

**Automated Ticket Routing Helpdesk Portal**

by

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**9145**

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

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**CERTIFICATION OF APPROVAL**

**AUTOMATED TICKET ROUTING HELPDESK PORTAL**

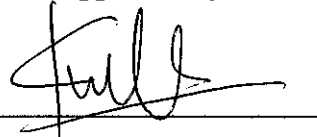
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In partial fulfillment of the requirement for the  
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Approved by,



(Mr Faizal bin Ahmad Fadzil)

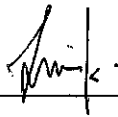
**UNIVERSITI TEKNOLOGI PETRONAS**

**TRONOH, PERAK**

**August 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.



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MUHAMMAD ZIKRI BIN ZULKIFLI

## ABSTRACT

This report was commissioned to deliver the understanding of the chosen Final Year Project title “Automated Ticket Routing Helpdesk Portal”. The report will be segregated into four chapters which are the introduction including problem statement and objectives; literature review; methodology and conclusion. Helpdesk is a very powerful tool to assist IT users. A good helpdesk system is very crucial to assist users and also improve service by the helpdesk team. At Universiti Teknologi Petronas, we already have an existing helpdesk system. However, I have identified a problem in the system; the current system still uses manual ticket routing and assignment. Automated ticket routing and assignment stop manually assigning tickets to the support personnel that you think is available and has the skill set to address the ticket. Automated ticket routing and assignment uses intelligent business logic to determine which support personnel is assigned to a new ticket using a combination of skill-set, work schedule and work load balancing criteria. In the introduction, problem statements that lead to the idea of developing the project title will be cleared up and the objectives are highlighted. Towards the development of this project, information gathering from the experts will be conducted. A comprehensive research also will determine the relevancy of this project. The literature reviews will explain in depth the understanding of the proposed project.

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Also, not forgotten to the UTP ITMS department and the helpdesk team in Celestica (M) Sdn Bhd who have also been assisting me throughout this whole project.

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## **CHAPTER 1**

### **PROJECT BACKGROUND**

#### **1.1 BACKGROUND OF STUDY**

This project is concerning on the automated ticket routing and assignment feature that will be found useful for UTP helpdesk system portal. The UTP helpdesk system portal will have an automated ticket routing and assignment feature to help the helpdesk team to route and assign new ticket to the support personnel automatically. Automated ticket routing and assignment is a faster way to determine which support personnel is assigned to a new ticket.

The target users of this system are the support personnel of the helpdesk team who deal with IT related problem reports and request. Automated ticket routing and assignment will help them to cut the time and help them to assign problem ticket more efficiently.

#### **1.2 PROBLEM STATEMENT**

The current UTP helpdesk portal uses manual ticket routing and assignment to distribute tasks among support personnel. There are lots of setbacks in using this method. And by converting to automated ticket routing and assignment, the IT team could actually come over the problems and upgrade their level of service.

By using this method, the IT team actually is wasting man power to do the distribution which the workforce can be use to attend a more crucial problem. Other than that, manual ticketing is also a waste of time. Once a ticket has been created, the ticket must first be manually assigned to the support personnel before it could be attend to. With automated ticketing, we could close the gap of time from the ticket creation to distribution. And also, with manual ticketing, the IT team could not distribute tasks among the support personnel efficiently. A good job distribution must took account of skill-set, work schedule and work load balancing criteria.

### **1.3 OBJECTIVES**

**Main Objective:** To create a helpdesk system that can assist the helpdesk team to distribute tasks automatically and efficiently.

**Sub Objective:**

- To have an auto ticket routing helpdesk.
- To have helpdesk with proper user notifications
- To have helpdesk that can be easily managed by the helpdesk team:
  - Ticket closing estimation
  - Job assessment
  - KPI evaluator

### **1.4 SCOPE OF STUDY**

The scope of this project focuses on case studies of the UTP helpdesk portal. Knowledge on helpdesk work tasks is important in this project thus a comprehensive interview with the support personnel will be conducted. The next scope is to study on mechanism and application of automated job distribution. Sources from internet articles and journals will be helpful enough to conduct the research. The analysis and diagnostics of a combination of skill-set, work schedule and work load balancing will be done thoroughly.

### **1.5 SIGNIFICANCE OF THE PROJECT**

The function will be able to help the IT team by assisting the support personnel to distribute tasks faster and efficiently. The function will be an additional function for the existing helpdesk portal that the IT team is currently using. The IT team will no longer need a support personnel to assist the distribution process of their daily tasks. The IT team can also speed up their service. The automated ticket routing and assignment for the helpdesk portal will contribute to efficiency and productivity in commissioning the daily support tasks.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 HELPDESK PORTAL**

A helpdesk is an information and assistance resource that troubleshoots problems with computers or similar products. Corporations often provide help desk support to their customers via a toll-free number, website and/or e-mail. There are also in-house help desks geared toward providing the same kind of help for employees only. Some schools offer classes in which they perform similar tasks as a help desk. In the Information Technology Infrastructure Library, within companies adhering to ISO/IEC 20000 or seeking to implement IT Service Management best practice, a help desk may offer a wider range of user centric services and be part of a larger Service Desk.

A typical helpdesk has several functions. It provides the users a single point of contact, to receive help on various computer issues. The help desk typically manages its requests via help desk software, such as an issue tracking system that allows them to track user requests with a unique number. This can also be called a "Local Bug Tracker" or LBT. There are many software applications to support the help desk function.

