Student Management
APPLICATION PROJECT.

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A Major Project Report

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In

Stream

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23/06/2020

BONAFIDE CERTIFIACATE

Certified that this project work was carried out under my supervision

"Student Management Application Software" is the bonafide work of

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EXAMINERS

SIGNATURE:

Acknowledgement

We take this opportunity to express our deep gratitude and sincerest thank to our project mentor, Mr. ………………………..

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We will like to give a special mention to my colleagues. Last but not the least we are grateful to all the faculty member of Global College of science and Technology or their support.

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1. <u>Introduction</u>

There is very growth of university, colleges and educational intuition in India. In addition, numerous companies and industries are arriving India and India is growing the same to have better business around world. Therefore, there is huge inflow and outflow of data around the world. To store the data and process it, we need offline and online software and programming. Mainly advent of Computer, calculator and software introduced to process simple to complex calculation. However, today other than that storing small data to huge amount data in a secure locker like bank is a tough challenge. Here locker is todays Database that stores huge amount data.

My project complies with storing, retrieving data and calculation of data. Every institute manages its employees or an educational intuition manages data of students. My project based on the same concept of managing data of college and university admitted student, and payment of each students, retrieving their data and payments with calculations.

2. <u>Historical Facts</u>

<u>Hardware Basis</u>

<u>Punch Card</u> , One of the earliest methods of data storage used with early computers were punch cards. These consisted of paper and had holes that were punched by machine or by hand. The holes in predefined positions, together with the absence of holes, represented digital information to be read by computers or machines. On the usual punch card, holes can be punched in 80 columns and 12 lines**. <u>Magnetic Tape</u>**, With the introduction of magnetic tapes as a storage medium in the 1960s, it was suddenly possible to store significantly larger amounts of data. One roll of magnetic tape could store as much information as 10,000 punch cards, which is why it became extremely popular for storing data until the mid-1980s. What is more, magnetic tape was also re-writeable – a fact that revolutionized the way that data was backed up. And, with magnetic tape, storage media was also used for the first time for private purposes – many of you still know magnetic tape as a tape or compact cassette for music. **<u>Hard Drive</u>**, IBM had been developing the world's first hard disk drive (HDD) since 1953. IBM introduced it to the market in 1956. **<u>Floppy Disk</u>,** The first floppy disk was introduced in 1969 by IBM and was a read-only 8-inch disk that could store 80 kB of data (that is about 1,000 punch cards). By 1973, the storage size had increased to 256 kb of data, being rewritable as well. Later on, the floppy disk grew smaller, to a 3.5-inch disk, while at the same time allowing for more storage space, about 250 MB in the late 1990s. By being cheaper and more flexible than hard disks, floppy disks became very popular. **<u>CD/DVD</u>,** With the introduction of Compact Discs (CDs), the relatively low capacity of the floppy disk became a thing of the past. First invented by Philips and Sony together in 1979 as a digital audio disc, over the years it became a common way for home users and small businesses to do their backup once it became more affordable. **<u>Flash Drives, Data Centers, and Cloud</u>,** At the turn of the 21st century, USB sticks and external hard drives came to the market. Nowadays, you will not find USB sticks that do not hold multiple gigabytes, while for early models, it was normal to hold only a few megabytes of data. The same development goes for external hard drives,

while at the same time the costs per gigabyte became lower over the years. With data centres and the cloud, data storage has been taken to a completely new level. It will be interesting to see what the future holds. What seems to be sure is this: With the ever-increasing data every day, the sky is the limit.

<u>Software Basis:</u>

During Punch Card era, FORTRAN used to get used to enter data. While moving to floppy disk already Microsoft stepped in the race using Windows also Linux was used. Program like C, C++ and Java with HTML and Databases came to exist in last era of floppy disk with demand of high storage. Then Hard Disk drives were introduced with high-level server workstations. Small data can be stored within CD/DVD s and pen drives and carried forward. In addition, todays introduction of cloud data storage have increased to a new height. Regulatory softwares therefore used earlier to maintain Database were Microsoft office, later shifted to SQL, MYSQL and PL/SQL programmes integrated with Web Technologies.

3. <u>**Need for management software**</u>

Institution like college, schools etc. have management software to manage admission, batch process and semesters with fees. Benefits:

1) