I-Track Stationery Monitory System

By

MohamadAdib bin HarithFadzilah

Dissertation submitted in partial fulfillment of

the requirements for the

Bachelor of Technology (Hons)

(Business Information System)

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UniversitiTeknologi PETRONAS

Bandar Seri Iskandar,

31750 Tronoh

Perak DarulRidzuan

CERTIFICATION OF APPROVAL

I-Track Stationery Monitory System

in

Universiti Teknologi PETRONAS

by

Mohamad Adib bin Harith Fadzilah

A project dissertation submitted to the

Business Information System Programme

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BACHELOR OF TECHNOLOGY (Hons)

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Approved by,

…….

(Amy Foong Oi Mean)

UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

June 2012

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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MOHAMAD ADIB BIN HARITH FADZILAH

ABSTRACT

The main objective of this research is to find a new method to replace the stationery management system in UniversitiTeknologi PETRONAS (UTP) for Human Resourse Management UTP by using a web-based system which can assist in enhancing the processes activities. The problem with current conduct is that, there is no computerized system that can help in tracking and managing the stationery movement, which cost in time and effort due to physical counting and leads to high human error and operational tasks inefficiency.

This research encompasses the Stationery Management which utilizes the web application I-Track Stationery Management System. The project looks at the related works by researchers from variety of scope of study, which includes inventory management concepts. It developed using ASP.Net language and having SQL as the database. This paper also include on the system flow, mechanism and tools used to develop and use the web application.

ACKNOWLEDGEMENTS

Alhamdulillah, praise be to Allah S.W.T, the most gracious and most merciful for giving me the strength and wisdom in completing this project. I would like to reach out my greatest appreciation to my supervisor, Ms. Amy Foong Oi Meanfor his understanding and professional ways in guiding, commenting and motivates me in order to complete the development of this project.

I would also like to thank Mr Aminur Rashidas the representatives of Stationery Department in Human Resource Management in UTP who has been great assistance with regards to this project requirements and specifications.

Last but not least, I would like to thank my family and friends for their supports and understandings.

Thank you.

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CHAPTER 1 : INTRODUCTION

1.1 Background of Study

Computerization of process makes the work more convenient and information technology plays a big role in business and economy. Information Technology provides ways and making the best solutions that aid complains to their operations and future investments, leading to their success. Technology innovate business processes and paving the way new heights of development improving the flow of managing. Most importantly technology in combination with the principles of business applicants, data communications, shapes the future for decades to come.

This project to be studied as a research topic based on the needs of Human Resource Management (HRMA) of UniversitiTeknologi PETRONAS (UTP) to come up with a system which can track and trace all stationery requests, status and reporting for HRMA or it staffs monitoring. The system which will be created is to ease the management in processing and monitoring the stationaries so expenses on the stationaries will be secured and on budget.

The examples of stationaries are below:

- Pen Marker
- Pen
- Paper
- Mahjong Paper
- Transparency Paper

Having too much inventory at hand can be troublesome as it ties up to the company's capital and other costs. Therefore, this research is to be conducted to monitor how stock aging and quantity checking tool can help in managing the inventories.

The system that will be created has been given a name which is I-Track means intelligent tracking system. I-Track will be based on UTP network so all the staffs can easily access it in the campus. It will be created in a database layout so that the HRMA can easily track the stationaries with ease.

1.2 Problem Statement

Problem occurs when UniversitiTeknologi PETRONAS Human Resource Management (HRM) is having problems to trace, track and monitor stationaries request, status and reporting with efficient manner. The client wants the author to come out with a system which is web-based that can track, trace, approve and monitor stationaries request, status and report .

The old system that they are using is based on paper forms. So the process of requesting stationaries takes time. Sometime it will take 3 days to get the stationaries requested. In order to reduce the time a new system has to be created which cater the time process. This problem can sometimes bother the activities of staffs which they have planned.

1.3 Objective and Scope

The goal of this project is to create a system which can help the HRMA staffs solve their problems.

The objectives are as follow:

- To research on the information needed to build the system logic
- To research on suitable principle that needs to be applied in designing suitable interface for application.
- To develop a system that can:
    - Provide stock movement monitor and quantity checking tool
    - Act as an web-based platform for requesting from the requester and to be tracked by the system
- To test on usability of the application

The project will cover the areas as follow:

- Study the feasibility of the project
- Understanding the old system or old process in managing the stationaries
- Understanding the needs of the HRMA in creating the new system
- Study other system that used database system in managing stationaries
- Develop the system addressing the real need of the clients in HRMA.
- Testing, implementing the system and compiling in documentation

CHAPTER 2 :LITERATURE REVIEW

2.1 What is Stationery Monitory System?

The stationery monitory system in this research is mostly related to inventory management system.

Inventory Management: Definitions and Concepts

Procurement process, which starts with the creation of purchase requisition, happens when inventory is low on stock and need to be re-ordered because new stock is needed. It is closely related with the inventory management process in terms of tracking the consumption quantity. Therefore, maintaining the right inventory level is crucial for business because if it is not properly managed, the inventory can be liability of the company.

According to Chary (2000,p. 137) and Mercado (2008, p. 1) inventory management deals with the continuous need to ensure how much to keep on hand, how frequent and when the inventory need to be replenished. Inventory is running capital thus; the inventory control is an important aspect of operation management.

Inman (n.d.) state that inventory management, or inventory control is a way to balance inventory needs and requirements with the need to minimize costs that resulted from obtaining and holding inventory. Referring to this context, Chisholm (2004) agrees by noting that the inventory is for efficiency's sake, public sector organizations are also focusing on inventory management inventory improvements.

The project that the author will create is mainly related to an inventory management system. Inventory management is all about knowing what is on hand, where it is in use, and how much finished product results. Inventory management is the process of efficiently overseeing the constant flow of units into and out of and existing inventory. This process usually involves controlling and monitoring of units into and out.

Referring to the HRMA, they are having a problem to monitor the stationaries efficiently. The old system/process which they are using right now is manually recorded in document papers. Tracing back the stationaries data can be hard sometimes because of misplaced and loss documents.

The process of requesting stationaries by the staffs can be in a longer period of time which this will affect the activities of the staffs that they have planned.The system created by the author should also consider an online access where all the process can be done throughout the internet. This is to ensure all process can be monitor easily by the client who is in charge of the stationery management.

2.2 Web-Based Monitoring System

There are many ways to approach this problem Karim, Saad and Haque (2011) have studied a model is presented for putting a web-based inventory system in place in five different laboratories of an Engineering Department in a large public university in Malaysia. In designing such a system, Visual Studio has been employed as a development language and ASP.Net as a backend database with CSS implemented for the interface.

The study would help the personnel in charge of the laboratories find out the capacity of the labs as well as the general information of asset availability, and replaced the current practice of extensive manual recording of the documentation.

In a university setting, a web-based system of managing inventory will help various laboratories keep an update on the status of their tools and equipment. In that study, a model is provided for putting a web-based inventory system in place. For this purpose, system design consideration has been mapped out with a number of steps identified.

2.3 The Importance of Identifying Quantity Level and Having Stock Aging Record

Reducing inventory is the desirable outcome. According to Black(2008, p. 112) suggests that one of the first steps one can take is by classifying parts inventories as one of three types, which are:

- X- Dead Stock. This inventory is not needed, as it might be obsolete, outdated. Action should be taken to diminished them.
- Y- Parts out of balance, which refer to too many stock on hand.
- Z- Parts whose inventories may be considered under control.

High urgency of action needs to be taken to both Category X and Category Y inventories to eliminate bad inventory .

Craig (2011) mentioned that inventory has a “limited shelf-life”, which can be seen in the retailing world by the meaning that there is an opportunity period for that inventory to be sold. Once the period ends, the sale value of it decreases and the profitability and inventory turnover are not maximized. In addition to this issue, excess inventory may also influence the service and operations such as incurring unnecessary freight costs, and should the company does cycle counting, then such(dead) inventory that is counted to often which may lead to waste the time and effort.

This is where by implementing an inventory management tool is really beneficial. Category X, which is the dead stock, can be identified as with the use of the proposed system’s outcome, which is the Stock Aging record. It contains information on the age of the stock and the shelf-life information. With this, the management can detect which stock is reaching its maximum shelf- life, but also able to know which ones are the fast or slow moving inventories so that they can make decision whether to keep purchasing the inventory or looking for an alternative.

CHAPTER 3 : METHODOLOGY

3 Research Methodology

The research methodology section represents the strategies that consist of collecting and analyzing data collected in order for meaningful analysis and interpretations of the research findings to be present. This section focuses on giving the insights on how the research is carried out. This includes the mode of data collection, how the data is analyzed and the research tool design.

Vital information for this research work will be collected through primary and secondary sources with the combination of:

1) Interview with the key personnel in the HRMA department of UTP. (See Appenddix 1. Interview Outline)

2) Observation of the stationaries inventory management in order to have clear view on the flow of the management itself.

3) Documents reviews which consists of records of any relevance document involved during the inventory and procurement process (See Appenddix 2.)

