# Chapter 2: Requirements Specification

## **2.1 Introduction**

In this chapter will be looking at the different requirements for the Query Helpdesk system for Kwekwe High. This stage of the system analysis and design is very important because it will tell us what features are supposed to be in the system, what processing will happen, as well as what software and hardware will be required in order to successfully implement the whole system.

## **2.2 Fact finding and analysis tools**

Fact finding is process of collection of data and information based on techniques which contain sampling of existing documents, research, observation, questionnaires, interviews, prototyping and joint requirements planning (Kothari, 2002). System analyst uses suitable fact-finding techniques to study the current existing system. Collecting required facts are very important to apply tools in System Development Life Cycle because tools cannot be used efficiently and effectively without proper extracting from facts (Teka, 2008). Fact-finding techniques are used in the early stage of System Development Life Cycle including system analysis phase, design and post implementation review. Facts included in any information system can be tested based on three steps: data- facts used to create useful information, process-functions to perform the objectives and interface-designs to interact with users. Fact-Finding often brings systems analysts into contact with working procedures of the current system. Effective fact*-*finding techniques are crucial to the development of systems projects. Data was collected through use of questionnaires, interviews, observation and document review with the aim of collecting reliable and complete data that can provide concrete conclusions and recommendations for the study.

### **2.2.1 Questionnaire survey**

Questionnaires present written questions to respondents, who in turn provide their answers in small written words or ticks to represent a selected choice. The researcher gave questionnaires to the students and administration staff sample after they had participated in the research. Two sets of questionnaires were used in this research, one responded by students and the other was responded by the administration staff members and administrators. Questionnaires were used as data gathering tools because they are practical and large amounts of information can be collected from large number of people within a short period of time and results from questionnaires can be quickly and easily quantified by the researcher.

## **2.2.2. Observations**

Participatory observation was also used to collect research information. Participating Observation was used because it enabled the researcher to gather nonverbal expression of feelings and to check on the amount of time spent on various administration activities when students reported queries to the administration block. In simple terms, participant observation was used because it increases the validity of research, and this helped the researcher to understand the context and phenomenon under study. The researcher observed the time taken by each student waiting in the queue to report a case. The service time, which is the time during which the query is attended to by the administration, was also recorded. The overall time taken to report and receive a solution to the query was then calculated. This was compared to the time taken to create a ticket using the query helpdesk system, and the total time taken to create a ticket and receiving notification from the helpdesk when a query was resolved.

## **2.2.3. Interview**

Interviews were held mainly with students as the administration staff members were busy most of the time. The interviews were semi structured so as to guide the flow of the interview so that only the required information was gathered. The students who are the mainly affected with the manual method of administration at Kwekwe provided in-depth and comprehensive information about the administration situation. The researcher used qualitative skills to sum up and quantify the responses obtained from the interviews. The interviews had open ended questions so as to get the actual feelings and ideas being experienced.

## **2.3 Data requirements**

**HelpDesk Form**

ID

QUERY NAME

REG NUMBER

DEPARTMENT

QUERY DATE

QUERY DESCRIPT

**Member Registration Form**

PHONE NUMBER

REG NUMBER

NAME

EMAIL ADDRESS

PHYSICAL ADDRESS

PASSWORD

PROGRAMME

GENDER

**2.3.1 Data structers and file organisation**

**Table Member Registration**

|  |  |  |
| --- | --- | --- |
| Field Name | Field Type | Field Size |
| REG\_NUMBER | TEXT | 30 |
| FULLNAME | TEXT | 90 |
| EMAIL | TEXT | 90 |
| ADDRESS | TEXT | 340 |
| PHONE | NUMERIC | 10 |
| PROGRAMME | DATE |  |
| GENDER | BOOLEAN | 1 |

Table Leave application

|  |  |  |
| --- | --- | --- |
| Field Name | Field Type | Field Size |
| ID | TEXT | 30 |
| REG\_NUMBER | TEXT | 30 |
| DEPARTMENT | TEXT | 90 |
| QUERY\_TITLE | TEXT | 90 |
| QUERY\_DESCRIPTION | TEXT | 350 |
| QUERY\_DATE | DATE |  |

## **2.4 Processing requirements**

### **2.4.1 Functional and non-functional requirements**

#### **2.4.1.1 Functional requirements;**

Functional means providing particular service to the user. These are requirements that define those features of the system that will specifically satisfy a user need, or with which the user will directly interact. Functional Requirements Specification documents the operations and activities that a system must be able to perform. Functional Requirements should include:

* Descriptions of data to be entered into the system
* Descriptions of operations performed by each screen
* Descriptions of work-flows performed by the system
* Descriptions of system reports or other outputs
* Who can enter the data into the system
* How the system meets applicable regulatory requirements

The following are the defined functional requirements of the proposed system:

* **User login-** The system must be accessed through log in using acceptable credentials (user name and password).
* **Registration of students-** The system must be able to capture the necessary details of the students.
* **Display query details and status**- The system must display the query details of the student.
* **Validation and Verification-** The system must have facilities for integrity checks and to allow verification of data before it is captured into the system or stored into the database.
* **Central Database-** Use of a central database to enable real time data capturing and manipulation to facilitate easy access of information and centralised storage.
* **Report Generation-** The system should have efficient reporting capabilities to facilitate the generation of reports for the management

#### **2.4.1.2 Non-functional requirements;**

The following are the performance requirements:

* **Usability** - The system will provide an interface that is easy to comprehend. The targeted users are the students and therefore the design of the system should take into consideration that factor.
* **Maintainability** - The system should be easily maintainable and allow easier adaptation to changes. This is very important when carrying out version upgrades. It should allow the developer to add and remove content as necessary so as to keep the system up to date.

## **2.5 Software Requirements**

Software requirements mainly consists of the platform on which the system will run and the software that will be used to develop the proposed system.

**Developer**

The developer of the system used the following software:

* Windows 10 64bit
* Sublime text Editor
* Laragon or wamp or xamp server
* Java SDK

**MySQL**

**MYSQL DBMS**- It allows combination, extraction, manipulation and organization of data in the helpdesk system database. It is platform independent and therefore can be implemented and used across several such as Windows, Linux server and is compatible with various hardware mainframes. It is fast in performance, stable and provides business value at a low cost.

## **2.6 Hardware requirements**

* Laptop or Desktop
* Phone

## **2.7. Conclusion**

This chapter highlighted the requirements required for development of the Query Helpdesk System. The next chapter will analyze the research methodologies, the Systems Life Cycle used as well as the instruments used in the solution to the problem.