. Call centres handle two types of interaction which are inbound or outbound. Inbound interactions are initiated by external party (outside user) requesting some services to the centre, while outbound interactions are those initiated from within a centre (i.e. tele-marketing), or in other words, the organization contacts the user. Blended mode of service happens when inbound and outbound components are working simultaneously. In case of blended mode, the decrement of inbound component automatically increases outbound ones by the system [2].

There are two differences between outbound and inbound service which are the flow and purposes. An outbound service with commercial purposes is referred as campaign, by which the term campaign is sometimes used instead of service. For outbound, the agents know the exact purpose of the interaction as they are prepared with all information to interact between with the user. On the other hand, for inbound, the purpose of the call is usually known during the interaction which creates unpredictability situations. Due to complexity of inbound, more integration with existing system is required. Furthermore, agents require more training and knowledge of the organizational processes and of the business areas. An outbound call

entails a database operation, a call scheduling algorithm and an agent's time optimization algorithm. Inbound calls do not need those components [2].

Call centres lead to contact centres. "*Call centres*" became "*Contact centres*" with the involvement of multiple interaction channels such as e-mail, fax, short message service, chat or web. Nowadays, contact centre concepts are a growing multidisciplinary area which involves complex information system [2]. Consequently, agents' skills have to be improved, so that it would go in line with new technologies and services.

Call centre cannot be functioning without the aid of technologies. Technologies for call centre here involve the integration of several channels such as telephone and visual display unit [3]. Interactive voice response (IVR) has been an additional technology for call centre. Automatic call distribution (ACD) is used to place inbound calls in queue and allocate them to call centre agents accordingly. ACD is providing a high-level of sophisticated electronic management information besides also providing the call centre statistics [3]. Anyhow, the most considered channels are telephone and e-mail, even there is a growth for chat and short message service (SMS) [2].

2.3 Group interview and selection process

Interviews are generally being conducted in various forms. The common types of interview are one-to-one interviews, panel interviews and group interviews. The normal process of group interviews involves a presentation to the candidates about the company and the position they are applying for. Adding to it, there will be question and answer session after the presentation to start the selection process.

This process serves two purposes. First, in an economical and time-saving manner, information is delivered to all candidates [4]. On top of that, interviewers have the opportunity to conduct an initial screening of the candidates. Through observation of the candidates' behaviour as wells

interaction with each other, the impression they make, their interpersonal and communication skills are evaluated. During the interactions, interviewers are sometimes able to identify the candidates' level of knowledge.

The industry partner, VADS Berhad is currently implementing this type of interview to select their potential employees from a large number of candidates. They choose this method of interview rather than panel interviews and one-to-one interviews because their interview sessions are conducted every day and every interview involves large number of candidates.

2.4 Agents' retention

It is undeniable that a company providing this contact centre services needs to hire a very professional, knowledgeable and technology-competent employee who will hold the position of CSR. Unfortunately, some of the contact centre companies are facing high attrition in their human resource management. Some of the recruited employees might find that being a CSR does not actually serves their interest and skills, which then bring them to leave the company.

Apart from that, the working environments of a contact centre itself sometimes create the stress feeling and even boring for the contact centre agents. Their work routine which can be considered boring were tightly structured, agents just sat and took high number of calls. They are only able to take breaks at predetermined times.

[3] Eventually, they will feel stress to compete pressures between maintaining quality service standards and meeting quantitative goals. Stress, boring and uneasy feeling that linger them might be the contributing factors that most of the agents leave the company even just after two or three months of working.

Therefore, it is necessary for the firms to constantly recruit, select and hire new employees to replace the quitted agents. However, conducting face-to-face interviews to pre-screen large number of potential candidates are costly, time-consuming and very less-efficient. From this situation, there is a crucial need for an application system development that can automatically machine-score and evaluate the candidates' capabilities in handling and responding to real working problems, by focusing on the candidates' soft skills (listening skills, problem solving, typing efficiency and etc.).

From this application system also, the potential candidates can have an overview of similar system they will be handling and how to perform their daily routines, when they are selected later on. If they feel uncomfortable in handling this type of works, they can choose not to continue the interview process and offer this opportunity to other candidates. As a result, it is expected this method has a consequential cost impact as it lessen down the direst cost of recruiting, inducting and training staff continuously.

2.5 Knowledge Management in Contact Centre

Call centre operations entail information delivery, customer services and sales operations. What resides between the caller and the agent interaction is nothing but information. It is expected that CSRs locate and process the information quickly so that customer queries or problems could be handled expeditiously and efficiently [5]. The processed information is now knowledge to the contact centre. Information and communication technology (ICT) has become an integral part of all call centre management to facilitate the process of converting information into knowledge.

The simple situation explained above describes the connection between people, process and technology, which assemble the important

components for the pillars of knowledge management [6]. In this project, the pre-interview screening system is aimed to provide almost the same situation as what has been described above and to portray knowledge management values.

2.6 Application of Knowledge Based System

A knowledge based system (KBS) is considered as an intelligence system as it imitates the human ability to use the data, facts and reasoning in order to drive an action [7]. Based on the capabilities of having full range of data storage and manipulation, knowledge based system is somehow designed to execute rules of inference from stored data tables. Knowledge based system contains a knowledge base and 'inference engine'. Database of information that was gathered by expert is called knowledge base. Inference engine, on the other hand, is a problem solving method that enables KBS to perform logical reasoning and interpretation based on the knowledge.

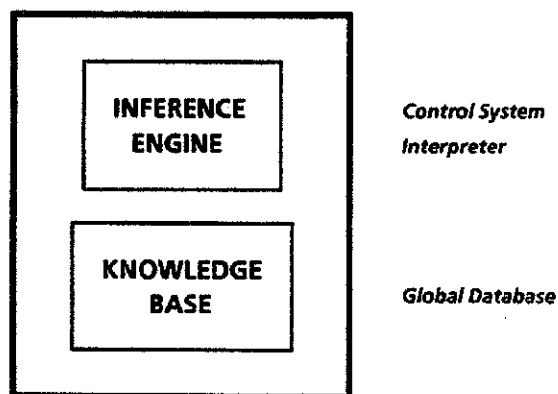


Figure 2: Components of KBS [7]

This project is going to be developed based on this concept of knowledge base system. Information from previous workflow, process flow and daily business operations of the contact centre are stored in the database. Then, the information which mainly consist of common scenarios

are translated in a form of audio format such as voice prompts to be used for candidate listening test purpose.

Inference engine then starts functioning when the candidate starts putting input based as their answer to that particular scenario. Inference engine will help the system to use the knowledge in the database to evaluate the candidate answer through comparison with real answer. It will then interpret the result to give score and determine whether the candidate passes the pre-interview screening or not.

2.7 Existing Interview System

	HRINTERVIEW.COM	Contexxa Perfect Interview TM Multi-user
System Description	An online interviewing and hiring software system that evaluates and get the best talent for an organization	A software package comes with over 1,500 interview questions, answers, and hints, which have all been professionally produced on digital video
How it works?	<ol style="list-style-type: none"> 1. Pick the skills required for the job. 2. Select the questions you want to ask. 3. Print the guide and conduct the interview. 4. Enter scores. 	<ol style="list-style-type: none"> 1. After login, user specifies type and length of interview. 2. The interview begins, the questions appear on the screen in full-motion video and sound. 3. The user must answer on the spot, just like in real interview
Other features	<ol style="list-style-type: none"> 1. Create analysis report 2. Add or edit skills and questions 	<ol style="list-style-type: none"> 3. Customized interview scenarios for every user 4. Administrative logon provides access to all saved interviews
Source	http://www.hrinterview.com/login.asp	http://www.contexxa.com/careerpro.html

Table 1: The differences between two existing interview systems

CHAPTER 3

METHODOLOGY

3.0 METHODOLOGY

3.1 System Methodology: Prototyping

In this project, Prototyping will be used as the Software Development Life Cycle (SDLC) methodology. Prototyping is a smart idea for a complicated and large system as it serves as a working physical model of a system or subsystem [9]. Functioning as a preliminary version of the system or component from which requirements are extracted, the client can get the “actual-feel” of using the system, since the interactions with prototype can enable the client to gather information and understand the requirement of a desired system. This in the end helps to reduce the development cost of the final system plus results a better-designed and reliable system.

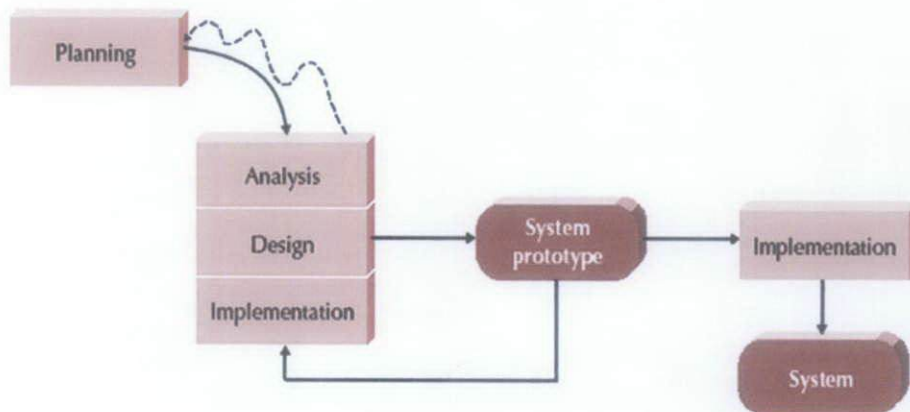


Figure 3: Prototyping methodology [10]

There are several advantages of using this prototyping methodology. First, the clients or users are actively involved in the system development and they easily understand the functionalities of the system being developed. As users have natural tendency of changing their mind in specifying the requirements, prototyping is seen to be best supporting of this tendency. The requirements are

revised and improved every time the prototype is being test-run. In addition, any error in the system development can be detected earlier rather than to debug the whole final system.

Despite all advantages, the pitfall of prototyping is the system complexity might be increased as the scope of the system may be expands beyond the original plans. Furthermore, prototypes generally lack security, auditing and data-integrity may be difficult to ensure, resulting to inefficient and difficult to maintain [9].