Large helpdesks have different levels to handle different types of questions. The first-level help desk is prepared to answer the most commonly asked questions, or provide resolutions that often belong in an FAQ or knowledge base. Typically, an issue tracking system has been implemented that allows a logging process to take place at the onset of a call. If the issue isn't resolved at the first-level, the issue is escalated to a second, higher, level that has the necessary resources to handle more difficult calls. Organizations may have a third, higher level, line of support which often deals with software specific needs, such as updates and bug-fixes that affect the client directly.

Larger helpdesks have a person or team responsible for managing the issues and are commonly called queue managers or queue supervisors. The queue manager is responsible for the issue queues, which can be setup in various ways depending on the help desk size or structure. Typically, larger help desks have several teams that are experienced in working on different issues. The queue manager will assign an issue to one of the specialized teams based on the type of issue. Some help desks may have phone systems with ACD splits that ensure that calls about specific topics are put through to analysts with experience or knowledge on that topic.

Many help desks are also strictly rostered. Time is set aside for analysts to perform tasks such as following up problems, returning phone calls, and answering questions via e-mail. The roster system ensures that all analysts get time to follow up on calls, and also ensures that analysts are always available to take incoming phone calls.

### **2.1.1 Desktop support team**

The desktop support is responsible for the desktops, laptops, and peripherals, such as PDAs. The help desk will assign the desktop team the second level deskside issues that the first level was not able to solve. They set up and configure computers for new users and are typically responsible for any physical work relating to the computers such as repairing software or hardware issues and moving workstations to another location.

### **2.1.2 Network team**

The network team is responsible for the network software, hardware and infrastructure such as servers, switches, backup systems and firewalls. They are responsible for the network services such as email, file, and security. The help desk will assign the network team issues that are in their field of responsibility.

### **2.1.3 Server team**

The server team is responsible for most, if not all, of the servers within the organization. This includes, but is not limited to, Network Authentication, Network Shares, Network Resources, Email accounts, and all aspects of server software. It also includes more advanced services such as Databases, Storage or Content Management Systems, Specialized proprietary services, and other industry-specific server-based applications.

### **2.1.4 Other teams**

Some companies have a telecom team that is responsible for the phone infrastructure such as PBX, voicemail, telephone sets, modems and fax machines. They are responsible for configuring and moving telephone numbers, voicemail setup and configuration and are assigned these types of issues from the help desk.

Companies with custom application software may also have an applications team, who are responsible for development of any in-house software. The Applications team may be assigned problems such as software bugs from the help desk. Requests for new features or capabilities to in-house software that come through the help desk are also assigned to applications groups.

Not all of the help desk staff and supporting IT staff are in the same location. With remote access applications, technicians are able to solve many help desk issues from another location or their home office. There is a need for on-site support to physically work on some help desk issues; however, help desks are able to be more flexible with their remote support.

## **2.2 AUTOMATED TICKET ROUTING AND ASSIGNMENT**

Ticket routing is a critical issue in IT problem management. When a problem is reported to the IT service provider, a ticket is created to describe the problem symptoms and to serve as a token in the problem management process. Due to the increasing complexity of the reported IT problem, many tickets need to be routed among various expert groups, to search for the one with the right expertise to resolve

it. Obviously, the goal of ticket routing is to quickly identify the resolver, so that the caused disruptions can be minimized.

Today, ticket routing is usually driven by human decisions. It is common that tickets can sometimes be mistakenly routed, which leads to unnecessary ticket routing steps. If this happens, not only resources are wasted, but also it would take longer time to close a ticket, possibly cause customer dissatisfaction[1]. The goal of this study is to develop an approach to systematically reducing the number of ticket routing steps by mining historical ticket data.

Automated ticket routing and assignment stop manually assigning help requests to the customer support personnel that you think is available and has the skills to address the help request ticket[2]. It uses intelligent business logic to determine which technical support operator is assigned to a new service request ticket. Using a combination of location, department, skill-set, work schedule and work load balancing[3].

Group various locations and departments to allow the tracking of requests from separate entities within your organization to be centrally managed. Jobs can also be assigned to a pool of operators, so your technicians can select jobs as they become available.

### **2.2.1 Ticket Category and Technician Skill-Set**

Analyze a new help request ticket Category, and all sub-categories, selected by the ticket submitter and cross references this category with the skill sets defined for individual support staff agents or group of agents to determine where to route this request based on type of request submitted to the helpdesk.

### **2.2.2 Locations, Departments, and Customers**

As a customer submits a ticket to the service desk, helpdesk identifies the submitter's defined location, department, and customer organization. With

these information, the software knows which customer support personnel work with the matching criteria and routes accordingly.

### **2.2.3 Work Load Balancing**

If Helpdesk is configured to assign a request ticket to an individual support agent within a specific group of personnel, our help desk software will execute work load balancing and automatically assign the request ticket to the operator with the least amount of open tickets[4].

All of the above ticket routing and assignment criteria will execute in tandem with one another to provide extremely robust automated service request assignment work flow based on your organizations business requirements.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 RESEARCH**

The purpose of doing research is to analyze the knowledge of job distribution management technology. Study for helpdesk work tasks is also important to know the history and problems that they face daily. Internet research for existing expert system used in helpdesk support portal especially for ticket routing and assignment will be done. Information and knowledge about helpdesk work tasks must be gathered before the system is build.