4) Theoretical background information will be gathered through review of related literature on inventory management.

3.1 Sample Design

3.1.1 Defining the population

All relevant departments which are : (1) Department of Chemical Engineering, (2) Department of Civil Engineering, (3) Department of Geosciences & Petroleum Engineering, (4) Department of Engineering & Electronic Engineering, (5) Department of Computer and Information Sciences and last but not least, (6) Department of Fundamental & Applied Sciences.

Besides that, the I-Track Stationery Monitory System usability test also take place in the campus on selected personnel such as students (for the requester role, as well as other roles), lab technician and lab executive in order to gather information on the level or scale of the application usability to a real world implementation.

3.2 Research Hypothesis

The following hypothesis was tested in this research work:

Usability Hypothesis

- H0: I-Track system is hard to use in terms of the interface and feel of the application and users are less likely to use the web application once implemented
- H1: I-Track system is easy to use in terms of the interface and feel of the application and users are most likely to use the web application once implemented.

Implementation Hypothesis

- H0 : UTP does not make use the inventory management approach in making decision to procure inventory.
- H1: UTP make use the inventory management approach in making decision to procure inventory.

3.3 System Methodology

3.3.1 Rapid Application Development (RAD)

The Rapid Application Development model comprises of four major phases; Analysis and Quick Design, Prototype Cycle, Testing and Implementation as shown in Figure 1 . The author perceives that adopting this model in developing the system will help him in completing the system within the time frame given.

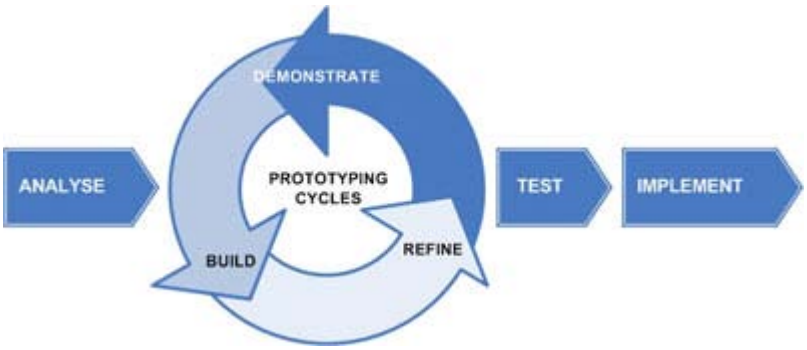


Figure 3.3.2.1-1:*Overview of a RAD Model*

The structure of the RAD lifecycle is thus designed to ensure that developers build the systems that the users really need. This lifecycle, through the following four stages, includes all of the activities and task required to scope and define business requirements and design, develop, and implement the application system that supports those requirements.

- Analyse : Planning Phase

  This stage defines the business functions and data subject areas that the system will support and determines the system's scope.

- User Design

  Also known as the Functional Design Stage, this stage uses workshops to model the system's data and processes and to build a working prototype of critical system components

- Test: Construction

  Also known as the Development Stage, this stage completes the construction of the physical application system, builds the conversion system, and develops user aids and implementation work plans.

- Implementation

  Also known as the Development Stage, this stage includes final user testing and training, data conversion, and the implementation of the application system.

3.4 Project Activities

This project consists of four main activities, which are (1) the Planning Phase (2) the Analysis Phase (3) the Design & Development Phase and (4) the Implementation Phase. The section will elaborate more on each phase of the project in details.

3.4.1 Gantt chart and Key Milestone

Task	W1	W2	W3	W4	W5	W6	W7	mid-sem break	W8	W9	W10	W11	W12	W13	W14
Project works continue															
Database Design															
Data gathering															
Web storyboard															
Interfaces development															
Submission of Progress Report							●								
Backend coding															
User Acceptance Test (Alpha)															
Pre-EDX											●				
User Acceptance Test (Beta)															
Submission of Technical Paper															●
Viva														●	
Submission of Project Dissertation															●

Figure 3.4.1-2:Gantt Chart FYP II and Key Milestone

Based on the Gantt chart,12 weeks are estimated for the development of I-Track Stationery Monitory System. For the first half of the semester (week 1 until week 5); they are dedicated solely for data gathering for database development purposes, drafting and designing the web interfaces. By week 6 onwards, the backend coding for the website which consists of full development phase will be executed.

A user acceptance test (UAT) alpha level will be conducted on week 10, which the system will operate in 90% completion with dummy data for the developer to do testing and do quick bug fixing. After the pre-EDX which is week 11 onwards, I-Track Stationery Monitory System will be given a test run using User Accepting Testing beta for the real-world user(s) and final tweaks will be completed by week 12.

3.4.2 Planning Phase

During planning phase, the business concept and value of the project is determined and identified. A preliminary studies has been conducted in order to identify feasible aspects of the project and based on this, a project plan has been produced. The deliverables for this phase is the feasibility studies and the project execution plan.

3.4.3 Analysis Phase

During this phase, research has been conducted to investigate and discover the function and the limitation of the proposed project. Research methodology has been identified in order to act as a tool in data gathering to further analyze the capabilities and the limitation of the inventory management tool. After the data gathering activities has been conducted, in depth analysis on the findings also been done in order to identify whether the inventory management tool will accepted and used once it is implemented, and this helps in proceeding the next phase.

3.4.4 Design & Development Phase

All the actions taken along the development of the system are documented under this section. The actions include the development of the interfaces storyboard on how they interconnected with each other as well as the functions available, the development of the database, and how the user interfaces will look like. The outline or draft of the whole outlook on the system has to be developed first before executing the actual implementation. Also, during this stage, the proposed system's name was identified which is called ***I-Track Stationery Monitory System***.

Below are some of the activities conducted throughout the design phase for the system:

3.4.4.1 Database Design

The database is the backbone of any system; therefore it took longer time in identifying the entities involved together with its attributes and relationships to one another. The relationships between the tables in the database are in this order

3.4.4.2 Storyboard

A website storyboard is an illustration of the relationships between the web pages that constitutes the site. For I-Track , a storyboard has been developed in order to assist in interfaces design in the future and to ensure that the flow is as intended. There are basically three basic flows in I-Track that can be depicted in a storyboard below:

1. ***Request flow:*** User have to log in → make a request under New Request → Head of Department review, approves and allocate → HR Management & Administration staff do the allocation (under the Monitor Request)→Requester can view Request Status and allocation
2. ***Quantity Checking flow:*** HR Management & Administration staff filled in the criteria →I-Track populate the data based on criteria selected

3.4.4.3 Sitemap

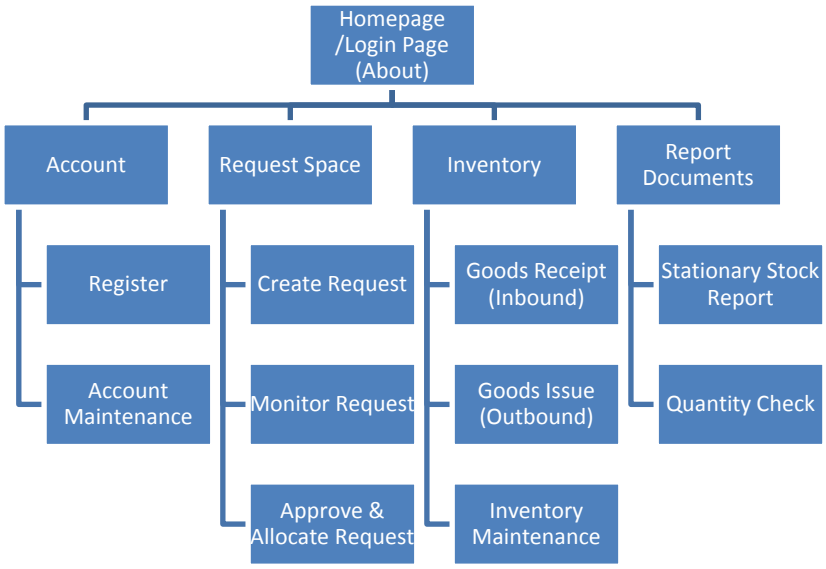


*Figure **Error! No text of specified style in document.**.4.4.3-3:Sitemap of I-Track Monitory System*

3.4.5 Development Phase

3.4.5.1 Database Development

After the entities, attributes and relationships between the entities have been identified and draft out, the next step is to develop the I-Track Stationery Monitory System with the tables.

3.4.5.2 Website Interfaces Development

The development of the pages started parallel with the development of the storyboard. The priority of pages creations are given based on its functions.

3.4.6 Tools

The development of I-Track Stationery Monitory System involve using Adobe Photoshop CS4 for the interfaces, a developer tool that supports web based application due to its multi-user client/server architecture nature which is the Microsoft Visual Studio 2005 that supports Visual Basic and ASP.net programming language. For the database, SQL is used for the database design and development.

After the prototype has been completed, application usability test has been conducted which the research methodology has been described in Research Methodology section. The usability test is used to improve and fix any usability problems before it can be implemented to the users.

