

# **SOFTWARE REQUIREMENT SPECIFICATIONS**

## **GCIT Enrollment Number Generator**

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# 1. Introduction

**A software requirements specification is a description of a software system to be developed.**

## **a. Purpose**

**The purpose of Software Requirements Specification document is to provide the detailed overview that describes the hardware and software components required to develop “GCIT Enrollment Number Generator” android application.**

**AIMS:** To develop an application for GCIT students and staffs to generate the random enrollment number of the students along with their name.

## **OBJECTIVES :**

The specific objective of this project are:

1. To build android application that will be used by almost all student, staffs of Gyalpozhing College of Information Technology.
2. To easily generate the random enrollment number of GCIT students.
3. To view and find out the list of students in each class with their name, categorized base on department, year and group.
4. Exclude the use of paper works.
5. Save time and reduce human interventions (**easily accessible**).
6. To provide a flexible service where the app can be used at any point of time and anywhere as the app will be offline based android application.

**b. Scope**

**This application Consist of:**

**Category**

1. IT (information Technology)
  - a. First year IT Group A
  - b. First year IT Group B
  - c. First year IT Group C
  - d. First year IT Group D
  - e. Second year IT Group A
  - f. Second year IT Group B
  
2. CS (Computer Science)
  - a) First year CS
  - b) Second year CS

**Generate**

Minimum Enrollment Number

Maximum Enrollment Number

Generate Random Enrollment Number

Regenerate Random Enrollment Number

**User Scope:**

Limited to GCIT (Gyalpozhing College of Information Technology).

## 2. Requirements

### a. Functional Requirements

Features of this application are:

1. **Category:** Allows user to view the name and enrollment number of the student categorized based on the department, year and class.
2. **Generate:** Allows user to enter the minimum and maximum enrollment number and generate random number from it.
3. **Regenerate:** Allows user to again generate the random enrollment number along with the name of a student.

### b. Non-functional requirements

Some of the non-functional requirements of our application are:

#### 1. Portability

Deals with moving the component from one environment to another.

This application is portable as this application can be used in different platforms as it will be supported and suited in all the platforms of android versions.

#### 2. Usability

This application is very easy to use as:

- a. **Learnability:** The users will be able to use this application very easily since the direction and naming conventions will be properly written in a simple language that can be understood by anyone. For now, scope is limited to the students of GCIT therefore the students will be able to use our application very easily.
- b. **Memorability:** Since our application is not complex as the user doesn't have to learn anything to use our application, the users will not face trouble when using our application after long time also.
- c. The app will work offline.
- d. The orientation of the app will be in both portrait and landscape

### **c. Software Requirements**

The technology and version to be used for developing this application are:

- A. Android studio with version:  
Version: 4.1.2  
Gradle Version: 6.5
- B. JDK 15
- C. Operating System: Ubuntu and Windows.
- D. Database: SQLite (SQLite version: 3.25.3).