#### **3.2 INTERVIEW**

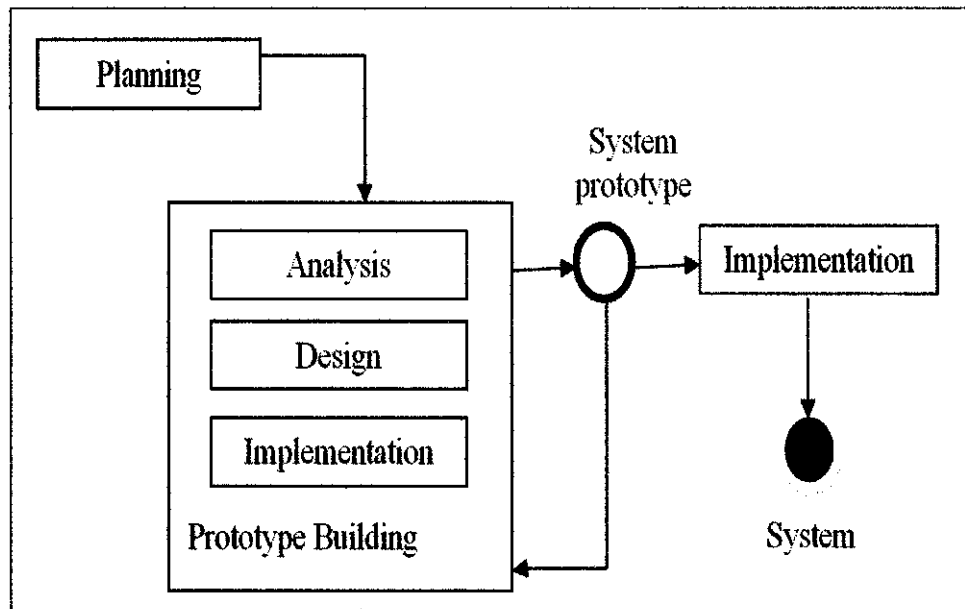
Interviews with the support personnel from the helpdesk team have been conducted to know about any system used to assist them in ticket routing and assignment at the workplace. They also must be able to explain the functions that the system features. Mr Khairul from the UTP helpdesk department has been chosen as the subject of interview. The existing helpdesk portal will be the target for a compare and contrast interview of the system. The questionnaire for the interview is shown in *Appendix 1*. The results of the interview will be further concluded in the next Chapter 4.

#### **3.3 SYSTEM DEVELOPMENT METHODOLOGY**

Prototyping-based methodology, which is a type of Rapid Application Development (RAD) category, has been chosen to develop the automated ticket routing and assignment for UTP helpdesk portal. This methodology performs the analysis, design and implementation phases at the same time. The first prototype built is usually the initial part of the system that user will use. The second prototype offers more added features after the knowledge engineer getting complaints or suggestion of the first prototype. The process will loop again and again until the developer satisfied with



the outcome. The advantage of applying Prototyping-based methodology is that it rapidly refines real requirements of the system. It tries to get a part of a system developed quickly. This suggested methodology is easy to roll back to previous phase if the user need to amend something as it is a continuously looping progress of life cycle.



**Figure 3.1 Prototyping-Based Methodology**

### **3.3.1 Planning**

The planning phase is the initial point of the whole project. Firstly, I have to come out with a to-do list to develop the system. At planning phase, a feasibility analysis was applied. The three key aspects of feasibility analysis are:

- **Technical feasibility**

The automated ticket routing and assignment for UTP helpdesk portal will be developed using the technical skill and knowledge on hand.

- **Economic feasibility**

This aspect will prove that the automated ticket routing and assignment for UTP helpdesk portal will contribute to the helpdesk team productivity of works.

- **Organization feasibility**

The suggested automated ticket routing and assignment for UTP helpdesk portal will contribute to a more efficient and fair daily tasks distribution.

### **3.3.2 Analysis**

To build the system, understanding the automated ticket routing and assignment is very essential so that I know how it actually works. The analysis strategy is to do research of existing intelligent system in helpdesk daily tasks. It will be accomplished by searching and reading for potential articles found in the Internet.

The requirements gathering will lead to the development of a concept for a new system. Interviews will be conducted with people from the UTP helpdesk team. The selected interviewee is Mr Khairul. The purpose of this interview is to know the existing system they have implemented in the business and what are the advantages and drawbacks of the current system features.

Other interview with people from the Celestica helpdesk team, my former internship placement will be carried out. The purpose of the interview is to examine the difference between UTP and Celestica helpdesk portal current system of managing customers' problem reports. The project is currently finished with analysis phase and now moving to the design phase.

### **3.3.3 Design**

The design phase decides how the system will operate. In the architecture design for the system, use case diagram and pseudo code of the system will be explained in Chapter 4. The modeling of current system (as-is) and the new system (to-be) will be drawn out for simpler understanding. The database will be developed in this phase. The interface design will specifies how the user will move through the system. I will

show the sample of user interface that will be created. The programming part will also take place in this phase in which I will develop the coding using Java language.

### 3.3.4 Implementation

In the final phase, the automated ticket routing and assignment system developed will be tested. The system should function correctly based on the requirements stated in the analysis phase. If the system is not functioning properly, all the information and the requirements in the analysis phase need to be checked and the maintenance or modification need to be performed in the design phase. The correction will be performed repeatedly until all the functions of the system functioning properly and meet the system requirements.