CHAPTER 4 : RESULT AND DISCUSSION

4.1 Data Gathering & Analysis

4.1.1 Qualitative Data

4.1.1.1 Interview& Observation

Interview is the most common and direct method to gather information. The session has been conducted twice, which the initial interview was conducted through phone dialing since the location of the interviewer at that particular time was not available in campus, while the second interview conducted through personal meeting with the Human Resource Management (HRMA) of UniversitiTeknologi PETRONAS (UTP). The HRMA representative is the one who is handling the stationaries inventory. Below is the interview summary based on the interviews conducted:

Person Interviewed:

- MrAminur Rashid MohdShariai, Executive HRM & Administration UniversitiTeknologi PETRONAS.

  Interviewer :MohamadAdib bin HarithFadzilah.

  Purpose : to obtain better understanding on the current system and the requirements for new system to be developed.

  Summary of the Interview:

- The interview conducted with MrAminur Rashid exposed the flow the stationaries inventories management, which consists of the current existing system used by the management. The existing system are currently paper based which all the application are made by using forms.
- Due to the information given, it is found that the staff in the management are having problem to trace all the previous applications which sometimes most of the information are missing.

- MrAminur Rashid also explained on the specification of the system to the author. Process documents of the stationaries application has been given (See Appendix 3.) for references.
- MrAminur Rashid added that there is no restrict or specific needs of system platform.
- The author has proposed some of the solution on how the system should work and the platform that will be used in the system, which is ASP.Net.

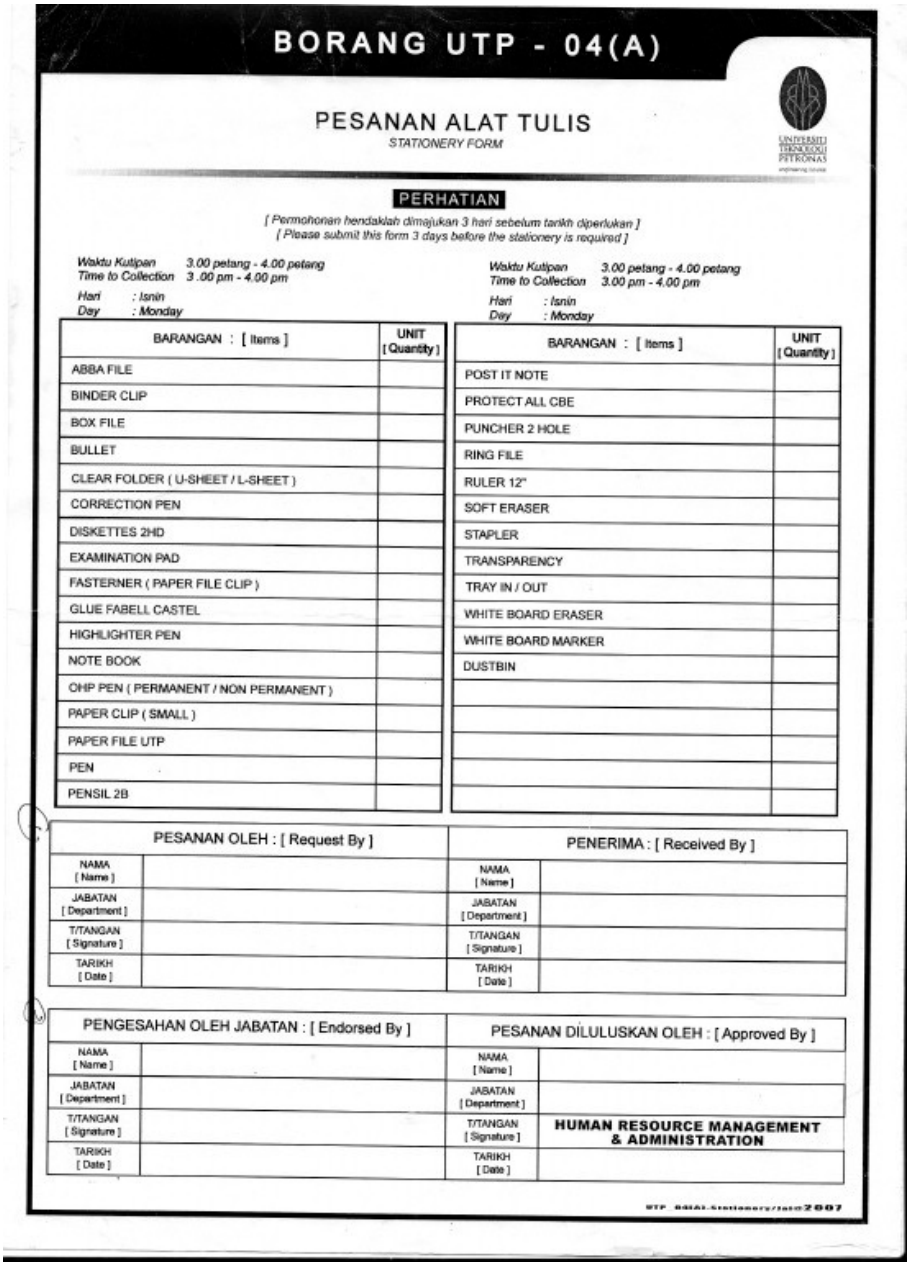
- The system is desired to have these capabilities:
  - Multi user environment, which can be access internally in the campus.
  - Record every inventory information.
  - Tracks inventory movement and who is responsible for inventory used.
  - Online application forms for the stationaries applicants.
  - Status of the inventories.
  - Digital signature for application approval. (Optional)

- Observation
  - Based on the informal observation made during the interview, it can be said that the client is on having the system and having it implemented for the department usage.
  - In addition to that, they are planning to request for an inventory management system to the system.

4.1.2 Document Reviews

There are two documents reviewed during the interviewed which 1) consist of forms of the application 2) The flow chart of the current system process which can seen below:

1) Application Form:



BORANG UTP - 04(A)

PESANAN ALAT TULIS
STATIONERY FORM

UNIVERSITI TEKNOLOGI PETRONAS

PERHATIAN

[Permohonan hendaklah dimajukan 3 hari sebelum tarikh diperlukan]
[Please submit this form 3 days before the stationery is required]

Waktu Kutipan 3.00 petang - 4.00 petang
Time to Collection 3 .00 pm - 4.00 pm
Hari : Isnin
Day : Monday

Waktu Kutipan 3.00 petang - 4.00 petang
Time to Collection 3.00 pm - 4.00 pm
Hari : Isnin
Day : Monday

BARANGAN : [Items]	UNIT [Quantity]
ABBA FILE	
BINDER CLIP	
BOX FILE	
BULLET	
CLEAR FOLDER (U-SHEET / L-SHEET)	
CORRECTION PEN	
DISKETTES 2HD	
EXAMINATION PAD	
FASTERNER (PAPER FILE CLIP)	
GLUE FABELL CASTEL	
HIGHLIGHTER PEN	
NOTE BOOK	
OHP PEN (PERMANENT / NON PERMANENT)	
PAPER CLIP (SMALL)	
PAPER FILE UTP	
PEN	
PENSIL 2B	

BARANGAN : [Items]	UNIT [Quantity]
POST IT NOTE	
PROTECT ALL CBE	
PUNCHER 2 HOLE	
RING FILE	
RULER 12"	
SOFT ERASER	
STAPLER	
TRANSPARENCY	
TRAY IN / OUT	
WHITE BOARD ERASER	
WHITE BOARD MARKER	
DUSTBIN	

PESANAN OLEH : [Request By]	
NAMA [Name]	
JABATAN [Department]	
T/TANGAN [Signature]	
TARIKH [Date]	

PENERIMA : [Received By]	
NAMA [Name]	
JABATAN [Department]	
T/TANGAN [Signature]	
TARIKH [Date]	

PENGESAHAN OLEH JABATAN : [Endorsed By]	
NAMA [Name]	
JABATAN [Department]	
T/TANGAN [Signature]	
TARIKH [Date]	

PESANAN DILULUSKAN OLEH : [Approved By]	
NAMA [Name]	
JABATAN [Department]	
T/TANGAN [Signature]	**HUMAN RESOURCE MANAGEMENT & ADMINISTRATION**
TARIKH [Date]	

Figure 4.1.2.1-5: Application Form

2) Flows of the existing system:

