## 2.2.2 Functional Requirements

It's a kind of service which that software must provide. It describes software system or a component of one. A function is just the inputs, behavior, and outputs of a software system. It can be a computation, manipulation of data, project management, user interfaces, or any other function that determines what a process is supposed to do. Functional Requirements are also known as Functional Specifications in Software Engineering. It includes such as:

* The **Software features** need enhanced properly.
* **Access Tiers** must be given to the functional features.
* **Data attributes** need to be identified thoroughly.
* Software **output formats** should be done.
* **New software handling.**

### 2.2.2.1.1 Records Management System

The record management system should control the development, maintenance, and destruction of records, as well as the business transactions related with them, in a systematic and effective manner.

**Student Record Management**

* The student record management system should allow the university administration, module leader, and staff to remove, add, and renew the changes that need to be made, with only the administrator having access to manage the records.
* Student details are stored and should easily retrieve.
* When update or any kind of changes made in the student record management, there should be a notification saying, “changes made” and listing them.
* Parents, non-teaching staffs and third person can see all the students record easily.
* While searching for the student, after typing 3 letter start to show list of possible students.

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Admin** | **Staff** | **Student** |
| Create | Create a new record | No access | No access |
| Amend | change one or more student's information | no access | no access |
| Archive | Move all the record to archive | no access | no access |
| Display | Display all the list of records, when an item is clicked show all the information | Able to see the students name and information | Able to see their own name, level and email |
| Assign | Assign a student to a course | no access | no access |

**Staff Record Management**

The record management should be easily accessed by the administrator and the staffs.

* Administrators have full access to modify the staff record management.
* Students have only view access.
* It contains the teaching staffs as well as non-teaching staff records.

**Course Record Management**

* Should be fully accessed by the administrator, course leader.
* Should be able to view by the student and the staffs.
* It contains the course which students are studying.

**Module Record Management**

* Should be fully accessed by the administrator and module leader.
* Should be able to view by student and the staffs.
* It contains the module which the students are studying.

**Assignment Record Management**

* Should be fully accessed by the administrator, assignment leader and module leader for grading.
* Should be able to view by student and the staffs.
* It contains assignment record for the students.

**Attendance Record Management**

* Should be fully accessed by the administrator, course leader and module staff.
* Should be able to view by students only.
* It contains student, staffs as well as non-teaching staff attendance record.

**Personal Tutor record Management**

* Should be fully accessed by the administrator and specific tutor only.
* Should be view by the students and staffs and they can get an appointment date.
* Stores the details of specific personal tutor.

**Timetable Management**

* Can be easily edited and updated by administrator.
* It contains all the daily routine of the university.
* It contains the course, module timing and the timing of the college.
* It contains the record and timetable of the university.

**Diary Record Management**

* Can be easily accessed by the administrator and library staffs.
* Can view by the students and the staffs.
* In this management the work done, and daily progress are stored.

**Report Generation/Management**

* It contains the report of all the students, staffs**.**
* Progress of all the staffs and students are recorded**.**

**External Output format (for use with e-mail/letters/SMS/reports)**

This is the auto generating emails format when the student apply online for the course in the university.

*Dear First\_Name Last\_Name*

*Thank you for your concern in Woodland University College (WUD). This email verifies that you have applied for the course in WUC.*

**Details to be filled**

|  |
| --- |
| Details to be Filled  Student Full Name:  Address:  Email:  Faculty:  Contact Number:  Date Of Birth:  Gender:  -------------------------  Student Signature |

### 2.1.3.1.2 Student Records/Information Portal

A student record management system is a technology that tracks and records students' normal actions at institutes, such as attendance, test performance, and conduct. With a role-based login, students, instructors, administrators, and parents may use the program. It captures all the student data as well as their personal information, which can then be readily searched and retrieved. Years of data are stored online on a cloud platform by the program.

**Student Record Management System Features**

**Easy Report Generation**- The program makes it simple to create reports in the formats necessary.

**Data Search and Retrieval**- The system can assist users in quickly finding and retrieving student data.

**High Data Storage**- The system can store a lot of data without affecting its performance.

Teachers, students, and parents can all have different levels of access to the program.

**Attendance Management**-It aids in the automated recording of daily attendance utilizing a biometric attendance system.

Individuals of all sorts will find the system to be simple to use and straightforward.

**Benefit of Student record Management system**

* Digitalized System
* Integrated platform for Data management
* Student Information protection
* Checking student presence online

**Student Information portal**

Student information portal should contain name, email, university id etc.

Sample for student information portal is given below in fig.2.1.3.1.2.1:

Graphical user interface, application, Teams

Description automatically generated

fig.1.5

### 2.1.3.1.3 Woodlands University College Corporate Website

According to the problem domain research and the interview from the stakeholder. Following are the requirements that should be done.

## 2.2.3 Performance Requirements

Performance requirements specify how effectively a software system performs various tasks under specified circumstances. The software's response time, speed, processing time, and memory size are all examples.

### 2.2.3.1 Records Management

#### 2.3.1.1 Speed

In Record management speed play very important role. All the pages should load fast. There are two sub classes for the speed they are given below:

* Throughput- The time taken to open the record management should not exceed more than 3 second. All the pages in record management should open smoothly and can be done more than 10000 transactions at a time.
* Response Time- It is the time taken to open the record management should not exceed more than 3 second. Time taken to carry out online searches and respond should not exceed more than 5 second. At a time more than 1000 students can search online.

#### 2.3.1.2 Capacity

For record management capacity is also important to store all the data and information about the staffs and students. All the data are stored in cloud as well as in the university database which should be up to 20gb. At A time 1000 number of data can be store and 1000 number of operations can be run. There should be 5-10 member who can access the record management.

#### 2.3.1.3 Reliability

As an online system there should be assistance to handle the record management system online which should run smoothly. Sometimes the failure occurs on the system due to several reasons such as searching for courses by more than 1000 students, due to server failure. The system should run 164hours out of 168 hours in a week.

#### 2.3.1.4 Usability

The usability of the system should be familiar to all the accessed user by providing them tutorials and can use more easily. Experience user can be familiar in just 30 minutes of tutorial and the non-experience should learn from tutorial.

#### 2.3.1.5 Accessibility

To access to record management, the permission should be taken from the administrator. The specific assistance can access the record management. Staffs and students should not have access to the system.

## 2.2.3.2 Student Records/Information Portal

### 2.2.3.2.1 Speed

In the student records/information portal, there should be fast to loading the pages.

* Throughput- the pages of the student record should open 3-4 seconds. There should be 1000 transaction record of student at a time.
* Response Time- the response time of the student record page should be less than 5 second. Time taken to respond for the online search should no longer than 4 second. At a time 1000 user can search for the record.

### 2.2.3.2.2 Capacity

The capacity of the student record/information portal should be large enough which can store data up to 20gb. At a time 1000 plus student records can stored. Only the Admin can have access to the system.

### 2.2.3.2.3 Reliability

The student record/information portal should be more reliable so that the system can run smoothly without any issue. There should be team to handle the student record / information portal so that there will be easy to use online. The system run for 164hours out of 168 hours a week.

### 2.2.3.2.4 Usability

The student record/information portal system should be easy to use or for new user there should be the tutorial.

### 2.2.3.2.5 Accessibility

The student record / information portal should be accessible by the administrator and staff can have access too. There should be team that assist the student record.