## 3.4 TOOLS AND TECHNOLOGIES

### 3.4.1 Software Requirement

Software	Minimum Requirement
Operating System	Windows XP Professional Service Pack 3
Supporting Software	Micromedia Dreamweaver8 XAMPP for Windows Protégé – myCBR plugin Adobe Photoshop CS3 Internet Explorer 8.0 Beta Google Chrome Microsoft Office Visio 2007

**Table 3.1 Minimum Software Requirement for Developing automated ticket routing and assignment for UTP helpdesk portal**

### 3.4.2 Hardware Requirement

Hardware	Details
Central Processor Unit	Intel ® Core 2 Duo™ 64 Mobile Technology MK36 (2.0 GHz, 512KB L2 Cache)
Hard Disk	80GB HDD
Random Access Memory (RAM)	1.43GB

**Table 3.2 Hardware Requirement for Developing automated ticket routing and assignment for UTP helpdesk portal**

## **CHAPTER 4**

### **RESULT AND DISCUSSION**

#### **4.1 INTERVIEW**

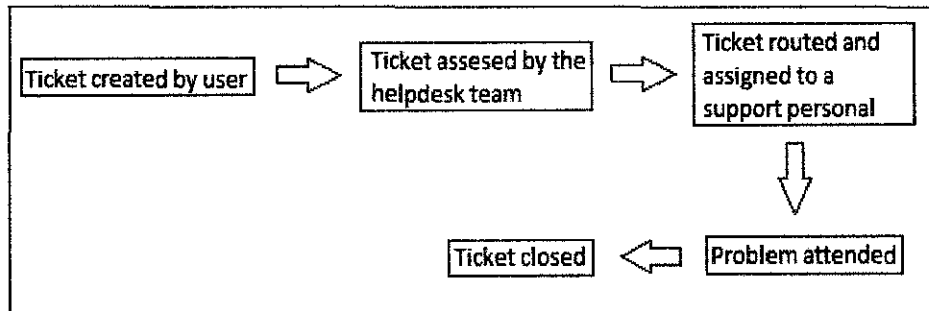
##### **4.1.1 Interview with UTP helpdesk team**

###### **Universiti Teknologi Petronas, Bandar Seri Iskandar**

I interviewed Mr Khairul, a support personnel of the UTP helpdesk team. According to him, the current helpdesk portal system they are currently using has a lot of setbacks. One of it is; not user friendly. Mr. Khairul identified that the existing helpdesk system is not very user friendly, it would be a problem for any new user (students and lecturers) to log in their report. Another problem is lack of interaction between system and users. Using the current helpdesk system, information such as whom the task was signed to and expectation date of completion are not available to users. And the last one is the current helpdesk system uses manual ticket routing and assignment to distribute tasks among support personnel. There are lots of setbacks in using this method.

When asked to elaborate more about the manual ticket routing and assignment, Mr. Khairul verified that by using this method, the IT team actually is wasting man power to do the distribution which the workforce can be use to attend a more crucial problem. Other than that, manual ticketing is also a waste of time. Once a ticket has been created, the ticket must first be manually assigned to the support personnel before it could be attend to. With automated ticketing, we could close the gap of time from the ticket creation to distribution. And also, with manual ticketing, the IT team could not distribute tasks among the support personnel efficiently. A good job distribution must took account of skill-set, work schedule and work load balancing criteria. And by converting to automated ticket routing and assignment, the IT team could actually come over the problems and upgrade their level of service.

Mr. Khairul also gave a case scenario where at one time, all the support personnel were very busy completing tasks at hand that nobody got the time to check any new tickets created by users. And there some very important ticket that need to be cleared immediately that they have missed and the tickets were only attended on the next day when there are some available support personnel got to the tickets. This scenario have indirectly gave a bad reputation to the helpdesk team.



**Figure 4.1 Illustrations of UTP Helpdesk Team Ticket Processes**

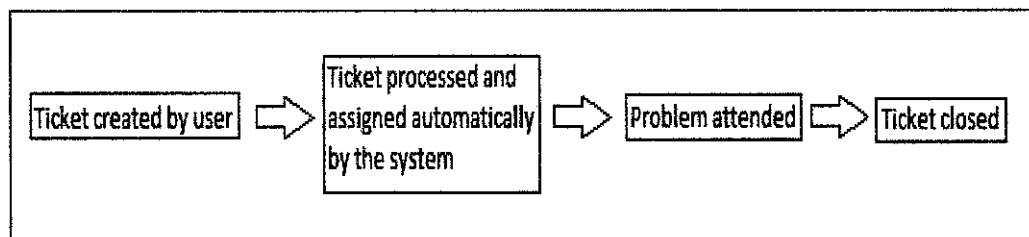
#### **4.1.2 Interview with Celestica helpdesk team**

I managed to get in contact with my former site supervisor during my internship, Mr. Suhaimi Basir, manager of the helpdesk team in Celestica (M) Sdn Bhd (CMY), Kulim Hi-Tech. He is in charge of the IT infrastructure and helpdesk team there. According to him, CMY helpdesk system formerly used manual ticket routing and assignment. However, since a lot of troubles arise from the manual ticket routing and assignment, the in-house developer of their helpdesk system has replace the function with automated ticket routing and assignment for the helpdesk system.

When asked to elaborate more on the problems that they faced from the manual ticket routing and assignment, I identified that they were also having the same problems as the helpdesk team in UTP. Mr. Suhaimi Basir also verified that the automated ticket routing and assignment have helped to speed up the helpdesk team process in attending a problem ticket created by users.

Mr. Suhaimi Basir also told that automated ticket routing and assignment have helped them a lot to organize their daily tasks and maintain their level of service as they are serving more than one thousand IT users in the site and receive more than fifty ticket daily. With a small number of support personnel team, automated ticket routing and assignment has helped them to maximize their workforce to attend problem tickets instead of organizing and routing the tickets.

When asked how the automated ticket routing and assignment has helped them to improve their service, Mr. Suhaimi Basir told that formerly one of his support personnel need to be in charge of the ticket routing and assignment. There he have lost one headcount to attend other problem tickets. It have been a waste of headcount to use a capable IT technician just to organize the tickets he said.