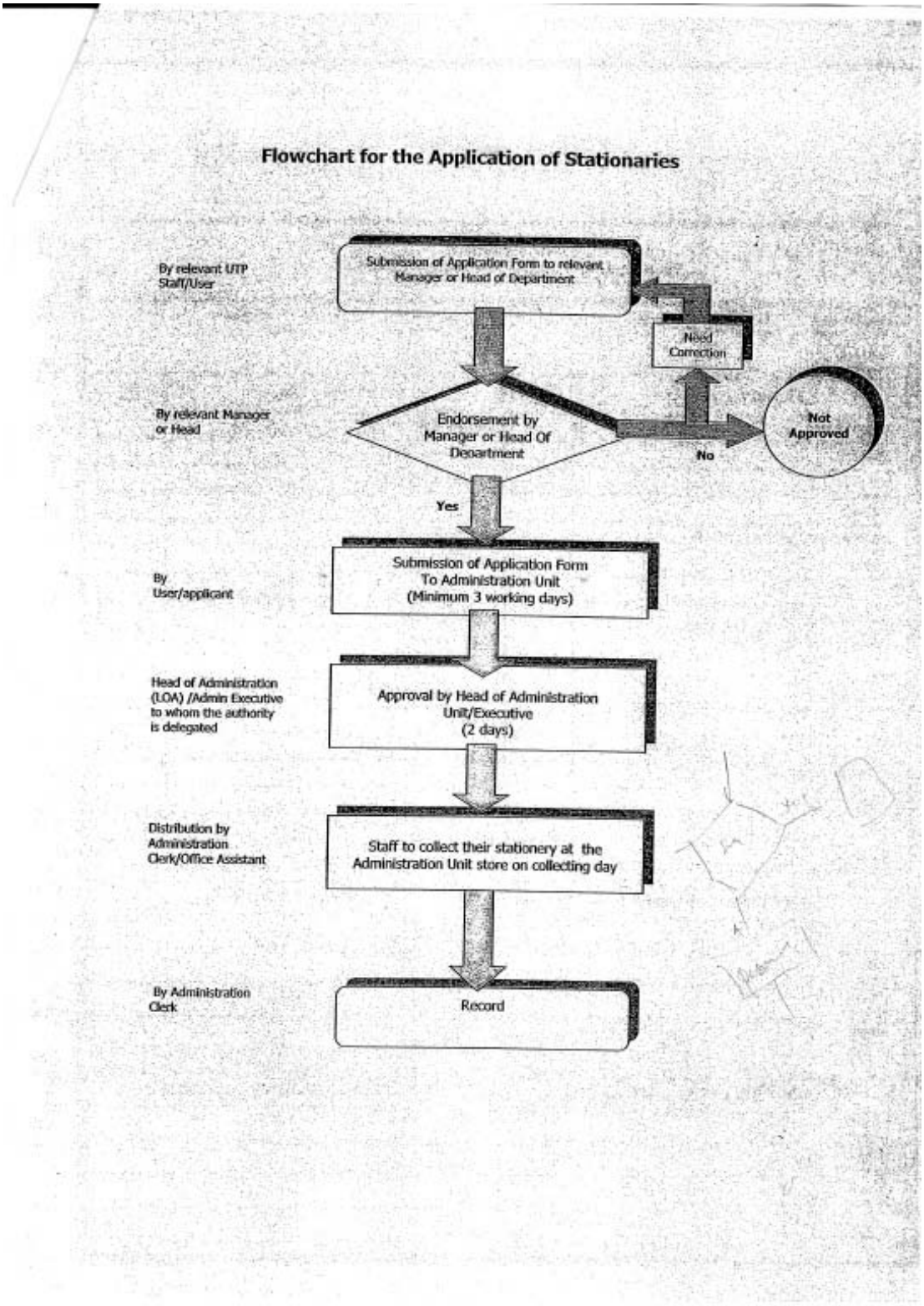


Figure 4.1.1.1-4 : Flowchart of the current system

4.1.3 Database Data

From the data gathered through the interview the list of the stationaries are all in the application forms that they have provided. The database data should be accordingly follow the application form but there are several items (stationaries) that should be replace because it is outdated.

The other database is the users which cater the Head of Department, UTP Staffs, and administrator (HRMA UTP).

4.1.4 Interfaces Data

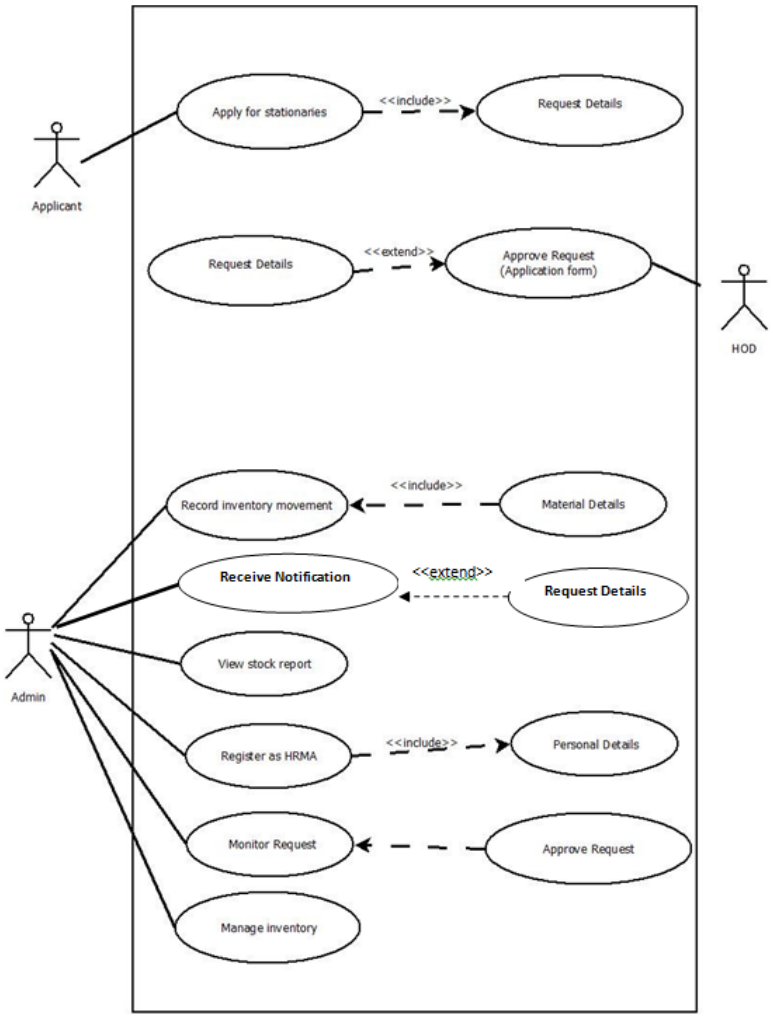
Since I-Track is intended to work as an alternative for procurement method practice in UTP, the UTP main website has been studied in order to gain an understanding what makes a good website to represent UTP. A combination colour of white, blue and gold are used for the interfaces and the navigations are made simple by mimicking the navigation on the UTP e-learning.

4.2 Discussion

Based on the results, it can be said that the overall acceptance of the system is favorable and will make users' daily tasks and workload much more easy and convenient. From the interviews conducted, it can be said that the system will cater to more than 1 user and should be in a website form due to make it multi-user and information sharing. The flow of the system would be as follow:

4.2.1 Use case Diagram

Figure 4.2.1-6: Use case diagram of the system



The system will cater to three different users

- Actor: Applicant
  - Role: Request stationaries for used
  - Activity:
    - Fill the form of the stationaries application that have been provided in the website
    - Provide stationaries description that he or she wants to use
- Actor: Head of Department
  - Role: Act as the middle men that approve the application of the stationaries by the applicant.
  - Activity:
    - A notification of email will be sent to the Head of Department where there will be a link which directed to the form of the applicant.
    - Approve the application by inserting profile details.
- Actor: Admin
  - Role: Act as the top level management that views, monitor and maintain material in inventory as a whole
  - Activity:
    - Register as Admin by providing personal information upon registration
    - Manage request approvals
    - Manage stationaries inventory as a whole department/faculty

4.2.3 SWOT Analysis

Based on the qualitative findings from the interviews, observations and online forum and journal reading, this is the system's SWOT analysis:

Strength (S)	Weaknesses (W)
▪ Offers multi-user system, that allows more interactive and systematic ways in tracking inventory	▪ If there is a problem with the internal connection, this system may not working.
Opportunity (O)	Threat (T)
Have space for enhancement since UTP have improper faculties level inventory management	▪ More advance inventory management system (e.g.: if UTP decides to integrate all of its function using SAP instead)

Figure 4.2.3 – 7: SWOT analysis for the system

4.2.4 Current System vs. System Flow

The findings also show there are some differences in how both current system and the system work, which can be shown below:

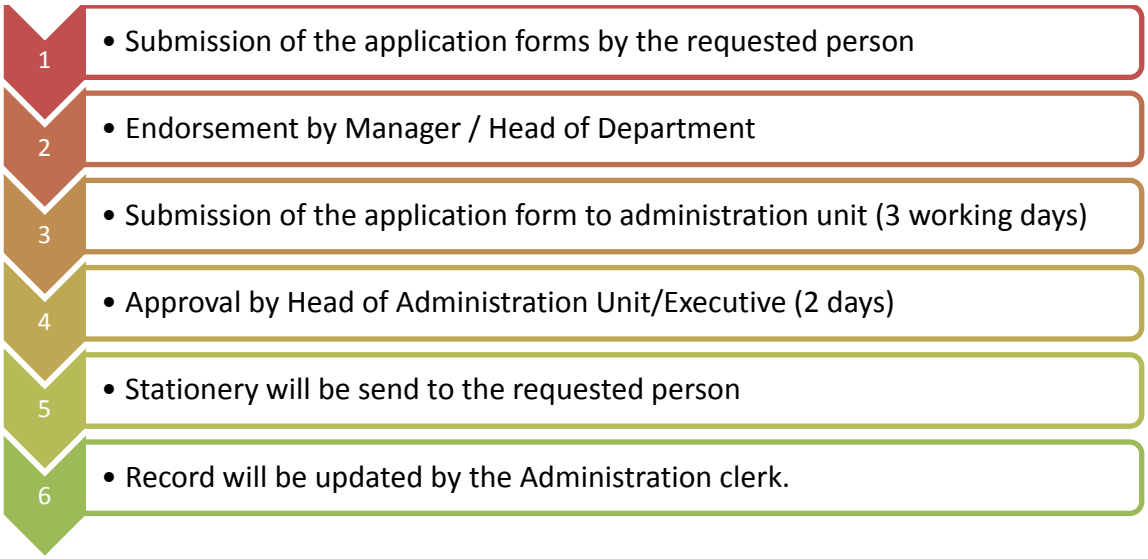


Figure 4.2.4 – 8: Current Manual System Flow

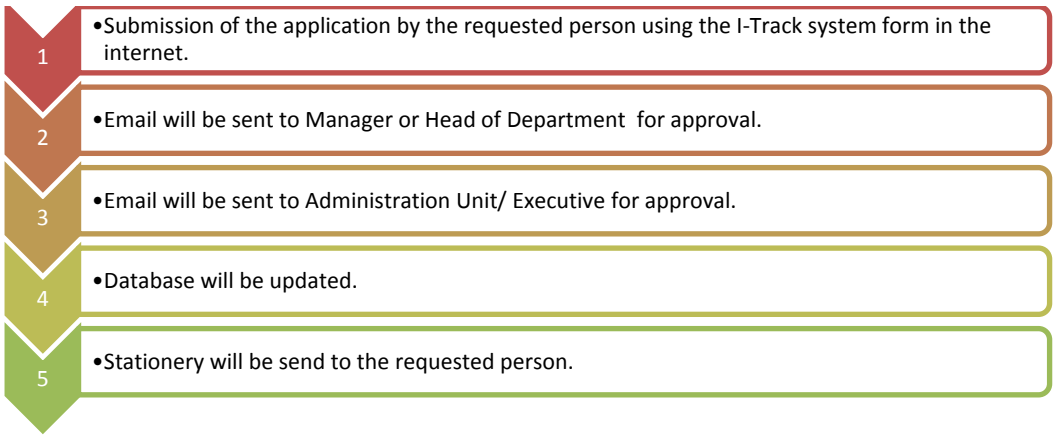


Figure 4.2.4– 9: System Flow

4.2.5 Current System Flow

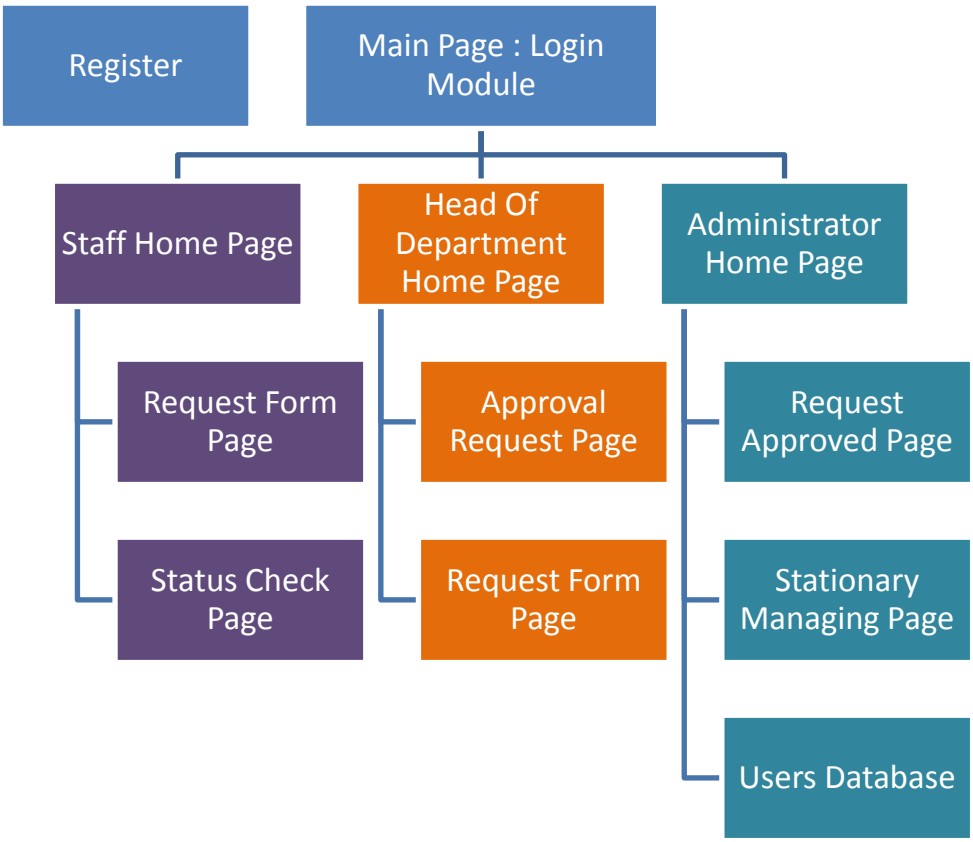


Figure 4.2.4– 10: Current System Flow

4.2.5 Current System Interface and Its Functions

Home Page

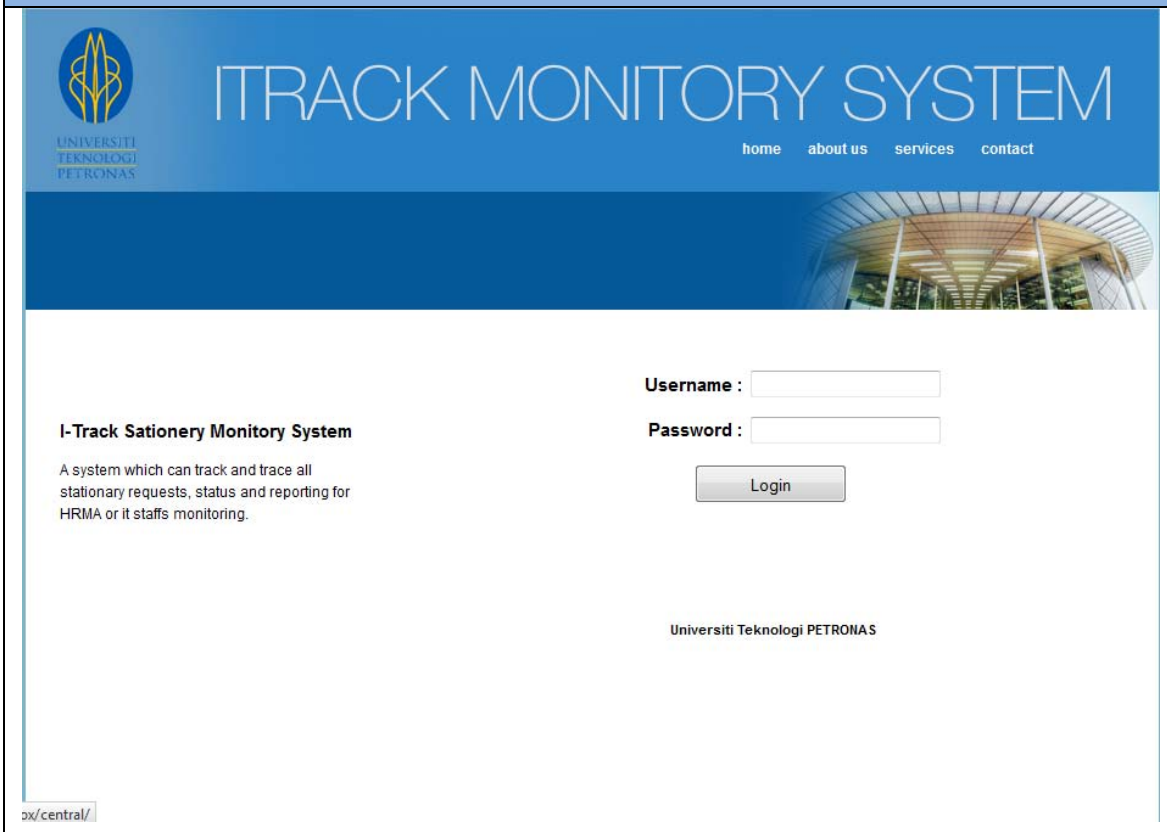


Figure 4.2.5– 11: I-Track Homepage

Details and Functions:	Landing Page for I-Track Stationery Monitory System.
User:	None
Buttons and Links:	Home: Direct to Landing Page About: Description about the website Contact : Information about the website contact details Register : Direct to Register Page Login : Direct to Login Page
Database :	None

Staff Home Page	

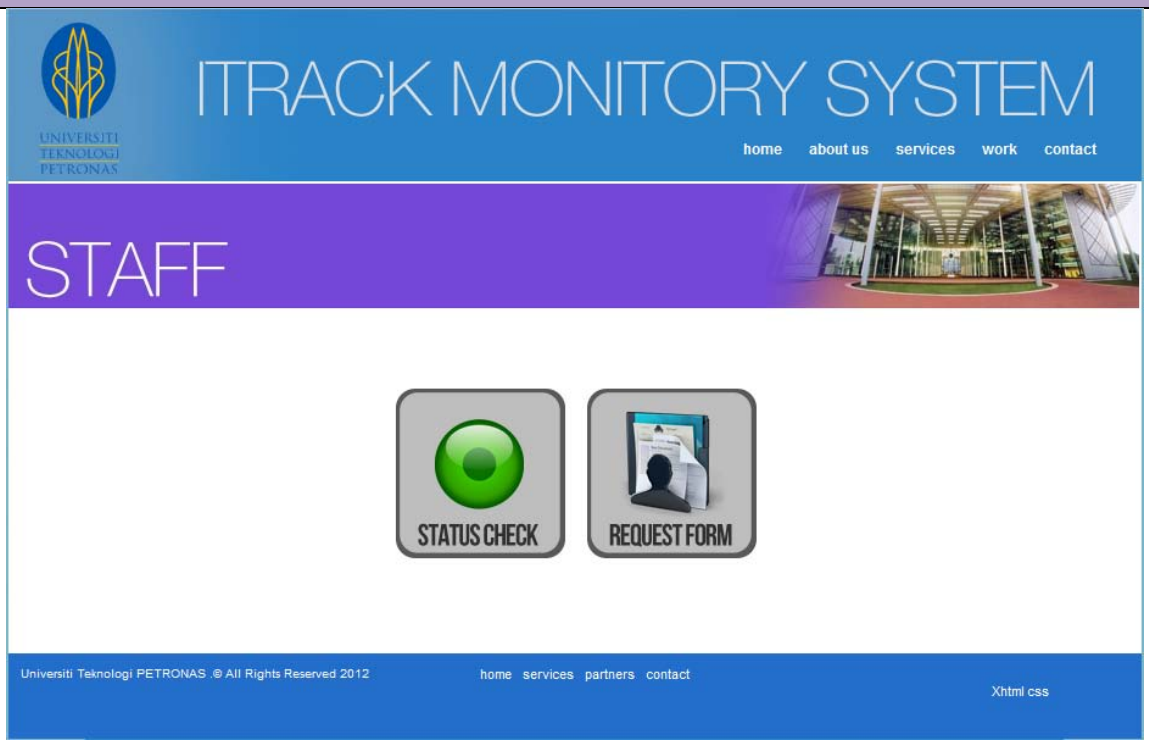



Figure 4.2.5– 12: I-Track Staff Home Page	
Details and Functions:	Staff Home Page : Two options that staff can do which are checking the status and request stationery
User_Type:	Staff
Buttons and Links:	Status Check Button: Direct to Status Check Page – where staff can trace their request whether it is approved or not. Request Form Button : Direct to Stationery Request page- where user can make a request in it.
Database :	None

Request Form Page	

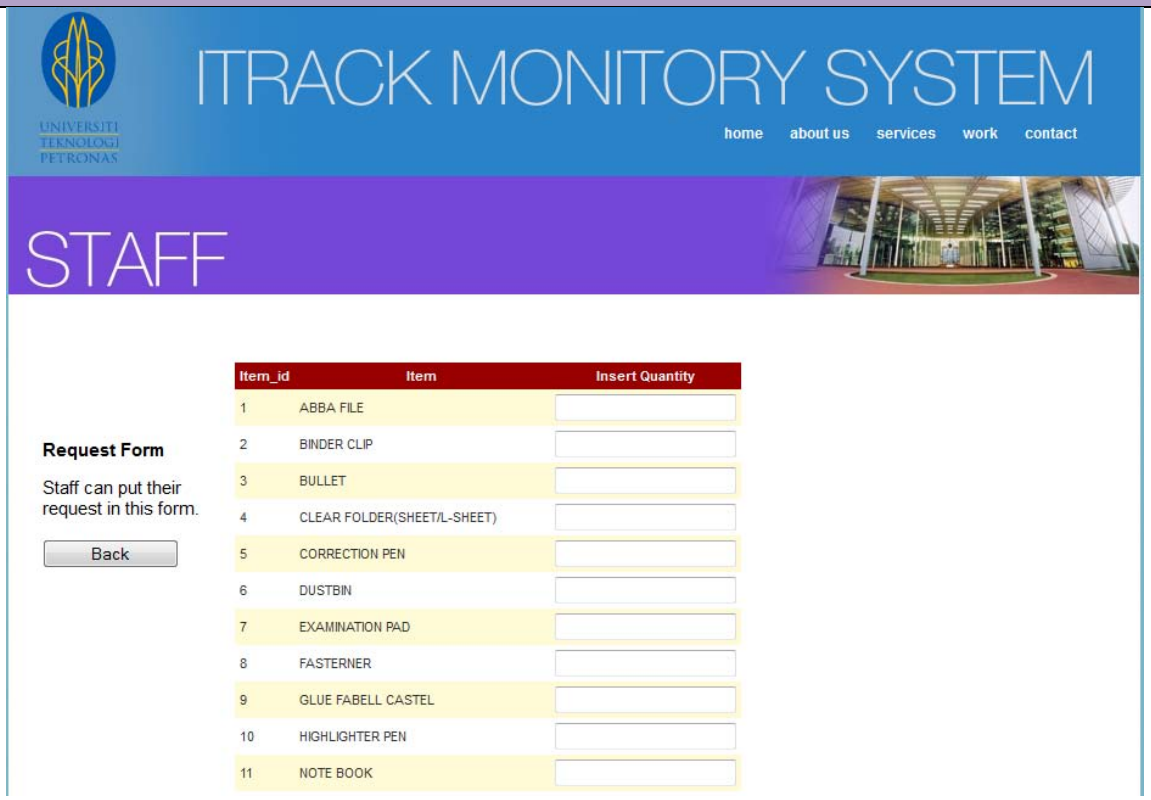
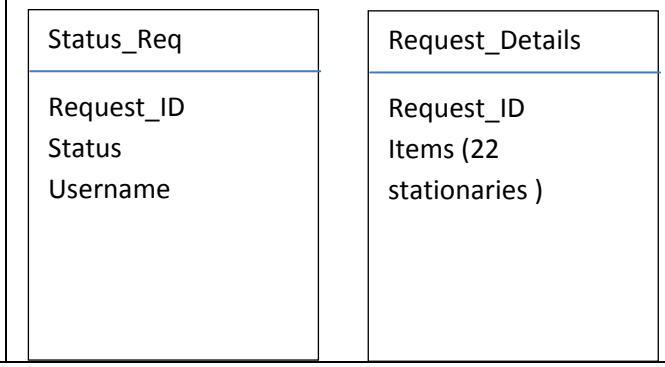



Figure 4.2.5– 13: I-Track Request Form Page	
Details and Functions:	Request Form is where the Staff/HOD can make a request on the stationery
User:	Staff/ HOD
Buttons and Links:	Back Button: Direct to Staff Homepage Next Button: To confirm the request Reset Button : To reset all the form details that has been entered Unit Quantity List Box : User can enter the quantity of item needed Date Needed : The date where the item is needed Priority : Shows the level of the importance of request.

Database :	 Status_Req Request_ID Status Username Request_Details Request_ID Items (22 stationaries)