3.1.1 Key activities

3.1.1.1 Planning Phase

The planning phase is the fundamental process of understanding the reason for developing an information system and how to go about building it. During project initiation, a *system request* that shows a brief summary of a business need and how a system that support the need will create business value was created [10].

The person or team who generated the request for an information system (called the *project sponsor*) from the industry partner needs to work together to come out with a feasibility analysis.

3.1.1.2 Analysis Phase

In analysis phase, an *analysis strategy* was developed to include the analysis of current system (called the as-is system), if the industry partner had one, its problems, and then ways to design a new system (called to-be system).

The next step in analysis phase is *requirement gathering*. In this project, several interview sessions need to be conducted with the industry partner to understand their requirements. Joining their real-time employee selection process is required to understand the whole

process flow. The user needs' assessment which comprises of the input given by project sponsor and many other related people will lead to the development of a new solution system concept.

3.1.1.3 Design Phase

The *design phase* determines how the system will operate. In this project, design phase has a few steps which are architecture design, database and file specifications and program design.

In *architecture design*, the hardware, software and network infrastructure that will be used are identified. *Interface design* which is also under architecture design specified how the user will through the system by using controls created and navigation method [11].

The *database and file specifications* were developed to define what data will be stored and where they will be stored. *Program design* defines the programs that need to be written, i.e. the programming language to be used.

3.1.1.4 Implementation Phase

The implementation phase of this project consisted of system construction, installation, and establishment of a training plan for the system.

During *system construction*, the system was built and tested to ensure it performs as designed in design phase. After being constructed and regularly tested, then the final system was then installed. A *training plan* is then developed to teach the user of using this new system.

3.2 Research Methodology

Research methodology involves several ways or techniques which are used to gather information and system requirements. The

data gathering was being done to understand the user needs in detail which then derive the user needs assessment.

3.2.1 User Needs Assessment

User needs assessment is a type of tool that helps to understand user needs. It is good for strategic planning to gauge interests, determine needs and establish priorities of the user requirements. User needs assessment aligns collections of resources with user needs to achieve desired outcomes [13]. There were two techniques involved which are unstructured interviews and observation.

3.2.1.1 *Unstructured interviews*

Interviews are considered a primary technique of fact finding and information gathering [13]. Most interviews are conducted with customers or users. There are two basic kinds of interview: structured (formal) and unstructured (informal). In this project, unstructured interviews were being used. Unstructured interviews are more like informal meetings, with no predetermined questions [13]. Unstructured interviews are methods to gain general understanding on the information available. The purpose of this unstructured interview is to encourage the users or clients to speak his or her mind.

In this case, unstructured interviews involved obtaining the industry partner's requirements on the project by asking a few sets of questions. Unstructured interview was chosen because this method is simple and quite flexible. Flexible here means when interviewing the interviewees, the author can change and add questions based on the scenarios explained. The interviewees might as well add more relevant information that is slightly related to the inquiries along the run.

3.2.1.2 *Observation*

Sometimes, there were situations when the author found it difficult to obtain complete information from the unstructured interviews conducted before. In some cases, it was hard to understand the whole process flow by just listening. Thus, observation was found to be an effective fact-finding technique. Observation is a technique to have a general view and to identify current workflows or process flows. It involved observing how people actually work and carry out their daily task as well as observing their interaction with system.

To apply this technique, the author needed to do a few visits to the industry partner company which is VADS Berhad to observe and have a general idea how they are currently working and what are the systems involved. During the activity, observation could have been taken in two forms which are passive observation and active observation. During passive observation, the author just observed business activities which involve how the agents work and what they need to do, without any interruption or direct involvement. The author received information from the industry partner's representative while at the same time observing. Meanwhile, during active observation, the author had been given the chance to join in the real interview session and participates in the activities. The author effectively became part of the team by indirectly playing the role of interviewer. From this, the author was able to analyze what skills are required to select potential employees.

3.2.2 Project Activities

3.2.2.1 *First visit to the industry partner*

Date : 16th August 2010

Venue : Plaza VADS, Taman Tun Dr. Ismail, KL

Persons involved: 1) The VADS Vice President of BPO,
Mr. Bernard Chin

2) The management team of HR and IT
representatives of VADS

3) The author's supervisor, Dr. Alan G.
Downe

4) The author

Purpose : To gain general understanding on business
process and system requirements



Figure 4: During the first meeting

During the interview process, a few main questions were asked which are as follows:

- What are their requirements on the system?
- How the system will be value added to their business process?
- In what type of platform the system should be developed? Stand-alone or intranet application?

Through the observation, the author was given the chance to observe the current workflow of the call centre

floors, observe the way the agents carry out their daily tasks and observe how the agents use the current application system to record their works.



Figure 5: VADS' call centre floor

3.2.2.2 *Second visit to the industry partner*

Date : 3rd September 2010
Venue : Plaza VADS, Taman Tun Dr. Ismail, KL
Persons involved: 1) The HR Recruitment Officer, Mr. Shashidharan
2) The author
Purpose : To gain general understanding on the interview and selection stage of the recruitment process.

During the interview, the author managed to gain some information on the interview and selection process flow. Information on what is the criteria and characteristics that they are looking for in each agent candidates are also gained. In addition to that, the author had been given the opportunity to sit in the real interview session that was conducted on that day. During this session, the author managed to observe how the interview was being conducted and what were the questions asked to the candidates. As part of it, the author also observed how the candidates sit for the typing test.

3.3 Tools

3.3.1 Hardware

3.3.1.1 Personal computer

Personal computer (PC) is the main tool to be used in developing this application system. In addition, this PC need to be connected to the Internet as this application system is a web-based application.

3.3.1.2 Headset

Headset is be used together with PC when running the application system. As this system will involve voice prompts, headset is required to enable users listen to the audio instruction.

3.3.2 Software

3.3.2.1 Adobe Dreamweaver CS5

Adobe Dreamweaver (Formerly known as Macromedia Dreamweaver) is a web development application. It enables web pages to be designed visually or directly with codes, develop pages with content management systems and accurately test browser compatibility [16].

The advantage of using Dreamweaver is that users are able to preview websites in locally installed web browsers. In addition, Dreamweaver provides transfer and synchronization features, the ability to find and replace lines of text or code by search terms and regular expressions across the entire sites. Dreamweaver comprises a useful feature called a templating feature that allows single-source update of shared code and layout across entire sites without server-side includes or scripting [17]. Dreamweaver is an application that provides easy access to dynamically-generated content and interfaces of web sites.

3.3.2.2 Domain name and Web hosting

A domain name is an identification label that defines a realm of administrative autonomy, authority or control in the Internet [18]. Formed by the rules and procedures of the Domain Name System, domain names serve as hostnames which identify Internet Protocol (IP) resources such as web sites. The domain name for this application was registered as www.fypipss.com.

A web hosting is a type of Internet hosting service that allows individuals and organizations to publish their own website via the World Wide Web [19]. Web hosting service allocates spaces for web sites on computer servers that are connected to the Internet all times (24/7). In order to store and retrieve all files related to IPSS, the author had subscribed a Malaysia local hosting for a year.

3.4 Project Gantt Chart

A Gantt chart resembles project schedule that is being illustrated by a type of bar chart [21]. Gantt charts show the start and finish dates of the terminal elements and summary elements of a project. Applying it to this project, this project started in the month of August 2010 and it is targeted to end in April 2011.

Terminal elements and summary elements comprise the work breakdown structure of the project [21]. The main elements of this project Gantt chart refer to the components of the Software Development Life Cycle which are Planning, Analysis, Design and Implementation. Each elements is then broke down into several specific structures. The project Gantt chart for IPSS is shown as below figure:

Activities	Months	2010					2011			
		8	9	10	11	12	1	2	3	4
Planning		■								
Specify scope and requirements		■								
Develop project schedule		■								
Analysis			■	■						
Requirements gathering			■	■						
User need analysis			■	■						
Design					■					
Identify system parameters						■				
Interface design							■			
Implementation								■		
Build system								■		
Installation									■	
Testing									■	
Project Dissertation										■
Project Presentation										■

Figure 6: The project Gantt chart

3.5 Key milestones

Key milestone is a kind of marking at the end of a stage that shows the completions of a work package of phase, within the framework of project management [22]. It also shows whether the project owner meets the timeline planned at the earlier stage of the project management. Besides being a signal for a key deliverable completion, it also may signify important decision of the particular information, which then outline or affects the future of a project. As for now, the author still keeps within the timeframe which is to complete the analysis phase by October 2010.