### **d. Hardware Requirements**

#### **Developer requirements:**

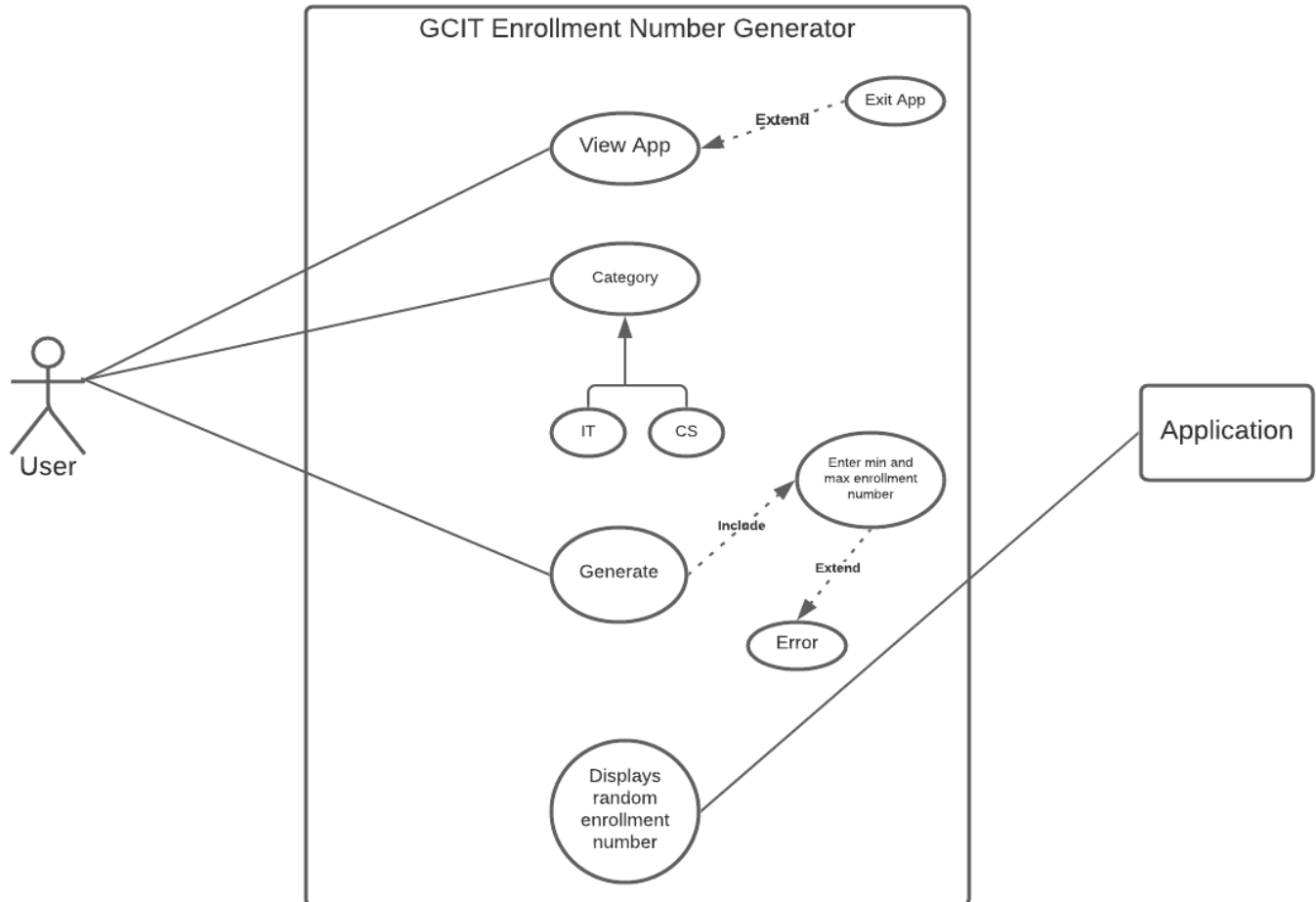
1. Laptop/Desktop (Microsoft Windows 7/8/10 (64 bits)/linux/mac)
2. 4 GB RAM minimum, 8 GB RAM recommended
3. 1280 \* 800 minimum screen resolution
4. Processor 2.00GHz \* 4
5. Android smart phone (as emulator)

#### **User requirements:**

Android smart phone.

## 4. System designs

### Use case Diagram



**Description:** A use case diagram is used to represent user's interaction with the system showing the relationship between the user and different use cases where the user is involved.

The use case diagram for GCIT Enrollment Number Generator consist of two actors:

User and Application

The functionalities performed by these two actors are:

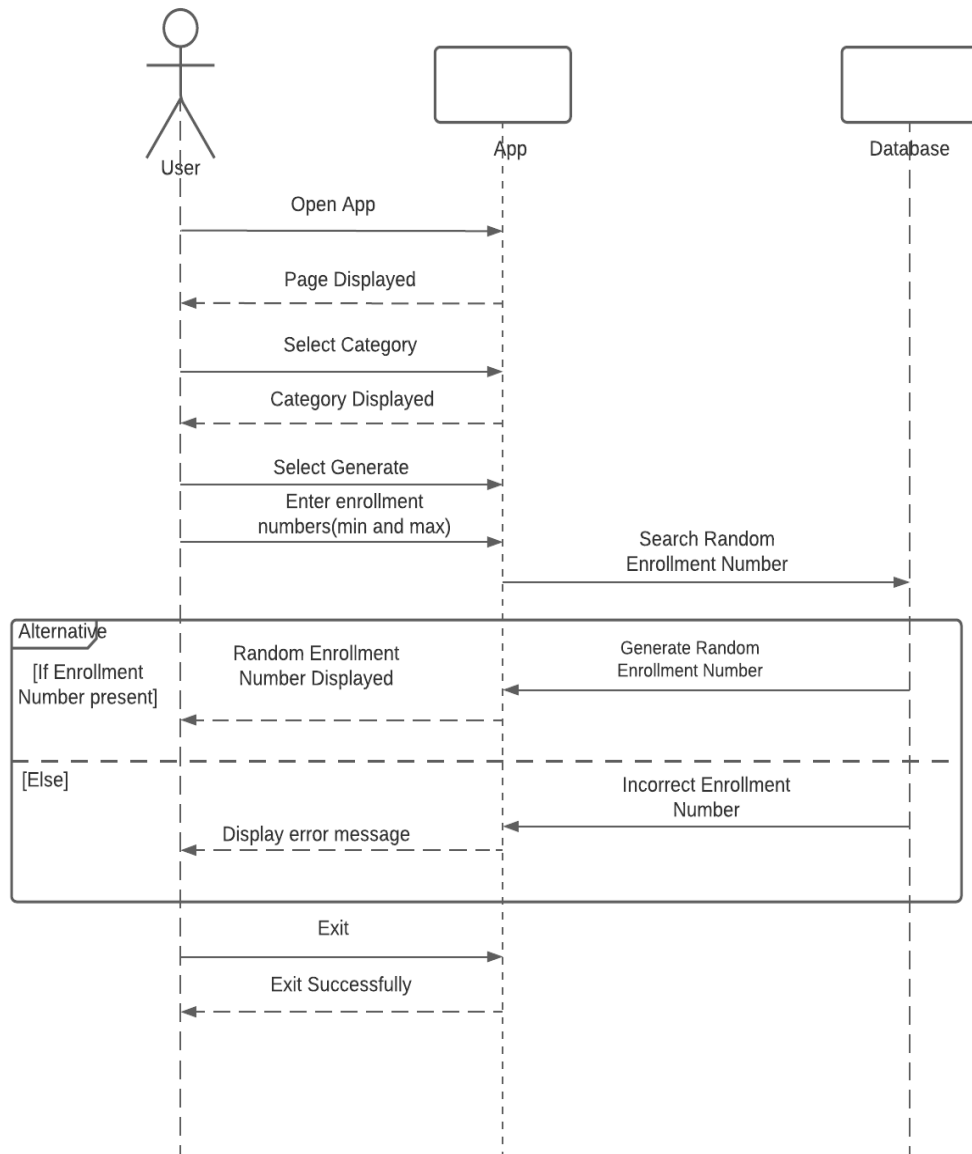
User can open app as well as exit app.

User can select from the option given in the category to view the list of students in GCIT.

User can generate the random enrollment number which includes the user to enter the minimum and maximum enrollment number.

The application will display the random enrollment number.