Head Of Department Homepage

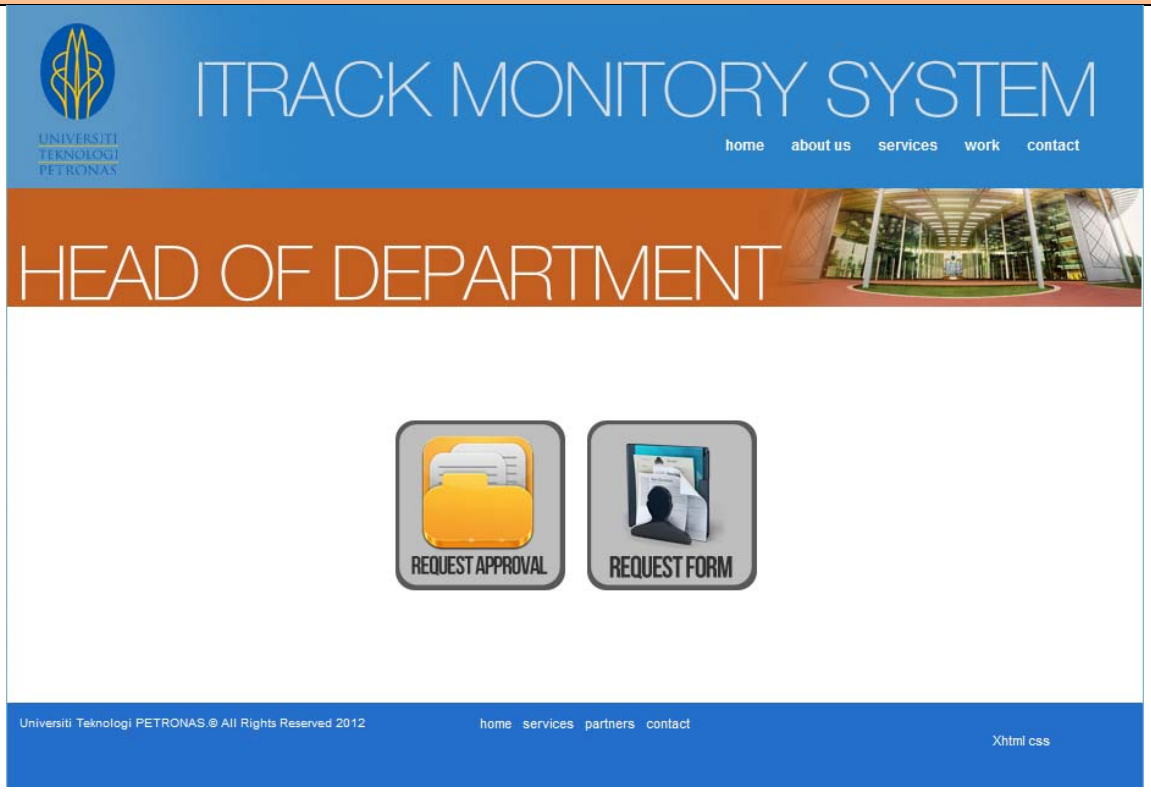


Figure 4.2.5– 14: I-Track Head of Department Home Page

Details and Functions:	Staff Home Page : Two options that staff can do which are checking the status and request stationery
User:	HOD
Buttons and Links:	Request Approval Button: Direct to Request Approval Page Request Form : Direct to Stationery Request page- where user can make a request in it.
Database :	None

Approval Request Page

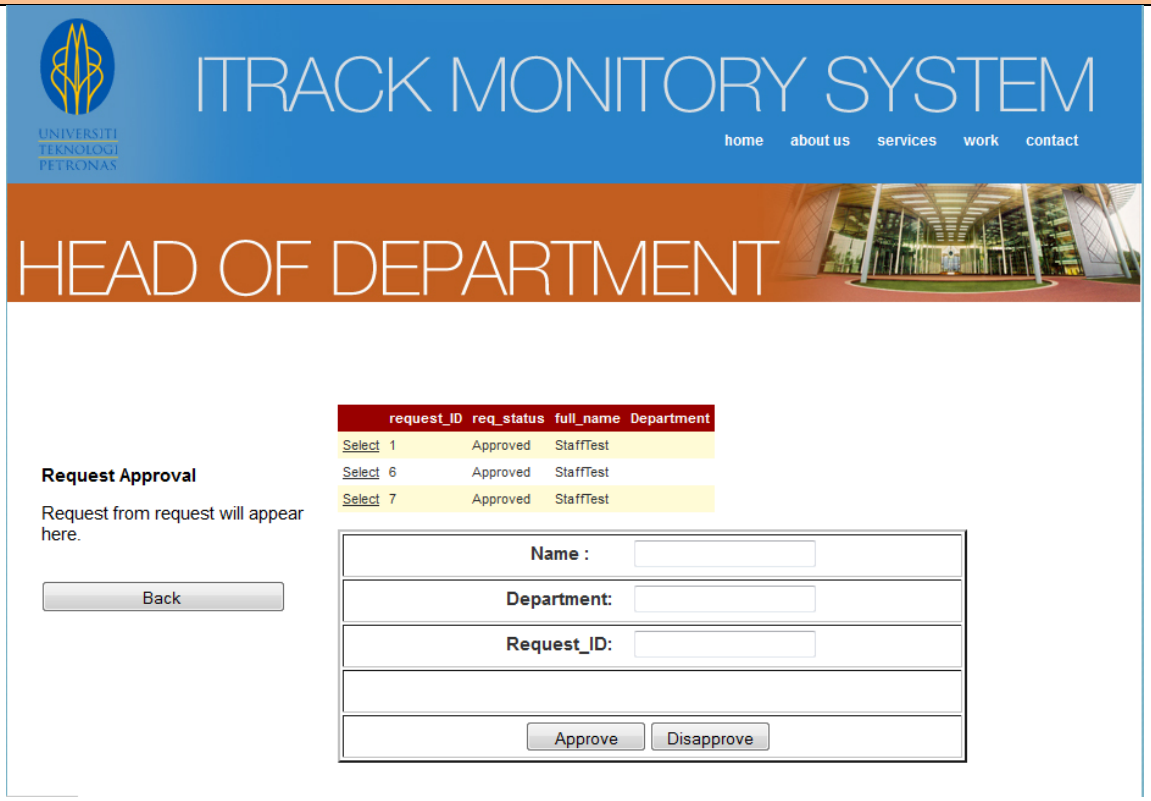
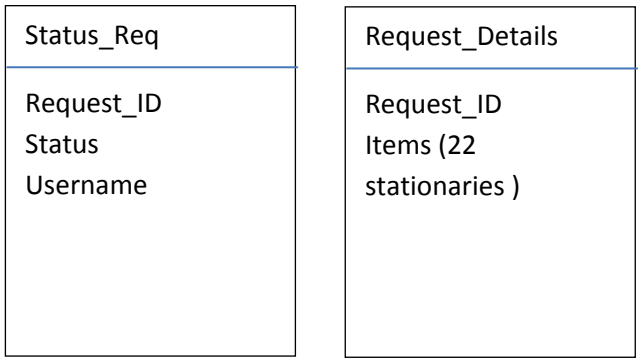


Figure 4.2.5– 15: I-Track Approval Request Page

Details and Functions:	Staff Home Page : Two options that staff can do which are checking the status and request stationery
User:	HOD
Buttons and Links:	Approve : Approving the request Back Button : Return to the homepage.

Database :	 Status_Req Request_ID Status Username Request_Details Request_ID Items (22 stationaries)

Administrator Homepage	

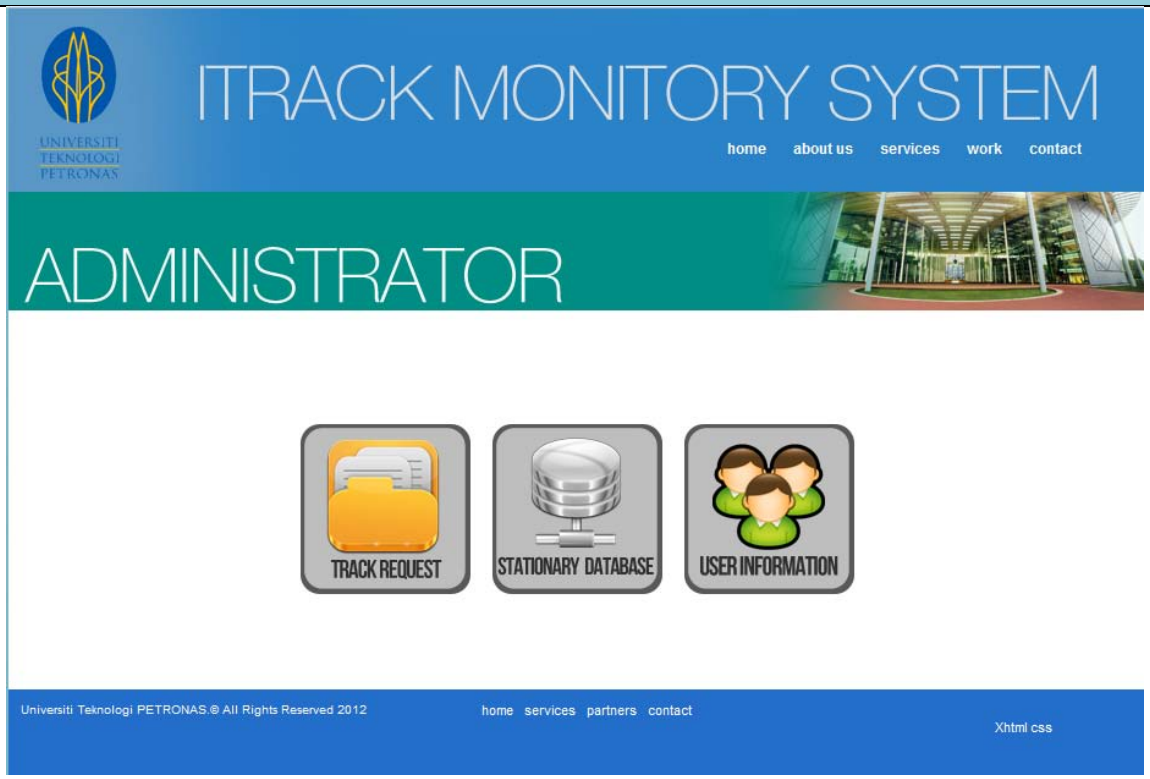


Figure 4.2.5– 16: I-Track Administrator Home Page

Details and Functions:	Administrator Home Page : Two options that staff can do which are checking the status and request stationery
User:	HOD
Buttons and Links:	Request Approval Button: Direct to Request Approval Page Stationery Database : Direct to StationeryManaging page- where user can edit the database information in there. User Information: Direct to Users database page.
Database :	None