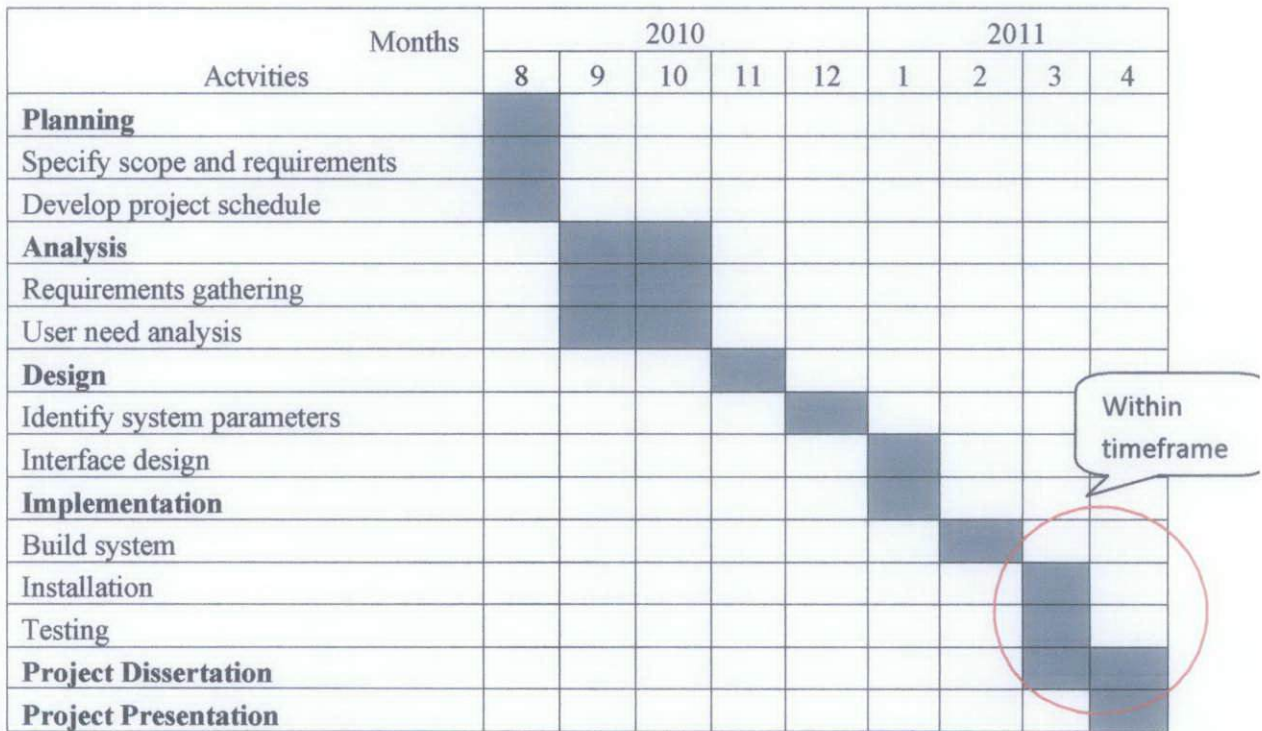


Figure 7: The project Gantt chart with key milestones

CHAPTER 4

RESULT AND DISCUSSION

4.1 RESULT AND DISCUSSION

4.1.1 Interview results

The author had interviewed some of the HR personnel in VADS Berhad. They have explained their recruitment and selection process. The author had been asked to sit into their interview session to have a clear picture of how the selection process was being carried out. The recruitment and selection process of the company is summarized as per below figure:

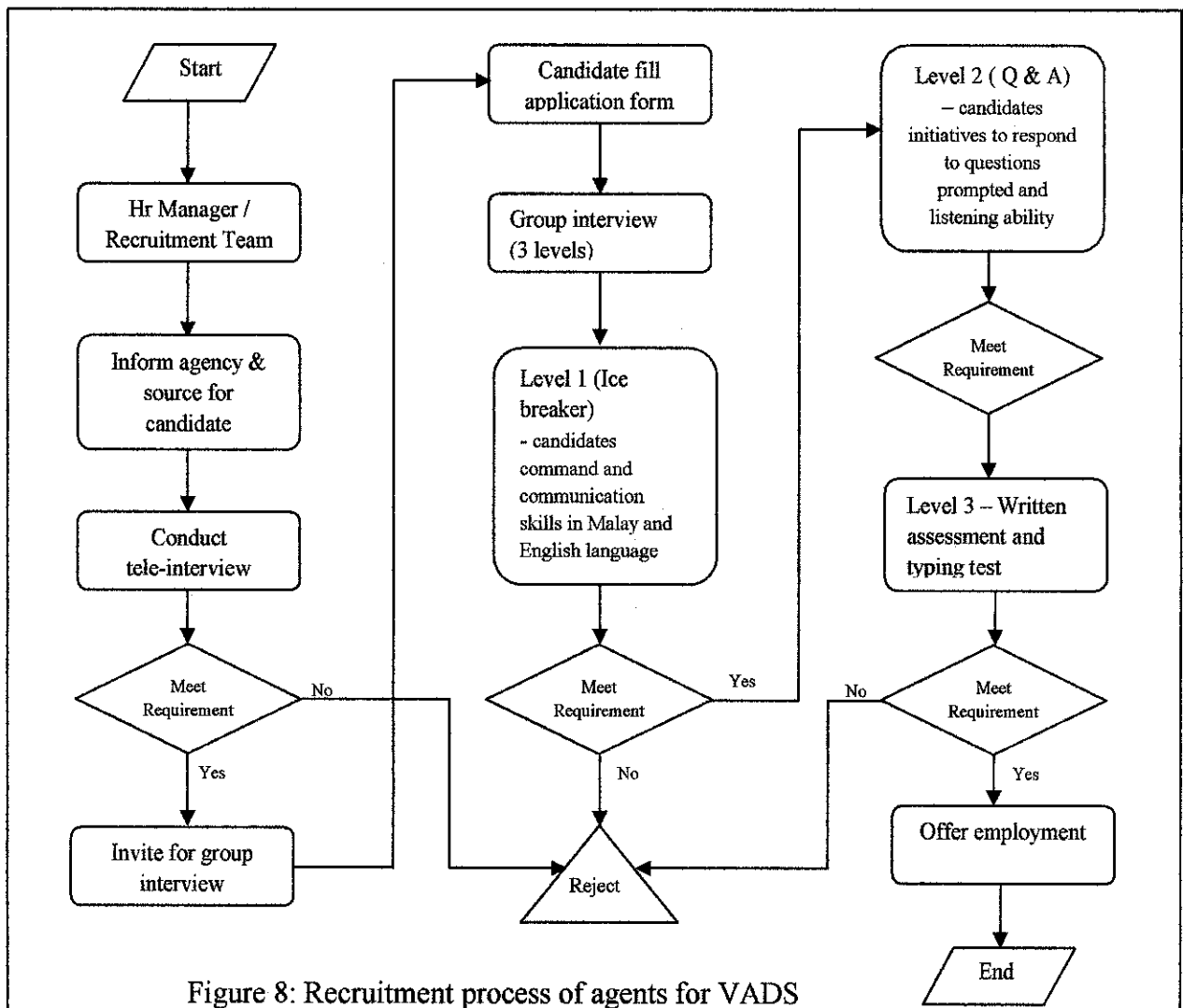


Figure 8: Recruitment process of agents for VADS

4.1.2 Observation results

From the author's observation during the visit, the CSR candidates were being interviewed just about their personal background and interests. The purpose of interviewing here was just to evaluate their communication skills especially in English language proficiency and how they tend to answer each questions being asked to them.

However, through the observation, the author identified the gap existed in the interview method, apart from serving its objective. Candidates were not really being exposed or informed on how the real working environment and their nature of job would be. The candidates did not have a clear picture of how their job need to be conducted unless they go through the training provided after they have been selected during the interview. From the current situation, the author found that there was a critical need for them to have an application that resembles a simulation of real working situation.

Besides being evaluated in terms of communication and interpersonal skills, the candidates were also being tested on their typing skills. Typing skills are important for CSRs as they need to key in as quickly as possible to record the information they got through the phone conversations. Currently, VADS is using the typing test software on the internet, TypingTest.com to test the candidates' ability in typing.

The TypingTest.com is a free online tool that offers a typing test platform. This tool is based on the concept of '*what you see, you type*'. It enables users to select a text to type and test time. Apart from testing, TypingTest.com is a good tool for repetitive practice of boosting typing speed and accuracy. After the quick test, users are able to view their speed, accuracy and net speed such as words per minute. From the result, users can evaluate and improve their typing skills from time to time [8].

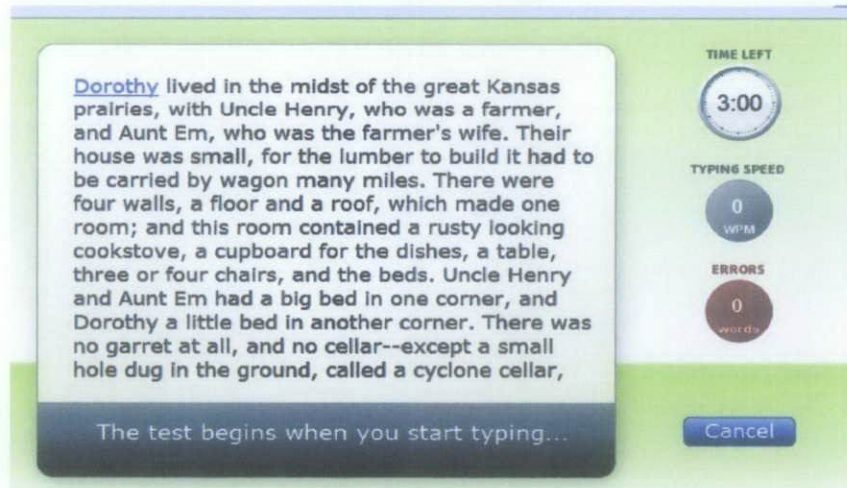


Figure 9: The interface for typing test [8]

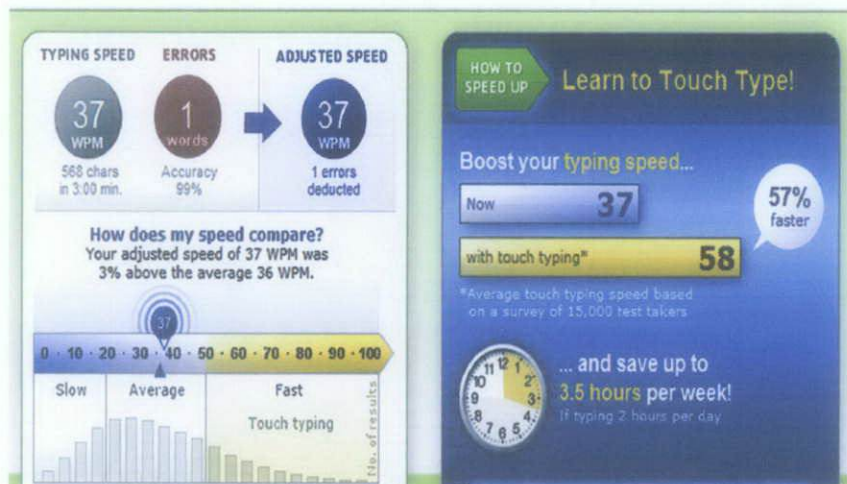


Figure 10: The interface for typing test result [8]

However, TypingTest.com does not provide the application where users can listen to a group of sentences and type what they listen. Thus, by relying solely on this tool, it is less efficient for VADS as they are hardly to identify which candidates have a good listening, typing and at the same time problem solving skills.

4.2 MODELLING

4.2.1 Use Case Diagram

An *actor* is whoever or whatever (person, machine) interacts with a use case in expectation of receiving a useful result. In this project, only three actors are involved which are the *Candidates*, the *Administrator* which mainly are Human Resource personnel and the *Training Staff* from the Training and Development department.