## Sequence Diagram

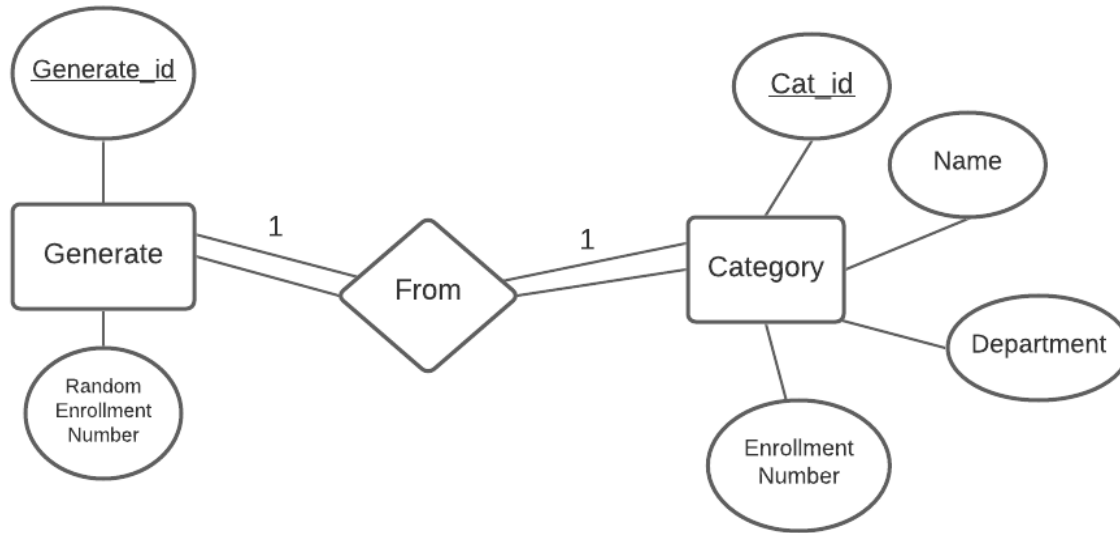


The sequence diagram shows the flow of the interaction on how operations are carried out.

In this diagram, it explains the detail logic behind the GCIT Enrollment Number Generator application. Here, the user can view the list of students at GCIT based on department, class and year with name and enrollment number displayed.

The user can generate a random enrollment number by entering the minimum and maximum enrollment number where the system will generate the random enrollment number along with the name retrieved from the database.

## ERD (Entity Relationship Diagram)



### Descriptions:

ERD also known as Entity Relationship Diagram describes the logical structure of database with the help of a diagram. It shows the relationship of entity set stored in a database.

Entity Relation Ship diagram for GCIT Enrollment Number Generator consist of two entities:

Generate: Generate\_id as primary key and attribute Random Enrollment Number.

Category: Cat\_id as Primary key along with attribute name, department and enrollment number.

### Participation Constraints:

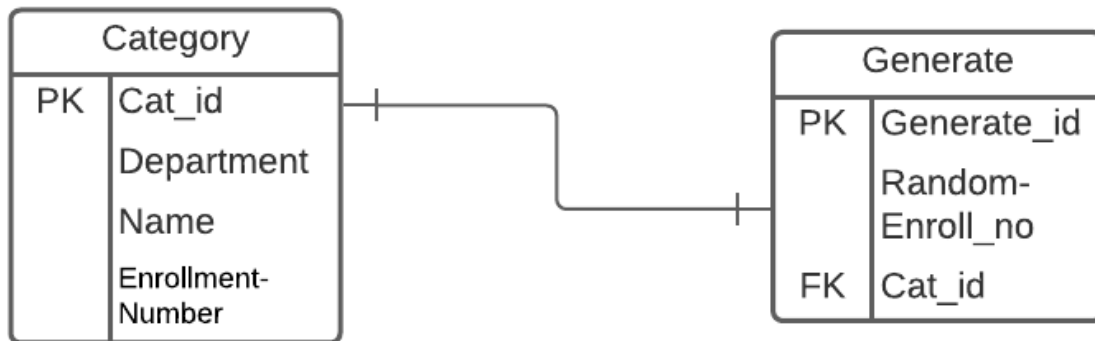
There is a total participation between generate and category entity as the random enrollment number generated will be from the list in the category or in other word, from the student's enrollment number listed in the entity category, a random enrollment number will be generated.

### Cardinality Ratio:

1 to 1 since one random enrollment number along with the name will be generated from the category. To generate another random enrollment number, have to regenerate again.



## Relational Schema Diagram



### Descriptions:

Relational Schema Diagram is a blueprint of a database that outlines the way to organize or structure the data into table.

Relational Schema Diagram for GCIT Enrollment Number Generator consist of two tables:

**Category:** This table includes four columns with attribute Cat\_id (Primary key), Department, Name and Enrollment Number.

**Generate:** This table consist of Generate\_id (Primary key), Random Enrollment Number and Cat\_id (Foreign key).

The relationship between this two table is 1 to 1 as one random enrollment number along with the student's name will be displayed on generating once.

Primary key (Cat\_id) of category is taken as the foreign key in the table Generate to create a relationship between this two tables.