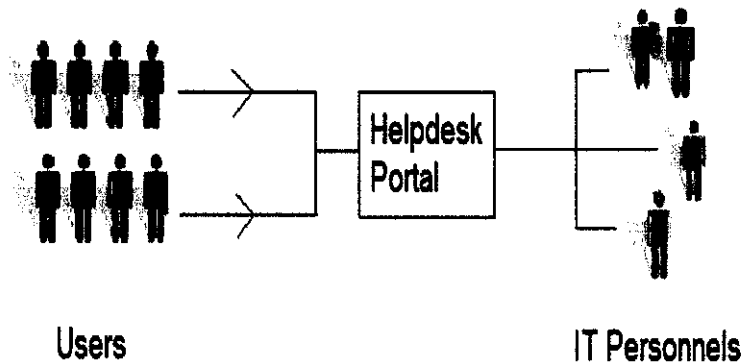


**Figure 4.2 Illustrations of CMY Helpdesk Team Ticket Processes**

## **4.2 SYSTEM ARCHITECTURE**

Managing tickets from the help desk requires a system to route, organize and prioritize user incidents for the IT team, while providing feedback and communication with the user as the remediation process progresses towards resolution. For the IT engineer, ticket management relies on configurable policies to set up multiple support queues based on location of the IT engineer, skill set and workload to meet focused and acceptable levels of administrative support. Ticket assignments can be automated to set up categories of problems, and automated for transition to other queues providing hierarchical relationships to care for work orders with dependent relationships of related tasks. For the user, proper ticket management should allow access to improve first-time call resolution, allow for ongoing user input, and provide notifications if the incident requires additional work or if the

incident is not properly addressed. It should also provide warnings of problems and possible workarounds for known issues.



**Figure 4.3 Architecture of Automated Ticket Routing**

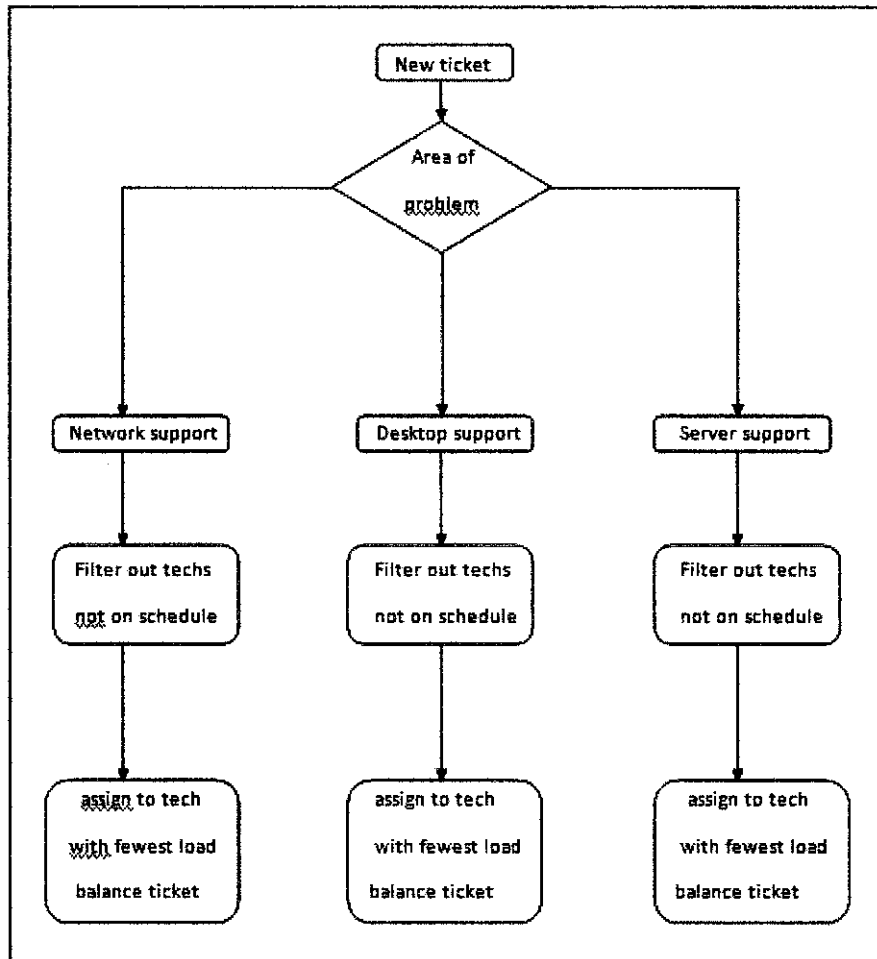
#### **4.2.1 Diagrams**

To represent how the automated ticket routing and assignment works, data flow diagram and use case diagram are used to explain the system. The data flow diagram shows the start to end process of the suggested automated ticket routing and assignment; meanwhile the use case diagram illustrates the processes that the system will process that will benefit the users in some way.

##### **4.2.1.1 Data Flow Diagram**

The suggested data flow is shown in *Figure 4.4*. When a ticket is created, the ticket will be classified under three criteria; desktop support, network support and server support. Then the system will filter out all the techs which are not on working schedule. Then, the system will choose over a tech with the fewest work load balance and assign the new ticket to the specific tech.

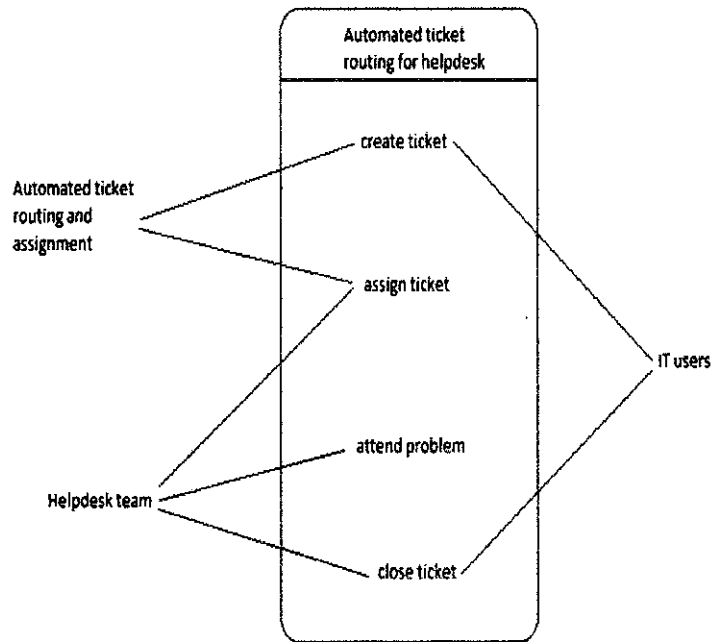




**Figure 4.4 Data Flow Diagram for Automated Ticket Routing and Assignment**

#### 4.2.1.2 Use Case Diagram

The use case diagram in *Figure 4.5* demonstrates each process that automated ticket routing and assignment for UTP helpdesk portal will do. The user will create the problem ticket. Then the system will automatically process the ticket and assign the ticket to the most suitable support personnel. After being assigned, the support personnel will attend the problem ticket and close the ticket.



**Figure 4.5 Use Case Diagram showing overall system workflow**

### **4.3 PROPOSED SYSTEM**

In this sub-chapter, the author will explain on how the system will look like. After that the analysis and design for the system will be covered on the next sub-chapter. The proposed system is to have the Client/Server System which all the ticket will be sent to the server for the server to respond to the data received.

#### **4.3.1 Client/Server**

This type of system has been chosen as the best way to handle this project. All the data will be retrieved via the server. This will also maintain the confidentiality and privacy of the data on the tickets created.

#### **4.3.2 First Phase**

The first phase of the system will be the implementation of the software in the author's hardware. Two personal computers are needed to complete this project. Those computers include the server, the user and also the editor.

The server which also will be the editor computer will be installed with XAMPP, notepad++ and also Macromedia Dreamweaver. The user computer doesn't need to be installed anything because the user computer will connect using only web browser to the server hosting the web portal.

#### **4.3.3 Second Phase**

The second phase in creating this system will be preparing the tickets form. The computer involves in this phase will be the server and also the editor. The editor will create and edit the form from the editor's computer. This phase will be only creating the form itself. After the form has been created, the author will proceed to the next phase.

#### **4.3.4 Third Phase**

The third phase will be implementing the workflow into the form and also update the interface of the form. This will require the use of notepad++ and Macromedia Dreamweaver. First, the author will develop the workflow for the web portal. Using this workflow, the author will create a step which the step will started with some indicator such as created by time or date and it will prompt the workflow.

After the implementation of the workflow is done, the author will change the look and also the visibility of the text field. This is required as to maintain the data will remain save and unchanged by other people. The interface will be created to be more user-friendly and highlight some of the key element for the form as to improve the usability. After the third phase is finish, the project proceeds to the fourth phase.

#### **4.3.5 Fourth Phase**

The fourth phase will be the last phase of creating the form which the form will be integrated with the Automated Ticket Routing function. To succeed this integrator, the author has to develop a database for the web portal and manipulate several attributes in the database.

As the Automated Ticket Routing function will analyze and then distribute the tickets created to the helpdesk team, the indicator will capture the ticket serial and ticket type to distribute the tickets accordingly to the personnel with the expertise to perform or attend the ticket. So by explaining the proposed system, the author hopes that it will explain on how the system will work and build

#### **4.4 ANALYSIS AND DESIGN**

In this section the author will describe how the network architecture of the system being proposed. The description will include some sketch to help the explanation.

The Client/Server Architecture means that all the tickets created will travel from the client and responded by the server. Then, the server will notify the client and route the ticket to the support personnel. The server will also prompt an email to the approver and the requestor as to respond for the request.

Each time a ticket is created, the server will capture the ticket serial and ticket type. Then, the ticket will be forwarded to a support personnel accordingly. After the support personnel has respond to the ticket, the server will prompt an email to notify the ticket creator.

The pseudo code below explains how the system will operate:

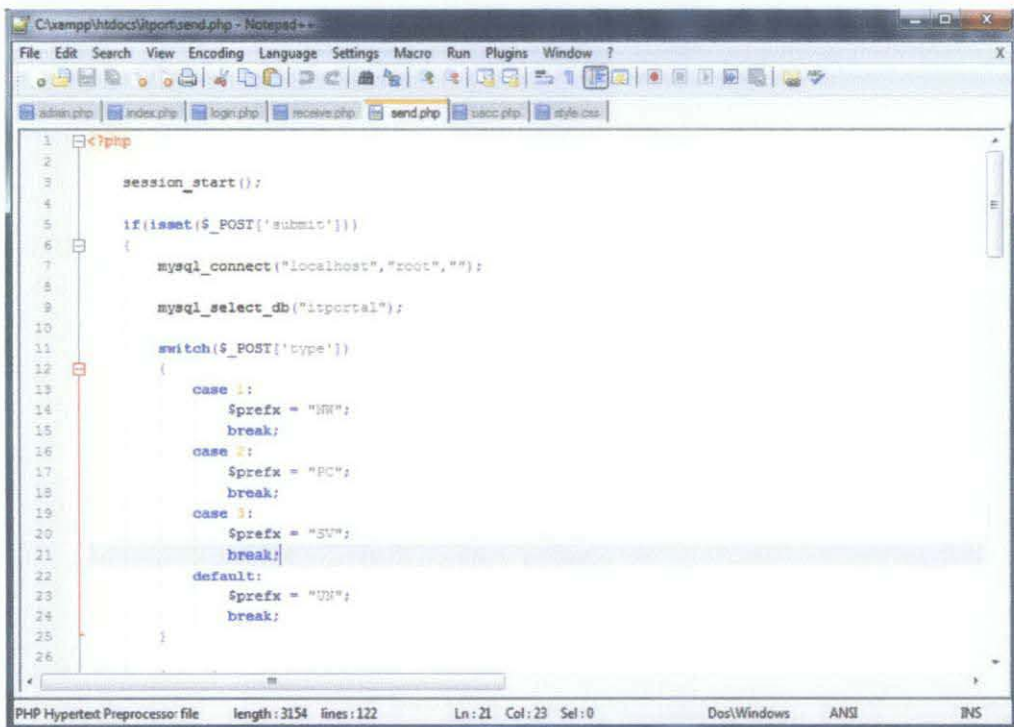
- 1.0.0 Start (user create a ticket)
- 2.0.0 Server Respond (server notify both ticket creator and support personnel assigned to the ticket by email)
- 3.0.0 Support Personnel (will receive an email from the server)
  - 3.1.0 Support Personnel Close Ticket
    - 3.1.1 Server Respond
    - 3.1.2 Ticket Creator (will receive an email notifying ticket is closed)

## 4.5 PROTOTYPE AND SCREENSHOTS

A prototype for the system was developed after the design was finalized. This prototype was developed for testing before developing the actual system. The prototype will show if the design has any flaws. The prototype will be tested and analyzed to find any improvement that can be put into the design for the implementation of the actual system later on.

### 4.5.1 Prototype Setup

For the prototype setup, several software needed to be installed such as Notepad++ and XAMPP. This software will be use in order to develop and setup the prototype. Below are several screenshots of the software used in developing and setting up the prototype:



```
1 <?php
2
3 session_start();
4
5 if(isset($_POST['submit']))
6 {
7     mysql_connect("localhost","root","");
8
9     mysql_select_db("itportal");
10
11     switch($_POST['type'])
12     {
13     case 1:
14         $prefix = "NR";
15         break;
16     case 2:
17         $prefix = "PC";
18         break;
19     case 3:
20         $prefix = "SV";
21         break;
22     default:
23         $prefix = "UD";
24         break;
25     }
26 }
```

PHP Hypertext Preprocessor: file length: 3154 lines: 122 Ln: 21 Col: 23 Sel: 0 Dos: Windows ANSI INS

Figure 4.6 Screenshot of Notepad++

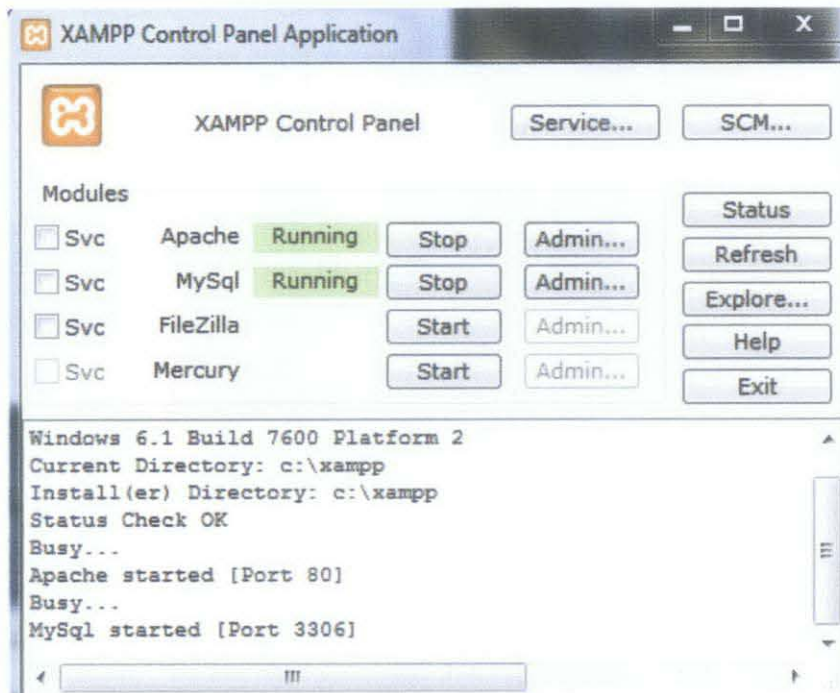


Figure 4.7 Screenshot of XAMPP Control Panel

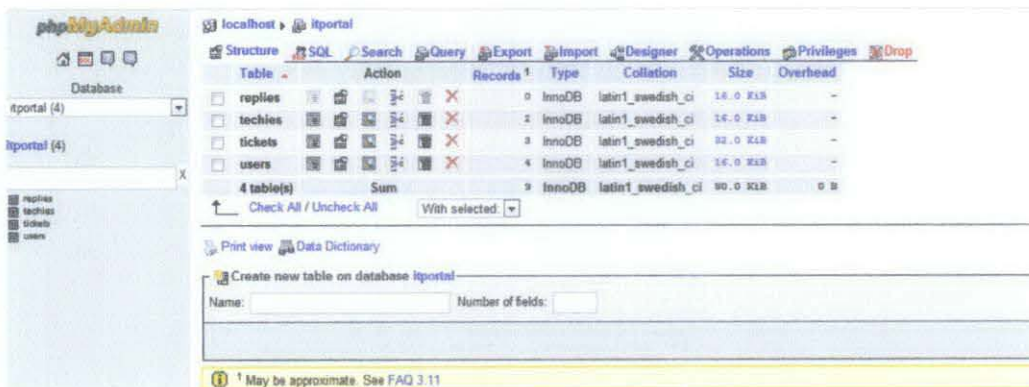
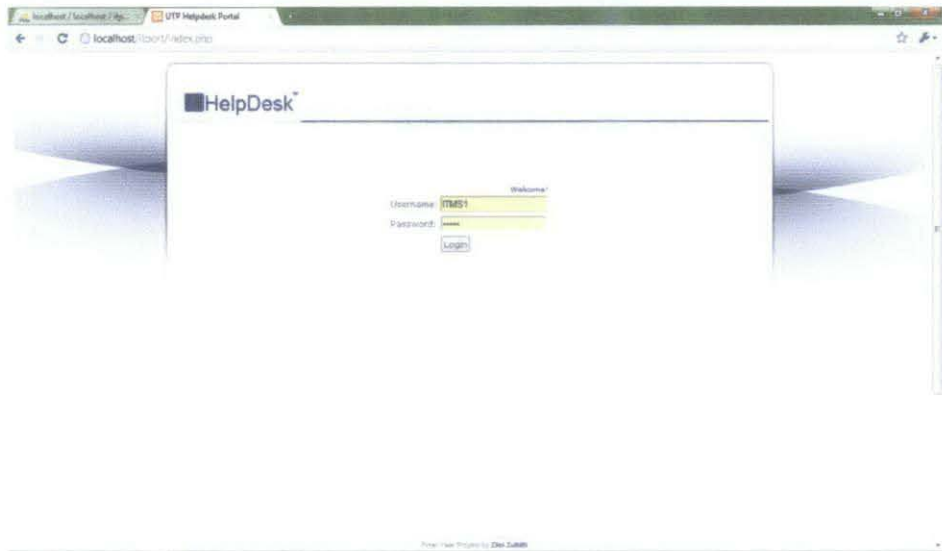


Figure 4.8 Screenshot of phpMyAdmin portal

#### 4.5.2 Login Page

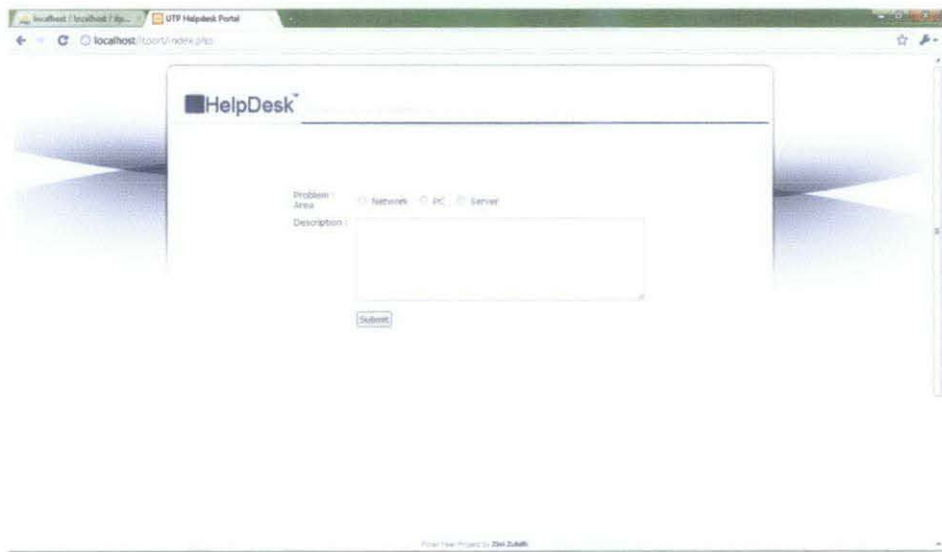
User needs to insert their registered ID and password to allow ultimate access to the system. This page is to ensure only authorized personnel uses the system. Then, according to their ID, users will be brought to either the support personnel's page or the customer's page.



**Figure 4.9 Screenshot of Login page**

### 4.5.3 Customers page

Here, users can log their report and select their problem under which category.



**Figure 4.10 Screenshot of Customers page**

#### 4.5.4 Support personnel page

Here, the support personnel can check all the tasks assigned to them and close tickets after the problem have been attended.



Figure 4.11 Screenshot of Support Personnel page

#### 4.5.5 System Admin Page

System administrator can view all tickets created by users and also manage all users accounts for this portal.



Figure 4.1.2 Screenshot of System Admin page





**Figure 4.13** Screenshot of User Management page

## **CHAPTER 5**

### **CONCLUSION**

This report is giving detailed information about the automated ticket routing and assignment understandings and how the system will contribute towards the service level of UTP helpdesk team. This system will be adapted into the current helpdesk system that UTP is currently using to add value to the helpdesk team. By comparing and contrast manual ticket routing and assignment with automated ticket routing and assignment, the author will have stronger reasons why automated ticket routing and assignment is chosen to for the project. Automated ticket routing and assignment is simply an effective tool to develop a helpdesk portal. The advantages of using the system are it provides natural means to accelerate the helpdesk service.

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