A *use case* represents a unit of functionality of value to an actor [12]. However, not all use cases need to be directly associated with an actor. Such use cases bring value to an actor by being associated with one or more other use cases that, in turn, are associated with an actor. A *use case diagram* is a visual representation of actors and use cases, together with any additional definitions and specifications, which is as following diagram.

Use Case Diagram

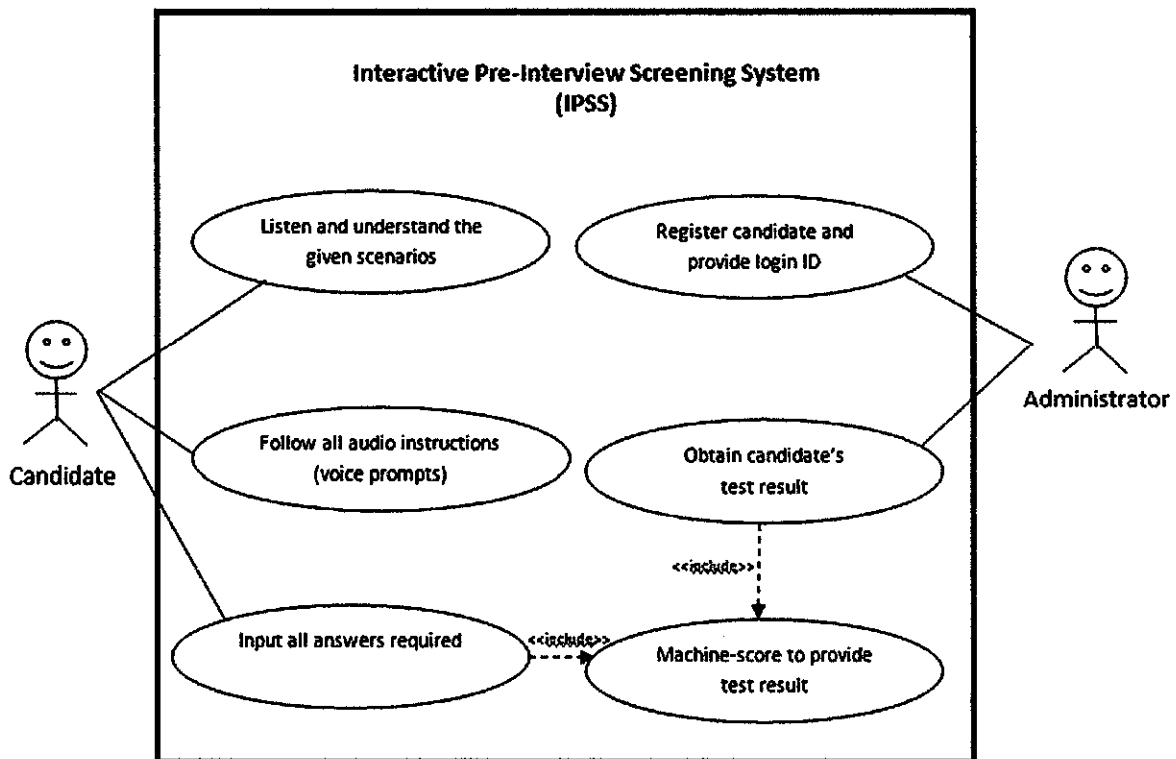
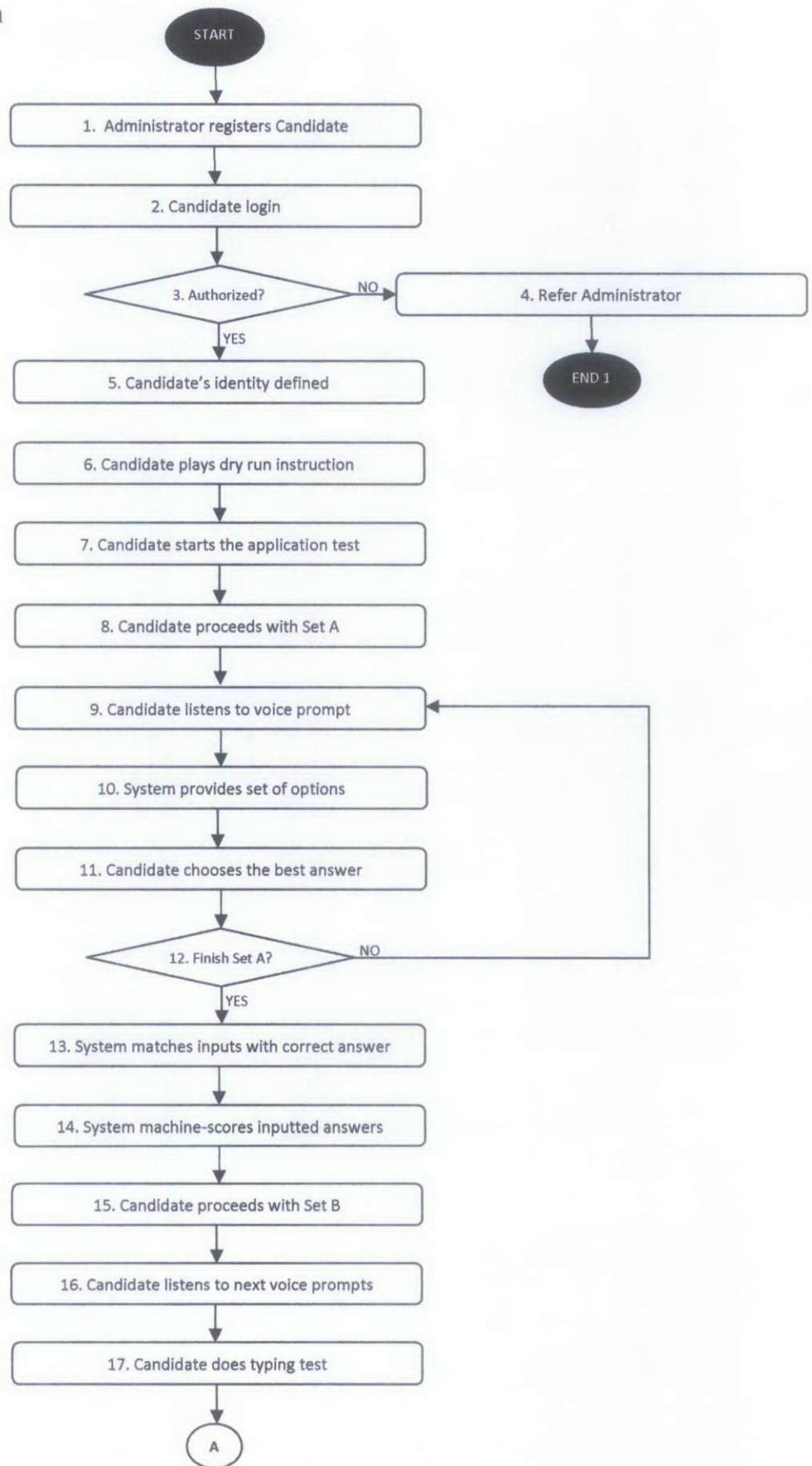


Figure 11: Use Case Diagram for Interactive Pre-Interview Screening System (IPSS)

4.2.2 Activity Diagram

Activity diagram shows the sequence of activities in a process, including sequential and parallel activities, and decisions that are made [13]. The symbol of a rectangle with rounded edges represents each activity occurring in this project. The arrow represents events that take place for each activity at a certain time. The diamond symbol represents decision which then provides two branches of solution for next activities.

Activity Diagram



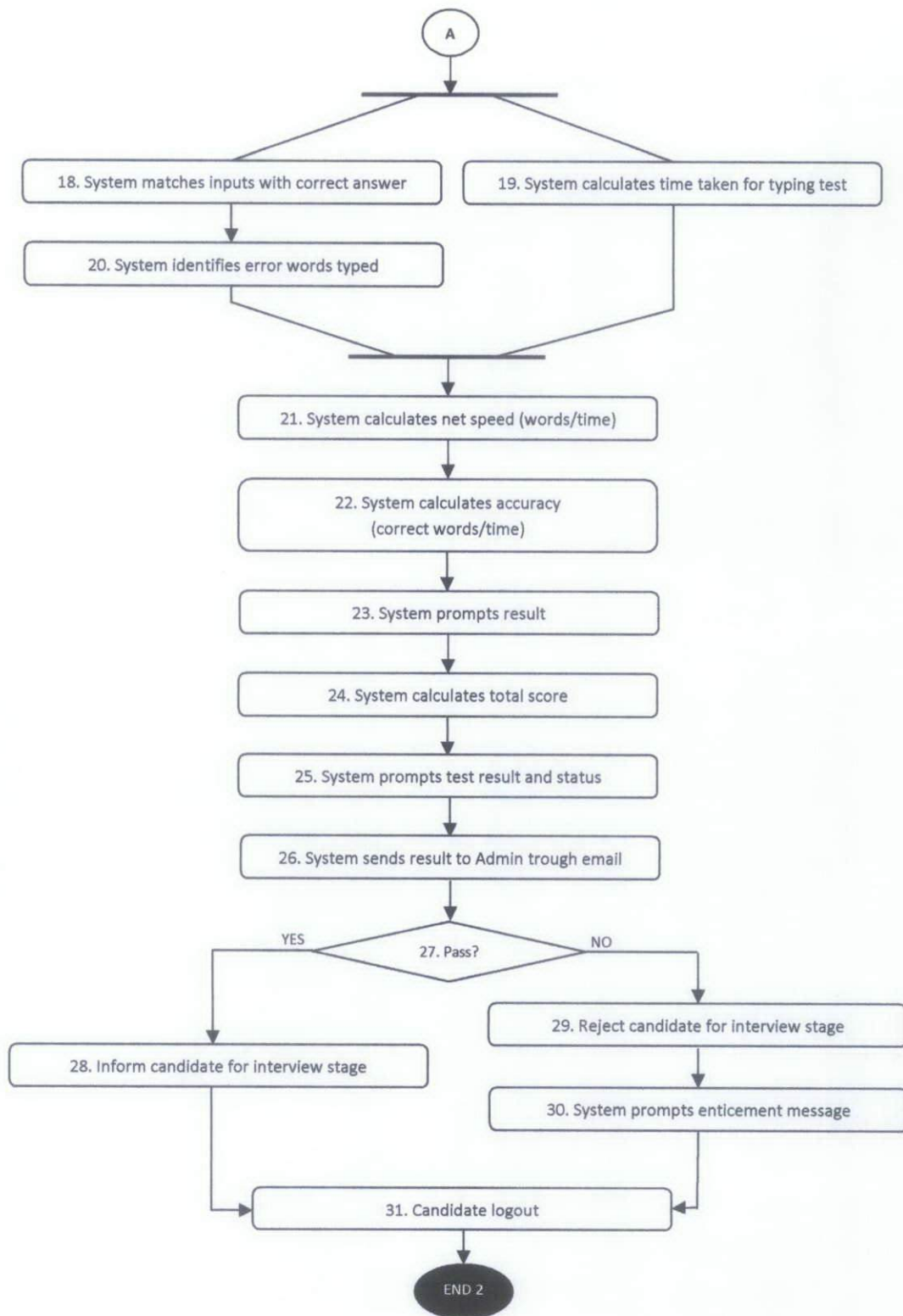


Figure 12: Activity Diagram for Interactive Pre-Interview Screening System (IPSS)

4.3 Prototyping: Interfaces Design

Besides the *Homepage* interface, the rest of the interfaces are divided into candidate's and administrator's site.

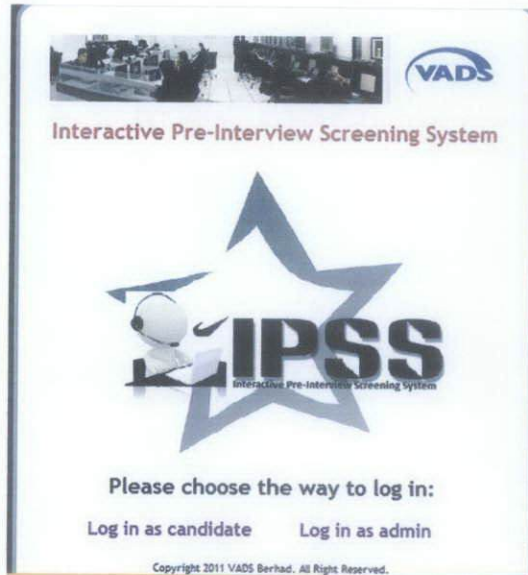


Figure 13: The *Homepage* interface

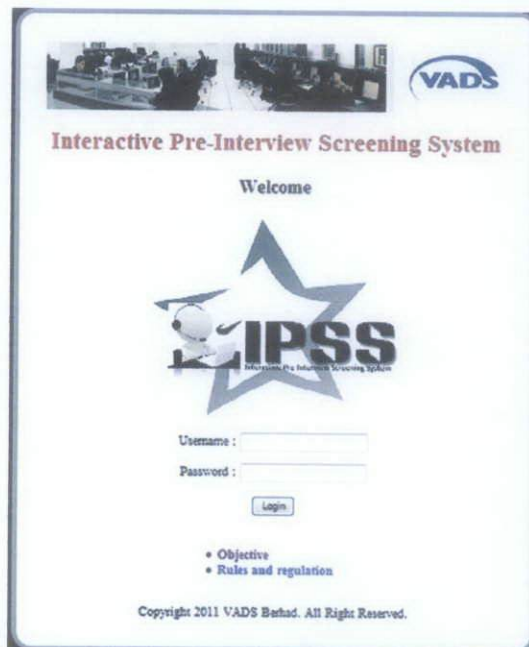


Figure 14: Candidate site - the *Login* interface

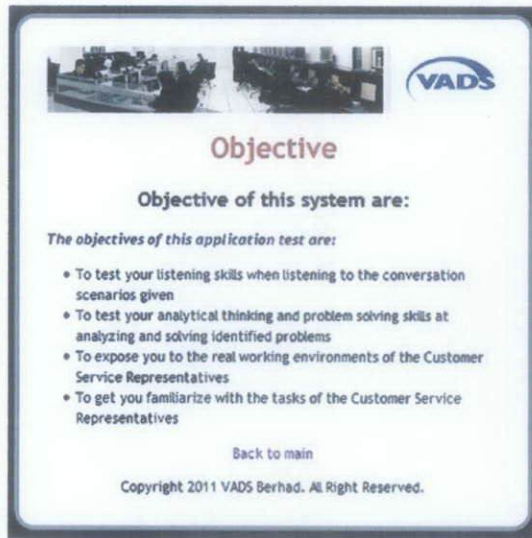


Figure 15: Candidate site - the *Objective* interface

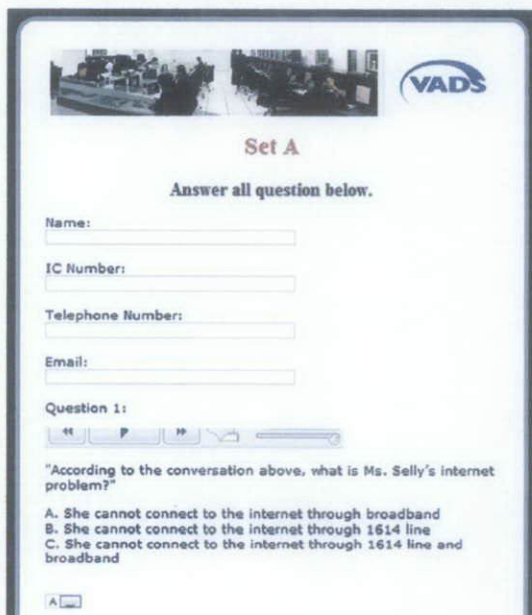
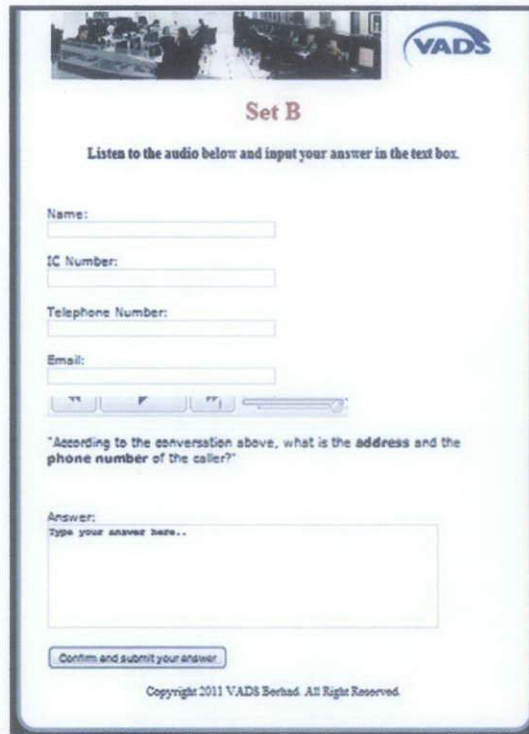


Figure 16: Candidate site - the *Set A* interface



Set B

Listen to the audio below and input your answer in the text box.

Name:

IC Number:

Telephone Number:

Email:

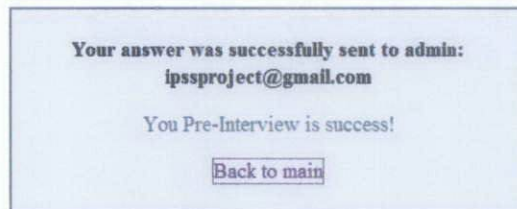
Audio Player: [Play] [Stop] [Volume]

"According to the conversation above, what is the **address** and the **phone number** of the caller?"

Answer:
Type your answer here...

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Figure 17: Candidate site - the *Set B* interface



Your answer was successfully sent to admin:
ipssproject@gmail.com

You Pre-Interview is success!

Figure 18: Candidate site - the *Notification* interface



Interactive Pre-Interview Screening System **NEW**

Home | All Candidates | Selected Candidate | Log In to back end | Log Out

Welcome to Admin Site!

Here you can...

- view the list of candidate
- view the selected candidates
- insert data for all candidates
- insert data for selected candidates

**To insert data of the new candidates, please log in to back end site of admin.*

Figure 19: Administrator site - the *Main* interface



Figure 20: Administrator site - the *View 1* interface

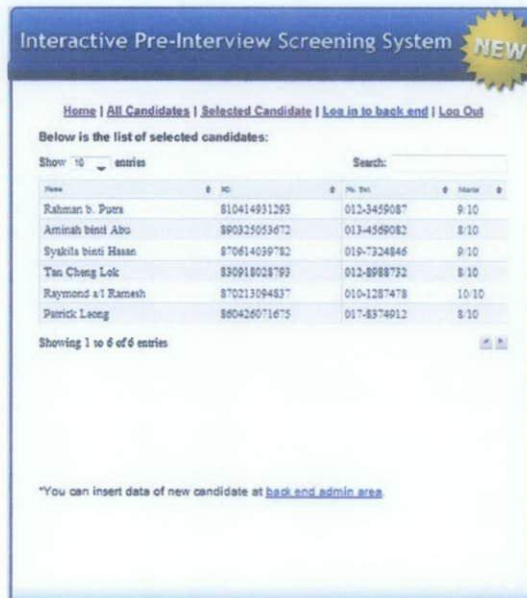


Figure 21: Administrator site - the *View 2* interface

4.3 Software Testing

Once the system has been developed or is reaching the completion stage, it is a compliance to conduct a software testing. Software testing is a type of investigation conducted to provide stakeholders with information about the quality of the product or service under test [23]. Software testing, besides being the process of executing a program or application with the intent of finding software bugs (errors or other defects), it also provides independent view of the software to the business to appreciate and understand the risk of software implementation [23].

Software testing can also be understood as the process of validating and verifying that a software/program/application [23]:

1. meets the business and technical requirements that guided its design and development;
2. works as expected; and
3. can be implemented with the same characteristics.

However, testing can never completely identify all the defects within an application but it furnishes a criticism or comparison that compares the state and behaviour of the product against some specifications, comparable products, past versions of the same product, user or client expectations or other criteria.

Every application has a target audience or user. For IPSS, it is created purposely for the Customer Service Representatives. Therefore, when an organization (i.e. the industry partner) requires an application, it can assess whether the application will be acceptable or applicable for its end user to smoothen the recruitment process.

To assess IPSS, there were a few measurement criteria in software testing need to be evaluated, which are as follow:

1. Scope

Since the purpose of testing is to detect application failures so that defects may be discovered and corrected, it must be established under specific conditions. The scope here includes examination of code as well as execution of that code in various environments and conditions. For example, the codes in IPSS need to run in a condition to enable the application to test the end user listening skills. So, the code must provide a functionality of playing audio files.

2. Acceptance

Testing conducted to enable the client to determine whether to accept a software product or an application [24]. This acceptance testing is normally performed to validate the software meets their requirements. In order to obtain the result of this testing, the author needs to field test IPSS at the industry partners required workplace. This test needs to be conducted for candidates applying for CSR position during the selection process of the recruitment.

3. Automated

Automated testing is done to execute the code and ensure the system runs without manual intervention. The use of this testing is also to make comparison of actual outcome to predicted outcomes, the setting up of test preconditions and other test controls [24]. After executing this test a few times, the author found that there were several functionalities could not run automatically and conversions were made involving human intervention to manually check the outcome of the application.

4. Compatibility

The purpose of this testing is to check whether the application is compatible with other elements of a system with which it should operate (i.e. browsers, Operating Systems) [24]. For this compatibility, IPSS was tested using two types of web browsers which are Mozilla Firefox and Google Chrome. The author found out that IPSS executes well on Google Chrome compared to Mozilla Firefox in terms of loading speed and interface appearance on the screen, provided a good Internet connection.

5. User rating

This test should get the user response and rating after using the complete application. The target user whom to test this application specifically is the candidates applying for CSR position. The criteria that should be evaluated include system performance (i.e. loading speed, workable links, etc.), ease of use, user-friendliness, understandable instructions and other criteria.

CHAPTER 5

RECOMMENDATIONS

Since IPSS was built as a prototype model, there are a few recommendations could be made for this system's expansion and continuation. These suggested future works might serve as the outline for the system functionalities to be further developed and enhanced in order to totally serve the industries' demand. The recommendations are as follows:

1. This system should include an authentication function. This system will capture the candidate details and record one of the data as the candidates' identifier (i.e. each candidate's IC number will be recorded as the candidate's ID number in the system) to differentiate one candidate from the others. Only the system administrator is allowed to key in the candidates' details in the system for data security purpose.
2. The system's content should be more comprehensive. The content should be categorized into several modules. Each module will test the candidates for different skills. For example, there should be a set 10 simulated scenarios and corresponding questions to specifically test the candidates' understanding in emphatic feeling, the other set should test the candidates' ability in predicting and making decisions on possible actions to be taken to solve the given scenarios and another set should test the candidates for simple arithmetic function. Those examples are in addition to the current functionalities that IPSS is performing.
3. Based on the score for each module, this system should be able to categorize the candidates according to several categories, characterising them as excellent potential employees, middle-potential employees and low-potential employees.
4. The application should produce summary reports and provide them automatically to management for HR planning usage. For

example, based on the score of each candidate, the strengths and weaknesses of applicant performance in specific area or skills could be used to indicate the sort of training employees will require once they start working. The report could be produced in two types which are database version (softcopy) and print-out version (hardcopy).

CHAPTER 6

CONCLUSION

Interactive Pre-Interview Screening System (IPSS) for High-Performance Customer Contact Workforce project is targeted to be an outstanding tool at increasing Human Resource Management (HRM) effectiveness and efficiency, especially in employee recruitment and selection process for customer contact environments.

To achieve the objective, the scopes of study that has been focused on were providing a simulated environment for the candidate plus testing and evaluating candidates' basic skills. There were four phases involved in the Software Development Life Cycle which is planning, analysis, design and implementation. Observation and interview techniques were used for data gathering process. The design and development of IPSS were performed through prototyping methodology. Since IPSS was just a prototype model, there are recommendations being made as an outline for the system functionalities to be further developed and enhanced in order to serve the industries' demand.

This project development has achieved its objective which is to provide a solution system which at the same time applies and integrates the theory of knowledge management. Upon completion of this project, it is hoped that this project will benefit the industry partner as well. As such, there is considerable potential for downstream commercialisation of the resolution system.

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APPENDICES

1. Sample of conversation scripts for audio recording with the corresponding questions and answers.

Call 1

Agent : Hello, thank you for calling MyNet. This is Emma speaking, how can I assist you?

Cust : Hello, good morning. I'm a 1614 MyNet user, I don't why I cannot connect to the internet

Agent : *1614...ok*

Cust : it is saying that my password and username....

Agent : is wrong?

Cust : Erm, when I connect to the internet using the broadband, I can browse the internet and check my email account, but when I want to connect it using the 1614 line, I fail...so I wonder is it because I have not used this account for quite sometimes?

Agent : I see..

Cust : I heard also that MyNet had changed the policy for 1614 line a few months ago, but I did not confirm it..is it due to that?

Agent : Ok, before that, may I know your name?

Cust : My name is Selly

Agent : Ok, Ms. Selly, can you give me your username for 1614? I'll check for you.

Cust : KAIYING

Agent : Ok, can you hold for a while, I'll check for you.

Question: According to the conversation above, what is Ms. Selly's internet problem?

Answer : A. She cannot connect to the internet through broadband

B. She cannot connect to the internet through 1614 line

C. She cannot connect to the internet through 1614 line and broadband

Call 2

Agent : Hello, thank you for calling MyNet. This is Anne speaking, how can I assist you?
Cust : Yeah, I want to make complaint about my Streamnet
Agent : *Streamnet ya?*
Cust : ya
Agent : Your name is Ms.?
Cust : I'm Ms. Ellyna
Agent : Ok, your connection number for Streamnet connection is 054560351?
Cust : Yes, correct.
Agent : Ok, Ms. Ellyna, can I get your Streamnet username or login ID?
Cust : The ID is YEZMON
Agent : Y..E..Z..M..O..N ya?
Cust : yup.
Agent : Is this account under your name?
Cust : Yes.
Agent : May I know what is the faulty with your Streamnet ya Ms?
Cust : The Streamnet will be cut off, sometimes when I called the 111, it will automatically connected, sometimes I will be disconnected again.
Agent : Disconnect again ya? Ok, Ms. Ellyna, may I know about the DSL in your modem, is it blinking or stable?
Cust : Now it is stable.
Agent : Ok, means that after you put in your username, it will be cut off again?
Cust : Yeah, correct.
Agent : So I assume now that the connection is intermittent. Could you please hold for a while? I'll try to fix it through your port.

Question: According to the conversation above, what is the condition of the current DSL lights?

Answer : A. Blinking
B. Stable
C. Intermittent

Call 3

Agent : Hello, thank you for calling MyNet. This is Alia speaking, how can I assist you?
Cust : Hello
Agent : Good morning
Cust : Hello
Agent : Yes, a very good morning
Cust : can you speak louder? I can't hear you, you know..
Agent : yes, go ahead please
Cust : Ok, I'm calling regarding my Streamnet
Agent : Ok, what's the telephone number? The telephone number linked to it...
Cust : 2161 3915
Agent : Ok, this Streamnet belong to who?
Cust : Aminah
Agent : May I know who's on the line please?
Cust : Murni Aminah here.
Agent : I've checked in the system, this number has no service for internet Ms. Aminah..
Cust : But, I have the Streamnet connected in this
Agent : Yeah, but this number has no service for internet, what's the actual number linked to the Streamnet?
Cust : Maybe 3902
Agent : 3902 ya...one moment please.. Ok, what happened Ms. Aminah?
Cust : The Streamnet is not stable and now there is no service at all
Agent : Ok, let me check ya...

Question: According to the conversation above, what are the numbers linked and not linked to the internet?

Answer : A. 2161 3902 & 2161 3915
B. 3161 3902 & 2161 3915
C. 2161 3915 & 2161 3902

Call 4

Agent : Hello, thank you for calling MyNet. This is Mira speaking, how can I assist you?
Cust : Hello, I'm calling from Secret Garden. My internet is having problem.
Agent : Can I have the telephone number used for the internet connection?
Cust : 79832005
Agent : Ok, please hold on ya...
Cust : thank you
Agent : Can I have your name please?
Cust : Ms. Daisy
Agent : Ms. Daisy, can you give me what kind of problem you are facing...is it connection failure or slow connection?
Cust : ya, connection failure
Agent : Are the lights on your modem blinking?
Cust : Both ok..
Agent : All the lights on ya..stable ya?
Cust : ya
Agent : The connection you are using, is it automatic or manual ms.?
Cust : Automatic
Agent : using a wireless router is it?
Cust : yes
Agent : can you just plug in the cable from your computer first to the modem. I'm gonna try to configure your computer to your modem again
Cust : ok, sure no problem

Question: According to the conversation above, what type of problem is Ms.Daisy facing? What type of connection is she using? What type of router is used?

Answer : A. Slow connection, automatic, wireless
B. Connection failure, manual, wired
C. Connection failure, automatic, wireless

Call 5

Agent : Hello, thank you for calling MyNet. This is Lina speaking, how can I assist you?

Cust : Hello, MyNet?

Agent : ya..

Cust : I would like to ask...yesterday I just reset my Streamnet password and I wanted to log in to the Mywebmail.net but then why the password did not match ya or it needs 24 hours to refresh or what?

Agent : Where did you change the password? Is it at Mywebmail.net?

Cust : No..no ..I change it at service care...

Agent : Service care you mean Mybills right?

Cust : Yeah..I received the confirmation already and I can log on to the internet but I can't just couldn't log in to Mywebmail account

Agent : Ok, before that, can I get your phone number under Streamnet? And your name?

Cust : 01-6790932, I'm Erin

Agent : Ok, Ms. Erin, let me check in the system first..hold on please. Can you go through the internet?

Cust : Yeah I can, just the Mywebmail only I cannot access. I try both old and new passwords also, I cannot login.

Agent : Ok, may I know what your password for the login is? I need to check in the system

Cust : It is just the same with my login ID. Never mind, I try to login again and call you back later.

Agent : Ok, sure..thank you.

Question: According to the conversation above, what is the actual problem of the caller?

Answer : A. She cannot access to the Mywebmail due to password mismatch

B. She cannot browse the Internet after resetting the password

C. She cannot browse the Internet and access the Mywebmail

Call 6

Agent : Hello

Cust : Hello

Agent : I'm Lili, calling from MyNet. Are you Ms. Penny?

Cust : Yup, I'm Penny.

Agent : Ok, Ms. Penny, it's about your report on the connection, I want to confirm back the username, FNICK right?

Cust : Yes, correct.

Agent : Is the speed at your modem 2048?

Cust : Err..you mean the speed test?

Agent : Basically, when you connect to your modem directly using your phone line, it will state the speed of your modem...you are using auto connection isn't it?

Cust : yup auto, ok..

Agent : Ok, we've checked from our end, your modem is still not configured. So, I need to configure it for you.

Cust : Ok, so how should I go about it?

Agent : I have already reset the configuration. I need your help to test the speed now. Are you in front of your PC now? Can you check it based on my instructions?

Cust : Yes, I'm in front of my PC..ok, sure, no problem.

Question: According to the conversation above, how the agent is going to help Ms. Penny?

Answer : A. Ms. Penny needs to configure first by herself

B. She had reset the configuration and need Ms. Penny's help to test the speed

C. She is going to Ms. Penny's house to fix the problem

Call 7

gent : Hello, thank you for calling MyNet. This is Siti speaking, how can I assist you?
ust : Hello, good evening Siti. I'm Mary. Can you help me with my internet problem?
gent : Ok, sure Ms. Mary. What type of modem are you using?
ust : I'm using the TPL modem. Do you want me to connect it now?
gent : Ok, please don't connect first...do you still remember your Streamnet username and password?
ust : Yeah...username 'AnneMary57' and password "am5ry7"
gent : Ok, one moment please. Turn on the modem now.
ust : Ok
gent : What windows are you using right now?
ust : Windows XP
gent : Ok, now go to your PC. Go to Control panel, choose the internet option..can you get me?
ust : Ok, then
gent : Click on the Connection button and and click on Setup
ust : come again
gent : Setup button. There will be a popup window of New Connection Wizard..do you get that?
ust : Yeah, what's next?
gent : Choose option 1, Connect to internet and then for 2nd option, choose Setup New Connection
ust : ok...
gent : Ok, then you choose Connect using broadband. Here you need to enter the username and password.
ust : All right. Let me enter them first.

Question: According to the conversation above, what is the correct flow of the Internet connection windows?

- Answer :** A. Control Panel > Connection Setup > Internet Option > New Connection Wizard > Connect to Internet > Setup New Connection > Connect using Broadband > Insert Username and Password
B. Control Panel > Internet Option > Connection Setup > New Connection Wizard > Connect to Internet > Connect using Broadband > Setup New Connection > Insert Username and Password
C. Control Panel > Internet Option > Connection Setup > New Connection Wizard > Connect to Internet > Setup New Connection > Connect using Broadband > Insert Username and Password

Call 8

Agent : Hello, thank you for calling MyNet. This is Rita speaking, how can I assist you?
Cust : Yes hello, I'm Jess from ASA Corp. I need to know the status of my ticket no 2-278478-D
Agent : Ok, one moment please...May I know what your name is?
Cust : I'm Jess.
Agent : Yes, Ms. Jess, hold on please, I need to check in the system first
Cust : ok
Agent : Just now you already made a report on this right. It is regarding your internet right?
Cust : Yes, it is about the WAN connection for my company. May I know the status?
Agent : This report is still in progress.
Cust : What do you mean by 'still in progress'
Agent : It means that our technician is still working on the report.
Cust : still working?? How long will it take?
Agent : Yup, I not sure. Can I put you on hold for a while? Let me check first
Cust : ok
Agent : Ms. Jess, thank you for holding. You actually called a wrong department for your problem.
Cust : Really? Why?
Agent : My department is about internet and networking but your problem is regarding your billing. I give you the right phone number, could please call this number? 07-22856000
Cust : I repeat 07-22856000.
Agent : Yes.
Cust : Ok, thank you.

Question: According to the conversation above, what is the agent giving a new phone number to the caller?

Answer : A. Because the caller called the wrong department
B. Because the phone line is engaged
C. Because the phone number is invalid

Call 9

Agent : Hello, thank you for calling MyNet. This is Liya speaking, how can I assist you?
Cust : Hello, Ms. Rosnah..I'm calling from MBI. I want to make a report.
Agent : A report on what ya?
Cust : About the phone lines in my office. Some of the phones can't be use to call out and call in.
Agent : Can't be used for call out and call in ya? Ok, let me verify the phone number that you gave just now, 06-8983094, right?
Cust : Yes.
Agent : This line is under whose name?
Cust : It's under MBI.
Agent : Ok, can you please hold on. I need to check the line connection in our system first.
Cust : Ok.
Agent : Ms. Rosnah, thank you for holding. I've checked the line. There is no problem with the line connection?
Cust : Really? Then Why I still can't use the phone line?
Agent : Maybe it is because of the phone device. Have you checked with the phone vendor?
Cust : I see...no, not yet. So now I need to forward this problem to them, is it?
Agent : Yes, because there is no error in the line connection from our side.
Cust : Ok2
Agent : You try first. If let's say you are still having the same problem of unable to call in and out, then you can call us back and lodge the report again.
Cust : Ok, I see...thank you.

Question: According to the conversation above, what is the solution given by the agent to the caller?

Answer : A. The caller needs to call another department
B. The caller needs to call back and make a report
C. The caller needs to clarify the matter with the phone vendor first

Call 10

Agent : Hello, thank you for calling MyNet. This is Sue speaking, how can I assist you?
Just : Hello, every time I call up, I need to scold you all you know. I get very fed up with my Streamnet la..Is this recorded?
Agent : Yes it is recorded.
Just : Recorded huh, very terrible you know...whoever listen to this message please la...why I cannot connect to the internet?? For 2 days already you know..I get so fed up.
Agent : 2 days ya?
Just : haiyaaa....everymonth I faced the same problem. Why is it so terrible?
Agent : Every months ya? Did you make reports to us then?
Just : I've been calling and calling...now I get fed up with you all you know!
Agent : I see..
Just : can you imagine because of this connection problem, I cannot communicate with all my business partners...this is so terrible you know.
Agent : Ok, before that, may know your login ID?
Just : TIANRE25
Agent : ok, one moment please
Just : ya..ya..this is my previous report no MR-4879526..this is so unprofessional. Can you get the problem fixed or not?
Agent : Ok. May I know your name first?
Just : Ms. Tan...please la do something to settle this problem
Agent : Ok, Ms. Tan. Hold on ya..we'll try to figure it out.

Question: According to the conversation above, what type of feeling did the caller portrays?

Answer : A. Happy
 B. Frustrated
 C. Angry

Call Set B – Typing Test

Agent : Hello, may I speak to Ms. Lisa?
Just : Yes, speaking.
Agent : I'm Dina, calling from MyNet. It is regarding your report previously. We've have identified the problem and we'll be sending a technician to your house to fix the modem. Can you give me your address and your mobile phone number?
Just : Ok sure. My address is No. 23, Butterworth Street 3, 14567, KL.
Agent : One moment please....your mobile number?
Just : 010-4589234
Agent : Ok, I'll get the technician to contact you when he is on his way to your house.
Just : Ok, sure.
Agent : Is there anything else?
Just : Nope, thank you.

Question: According to the conversation above, what is the **address** and the **phone number** of the caller?

2. Sample of coding

2.1 Coding for main page

```
<html>
<head>
<title>Interactive Pre-Interview Screening System</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<style type="text/css">
.style1 {
    background-image: url('images/index_03.gif');
}
a:link {
    text-decoration: none;
}
a:visited {
    text-decoration: none;
}
a:hover {
    text-decoration: none;
}
a:active {
    text-decoration: none;
}
</style>
</head>
<body bgcolor="#515E67" topmargin="0" marginwidth="0" marginheight="0" style="background-image:
url('images/bg.gif'); background-repeat: repeat-x; background-color: #000000">
<!-- ImageReady Slices (Untitled-58.psd) -->
<table id="Table_01" width="702" height="413" border="0" cellpadding="0" cellspacing="0"
align="center">
<tr>
<td colspan="3">
</td>
</tr>
<tr>
<td background="images/index_05.gif" valign="top">
</td>
<td rowspan="2" style="height: 192px; width: 611px" class="style1"
valign="top">
<table style="width: 100%; text-align: center; font-family:
'Trebuchet MS', Arial, Helvetica, sans-serif; font-size: 14px;" align="center">
<tr>
<td>

</td>
<td>
<h1 align="center"><img
alt="images/IPSS.jpg" width="469" height="382"></p>
<h1 align="center"><b>Please choose the way
to log in:</b></h1>
<table width="548" border="0"
align="right">
<tr>
<td width="275"><h2><a
href="http://fypipss.com/indexa.html">Log in as candidate</a></h2></td>
<td width="263"><h2><a
href="http://fypipss.com/admin">Log in as admin</a></h2></td>
</tr>
</table>
<p>&nbsp;</p><p style="text-align: center">
<p style="text-align: center">
<p style="text-align: center">Copyright 2011 VADS
Berhad. All Right Reserved.</td>
</tr>
</table>
</td>
<td background="images/index_06.gif" valign="top">
</td>
</tr>
<tr>
<td background="images/index_05.gif">
</td>
```

```

                <td background="images/index_06.gif">
                    </td>
                </tr>
            <tr>
                <td colspan="3">
                    </td>
                </tr>
        </table>
        <!-- End ImageReady Slices -->
    </body>
</html>

