# Chapter 2: Requirements Specification

## **2.1 Introduction**

The purpose of the requirement analysis is to gather and outline what the user of the system requires in terms of how the system should operate. It explores the expectations of the user about the proposed system. Requirements are actually the descriptions on how the system should work and interact with the user of the system. In this chapter will be looking at the different requirements for the Leave application system for Mutumba 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** **Interviews**

Kadushin and Kadushin( 2013) defined interview as a person-to-person interaction that has a definite and deliberate purpose that is recognize and accepted by both participants. The researcher prepared the interview guide to use during interviews. The interviews were only carried out with the Teachers. The interviewee’s were asked questions and their various responses were recorded by the researcher. Interviews allowed instant feedback which enabled the researcher to effectively appraise the validity of the responses that were given. The interviews were very easy to control and there was a very high response rate but how ever interviews had their drawbacks. Personal interviews have been suggested to be time consuming and they permitted interviewer and interviewee bias

## **2.2.2. Questionnaires for 10 Teachers**

(Neelankavil, 2015) defined a questionnaire as a series of questions on a specific topic, based on specific information needs or research goals, which a respondent answers. The role of a questionnaire is to translate the research objectives into specific questions that are asked of respondents. Questionnaires helped the researcher to collect data from a large number of people, it is also economical than other data generation methods. However the researcher could not correct misunderstandings, probe for more detail, or offer explanation or help.

## **2.3 Data requirements**

**Leave Application Form**

EC NUMBER

Full Name

Leave Type

Date From

Date To

Number of Days

Reason for Leave

**Member Registration Form**

PHONE NUMBER

EC NUMBER

NAME

EMAIL ADDRESS

PHYSICAL ADDRESS

PASSWORD

DATE EMPLOYED

GENDER

**2.3.1 Data structers and file organisation**

**Table Member Registration**

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

Table Leave application

|  |  |  |
| --- | --- | --- |
| Field Name | Field Type | Field Size |
| LEAVEID | TEXT | 30 |
| EC\_NUMBER | TEXT | 30 |
| DATE\_FROM | DATE | 90 |
| DATEEND | DATE | 340 |
| NUM\_OF\_DAYS | NUMERIC | 10 |
| REASON\_FOR\_LEAVE | DATE |  |
| DATE\_APPLIED | DATE | 1 |

## **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 Teachers-** The system must be able to capture the necessary details of the Teachers.
* **Display leave details and status**- The system must display the leave details of the teacher.
* **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.

**Android Studio**

Users of our system will require Android Studio 3.0.1 or higher in order to run our

Developer

The developer of the system used the following software:

* Windows 10 64bit
* Android Studio 2.2
* Android SDK
* Java SDK

**MySQL**

MYSQL DBMS- It allows combination, extraction, manipulation and organization of data in the KMPS 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**

* Mobile phone (android)
* Laptop or Desktop
* Usb cable

## **2.7. Conclusion**

This chapter highlighted the requirements required for development of the Leave System. The next chapter will analyze the research methodologies which include various teaching strategies to be used, the Systems Life Cycle used as well as the instruments used in the solution to the problem.