Stationery Managing page

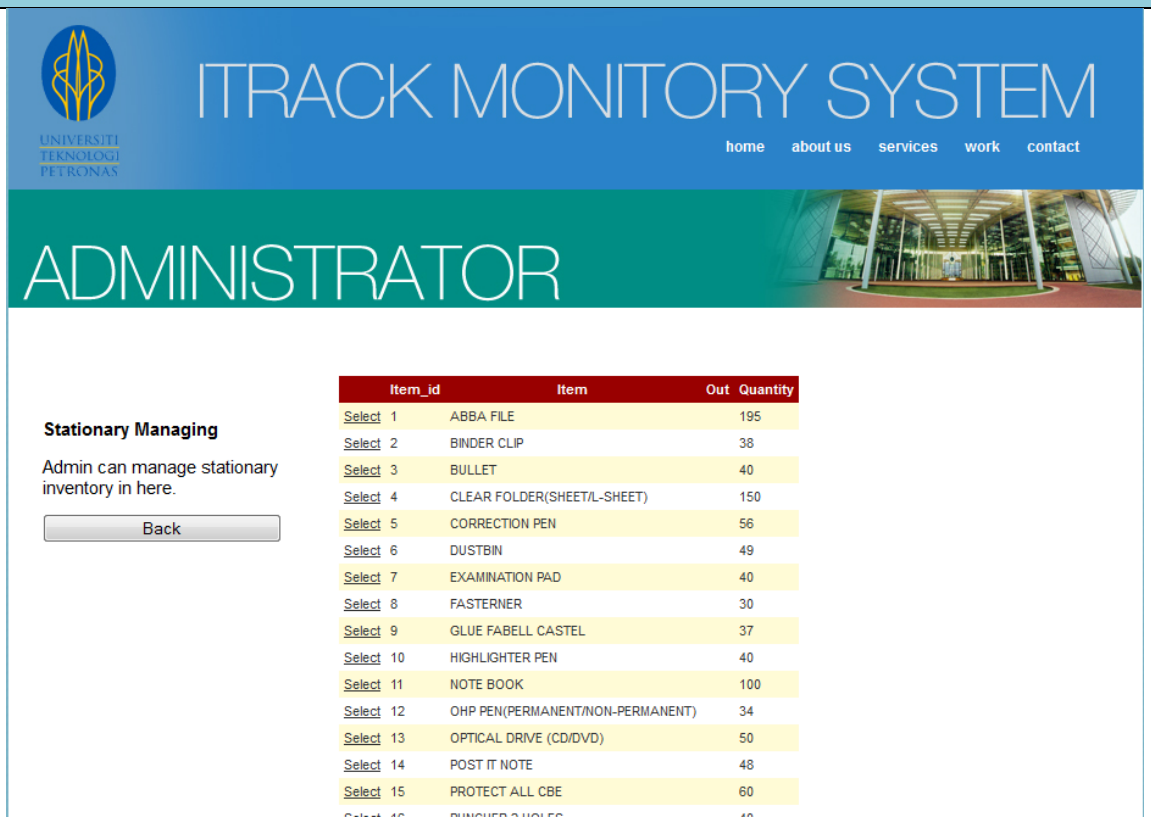


Figure 4.2.5– 21: I-Track Stationery Managing Page

Details and Functions:	HOD will go to this page to check any request that they want to approve or to disapprove
User:	Admin
Buttons and Links:	ADD button: Add Item DELETE button : Delete Item Edit Button : Edit properties of the items Back: Return to Homepage.
Database :	Stationery_inventory Item Quantity In Out

User Database page

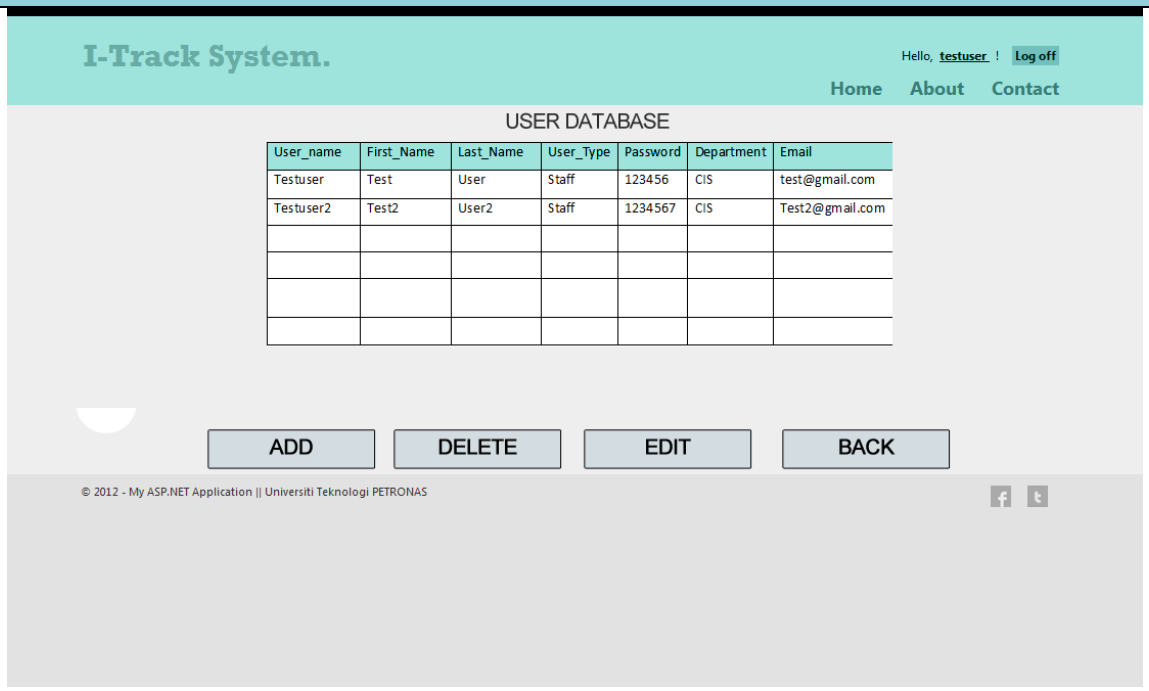
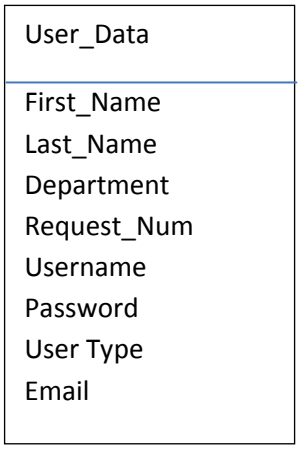


Figure 4.2.5– 22: I-Track User Database Page

Details and Functions:	Admin can edit, add and remove user databases in here.
User:	Admin
Buttons and Links:	ADD button: Add User DELETE button : Delete User Edit Button : Edit properties of the users Back: Return to Homepage

Database :	 User_Data First_Name Last_Name Department Request_Num Username Password User Type Email

CHAPTER 5 : CONCLUSION AND RECOMMENDATION

In conclusion, I-Track Stationery Monitory System provides an online platform for request from the staffs and tracked online. Not only that, it acts as an online tool for a simple inventory management and decision support system for procurement practice in Universiti Teknologi PETRONAS.

Based on the research conducted and after going through the development and implementation phase it can be said that I-Track Stationery Monitory System can be improve . For future enhancements, it is recommended that the staff and the students registration should be integrated with the existing UTP database, which uses the existing student or staff IDs instead of email as the username as per current practice on the I-Track.

In order to this project to be perfect the student and the HRMA UTP has to be connected and discuss usually as to make sure that the system that they want is suit to what do they really need.

REFERENCES

1. Karim M, Saad MF, Haque M (2011), "Development of a Prospective Web-Based Inventory System for Management of Lab Facilities "Journal of Emerging Trends in Engineering and Applied Sciences (JETEAS) 2 (1): 36-42
2. Mirghaderi P (2009), “Online Database Inventory for Bookstore Management System “Faculty of Computer Science and Information System UniversitiTeknologiMalaysia .
3. Inman , A.R (n.d). Inventory Management Retrieved from http://www.referenceforbusiness.com/management/Int-Loc/Inventory-Management.html.
4. Chary, S.N. (2000). Productions and Operations Management Second Edition. New Delhi: Tata McGraw-Hill Publishing Company Limited.
5. Mercado, E.D. C. (2008). Hands-On Inventory Mangement.Boca Raton, Florida: Auerbach Publications.
6. Chisholm, G. (2000). Research Results Digest - Revised Inventory Management Desk Guide. Retrieved from http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_40.pdf.
7. Black, J. (2008). Lean Production: Implementing A World-Class System. New York: Industrial Press, Inc.
8. Craig, T. (2011). Inventory Turns: Are You Inventory Rich and Cash Poor. Retrieved from http://www.ltdmgmt.com/cash_poor.asp

APPENDIX