```

2.2 Coding for Set A

```

<html>
<head>
<title>Interactive Pre-Interview Screening System</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<style type="text/css">
.style1 {
    background-image: url('images/index_03.gif');
}
#Table_01 tr .style1 table tr td font form {
    text-align: center;
}
</style>
</head>
<body bgcolor="#515E67" topmargin="0" marginwidth="0" marginheight="0" style="background-image:
url('images/bg.gif'); background-repeat: repeat-x; background-color: #000000">
<!-- ImageReady Slices (Untitled-58.psd) -->
<table id="Table_01" width="702" height="413" border="0" cellpadding="0" cellspacing="0"
align="center">
    <tr>
        <td colspan="3">
            </td>
        </tr>
        <tr>
            <td background="images/index_05.gif" valign="top">
                </td>
            <td rowspan="2" style="height: 192px; width: 611px" class="style1"
valign="top">
                <table style="width: 100%" align="center">
                    <tr>
                        <td>
                            <h1 align="center">
                            </h1>
                            <h1 align="center">
<font color="#FF0000"><b>
Set A</b></font></h1>
                            <h2 align="center"><b>
Answer all question below.</b>
                            <p align="center">
<form method="post" action="contact.php">
<p><font size="3" face="verdana">Name:<br>
<input type="text" name="name" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
IC Number:<br>
<input type="text" name="ic" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
Telephone Number:<br>
<input type="text" name="no" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
Email:<br>
<input type="text" name="email" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
Question 1:</font></p>
</DIV>
                <p><font size="3" face="verdana"><embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call01.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>&nbsp;</font></p>
                <p><font size="3" face="verdana">"According to the conversation above, what is Ms.
Selly's internet problem?"</font></p>
                <p><font size="3" face="verdana">A. She cannot connect to the internet through broadband<BR>
B. She cannot connect to the internet through 1614 line<BR>
C. She cannot connect to the internet through 1614 line and broadband</font></p>
</DIV>
<p><font size="3" face="verdana"><br>

```



```

    <select size="1" name="q1" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
<br>
Question 2:</font></p></font>
<DIV>
<p><font face="verdana" size="3">
<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call102.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>
</font></p>
<p><font size="3" face="verdana">"According to the conversation above, what is the condition of
the current DSL lights?"</font></p>
<p><font size="3" face="verdana">A. Blinking<BR>
B. Stable <BR>
C. Intermittent</font></p>
</DIV>
<p><font size="3" face="verdana"><br>
<select size="1" name="q2" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
<br>
Question 3:</font></p></font>
<DIV>
<p><font face="verdana" size="3">
<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call103.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>
</font></p>
<p><font size="3" face="verdana">"According to the conversation above, what are the numbers
linked and not linked to the internet?"</font></p>
<p><font size="3" face="verdana">A. 2161 3902 & amp; 2161 3915 <BR>
B. 3161 3902 & amp; 2161 3915<BR>
C. 2161 3915 & amp; 2161 3902</font></p>
</DIV>
<p><font size="3" face="verdana"><br>
<select size="1" name="q3" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
<br>
Question 4:</font></p></font>
<DIV>
<p><font face="verdana" size="3">
<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call104.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>
</font></p>
<p><font size="3" face="verdana">"According to the conversation above, what type of problem is
Ms.Daisy facing? What type of connection is she using? What type of router is used?"</font></p>
<p><font size="3" face="verdana">A. Slow connection, automatic, wireless<BR>
B. Connection failure, manual, wired<BR>
C. Connection failure, automatic, wireless</font></p>
</DIV>
<p><font size="3" face="verdana"><br>
<select size="1" name="q4" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
<br>
Question 5:</font></p></font>
<DIV>
<p><font face="verdana" size="3">
<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call105.mp3"

```

src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27" quality="best"></embed>

</p>

<p>"According to the conversation above, what is the actual problem of the caller?"</p>

<p>A. She cannot access to the Mywebmail due to password mismatch

B. She cannot browse the Internet after resetting the password

C. She cannot browse the Internet and access the Mywebmail</p>

</DIV>

<select size="1" name="q5" style="border: 1px solid #cccccc; background-color: #ffffff; size="26">

</p>

<option>A</option>

<option>B</option>
<option>C</option>
</select>
<p>

Question 6:</p>

</DIV>

<p>

<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call106.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27" quality="best"></embed>
</p>

<p>"According to the conversation above, how the agent is going to help Ms. Penny?"</p>

<p>A. Ms. Penny needs to configure first by herself

B. She had reset the configuration and need Ms. Penny's help to test the speed

C. She is going to Ms. Penny's house to fix the problem</p>

</DIV>

<p>

<select size="1" name="q6" style="border: 1px solid #cccccc; background-color: #ffffff; size="26">

</p>

<option>A</option>

<option>B</option>
<option>C</option>
</select>
<p>

Question 7:</p>

</DIV>

<p>

<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call107.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27" quality="best"></embed>
</p>

<p>"According to the conversation above, what is the correct flow of the Internet connection windows?"</p>

<p>A. Control Panel > Connection Setup > Internet Option > New Connection Wizard > Connect to Internet > Setup New Connection > Connect using Broadband > Insert Username and Password

B. Control Panel > Internet Option > Connection Setup > New Connection Wizard > Connect to Internet > Connect using Broadband > Setup New Connection > Insert Username and Password

C. Control Panel > Internet Option > Connection Setup > New Connection Wizard > Connect to Internet > Setup New Connection > Connect using Broadband > Insert Username and Password</p>

</DIV>

<p>

<select size="1" name="q7" style="border: 1px solid #cccccc; background-color: #ffffff; size="26">

</p>
</p>

<option>A</option>

<option>B</option>
<option>C</option>
</select>
<p>

Question 8:</p>

</DIV>

<p>

<embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call108.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27" quality="best"></embed>
</p>

<p>"According to the conversation above, what is the agent giving a new phone number to the caller?"</p>

<p>A. Because the caller called the wrong department

B. Because the phone line is engaged


```

    C. Because the phone number is invalid </font></p>
</DIV>
<p><font size="3" face="verdana"><br>
  <select size="1" name="q8" style="border: 1px solid #cccccc; background-color: #ffffff;
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
  <br>
  Question 9:</font></p></font>
<DIV>
  <p><font face="verdana" size="3">
    <embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call109.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>
  </font></p>
  <p><font size="3" face="verdana">"According to the conversation above, what is the solution
given by the agent to the caller?"</font></p>
  <p><font size="3" face="verdana">A. The caller needs to call another department <BR>
    B. The caller needs to call back and make a report<BR>
    C. The caller needs to clarify the matter with the phone vendor first</font></p>
</DIV>
<p><font size="3" face="verdana"><br>
  <select size="1" name="q9" style="border: 1px solid #cccccc; background-color: #ffffff;
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select>
</font><font face="verdana"><p><font size="3"><br>
  <br>
  Question 10:</font></p></font>
<DIV>
  <p><font face="verdana" size="3">
    <embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call110.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>
  </font></p>
  <p><font size="3" face="verdana">"According to the conversation above, what type of feeling did
the caller portrays?"</font></p>
  <p><font size="3" face="verdana">A. Happy<BR>
    B. Frustrated<BR>
    C. Angry</font></p>
</DIV>
<p><font size="3" face="verdana"><br>
  <select size="1" name="q10" style="border: 1px solid #cccccc; background-color: #ffffff;
size="26">
</font></p>
<font size="3" face="verdana"><option>A</option>
<option>B</option>
<option>C</option>
</select><br><br>
<input type="submit" value="Confirm and send the answer" style="border: 1px background-color:
#ffffff;">
</p>
</font></form>

&nbsp;</p>
<p style="text-align: center;">Copyright 2011 VADS Berhad. All Right Reserved.</td>
  </tr>
  <td background="images/index_06.gif" valign="top">
    </td>
  </tr>
  <td background="images/index_05.gif">
    </td>
  <td background="images/index_06.gif">
    </td>
  <td colspan="3">
    </td>
</tr>
</table>

```

```

<!-- End ImageReady Slices -->
</body>
</html>

```

2.3 Coding for Set B

```

<html>
<head>
<title>Interactive Pre-Interview Screening System</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<style type="text/css">
.style1 {
background-image: url('images/index_03.gif');
}
a:link {
text-decoration: none;
}
a:visited {
text-decoration: none;
}
a:hover {
text-decoration: none;
}
a:active {
text-decoration: none;
}
</style>
</head>
<body bgcolor="#515E67" topmargin="0" marginwidth="0" marginheight="0" style="background-image:
url('images/bg.gif'); background-repeat: repeat-x; background-color: #000000">
<!-- ImageReady Slices (Untitled-58.psd) -->
<table id="Table_01" width="702" height="413" border="0" cellpadding="0" cellspacing="0"
align="center">
<tr>
<td colspan="3">
</td>
</tr>
<tr>
<td background="images/index_05.gif" valign="top">
</td>
<td rowspan="2" style="height: 192px; width: 611px" class="style1"
valign="top">
<table style="width: 100%" align="center">
<tr>
<td>

<h1 align="center"><img
alt="">
<h1 align="center">
<font color="#FF0000"><b>
Set B</b></font></h1>
<h3 align="center"><b>
listen to the audio below and input your
answer in the text box.</b></h3>
<p align="center">&nbsp;
<form method="post" action="contact.php">
<p><font size="3" face="verdana">Name:<br>
<input type="text" name="name" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
IC Number:<br>
<input type="text" name="ic" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
Telephone Number:<br>
<input type="text" name="no" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value=""><br><br>
Email:<br>
<input type="text" name="email" style="border: 1px solid #cccccc; background-color: #ffffff;"
size="46" value="">
</font></p>
<p><DIV>
<p><font size="3" face="verdana"><embed type="application/x-shockwave-flash"
flashvars="audioUrl=http://fypipss.com/mp3/Call111.mp3"
src="http://www.google.com/reader/ui/3523697345-audio-player.swf" width="400" height="27"
quality="best"></embed>&nbsp;</font></p>
<p><font size="3" face="verdana">"According to the conversation above, what is the
<b>address</b> and the <b>phone number</b> of the caller?"</font></p>
</div><font size="3" face="verdana"><br>
<br>
Answer:<br>

```

```

<textarea name="answer" cols="60" rows="6" style="border: 1px solid #cccccc; background-color:
#ffffff;"></textarea>
<br><br>
<input type="submit" value="Confirm and submit your answer" style="border: 1px background-
color: #ffffff;">
</p>
</p>
</font></form>

<p style="text-align: justify">
<p style="text-align: center">Copyright 2011 VADS Berhad. All Right Reserved.</td>
</tr>
</table>
</td>
<td background="images/index_06.gif" valign="top">
</td>
</tr>
<tr>
<td background="images/index_05.gif">
</td>
<td background="images/index_06.gif">
</td>
</tr>
<tr>
<td colspan="3">
</td>
</tr>
</table>
<!-- End ImageReady Slices -->
</body>
</html>

```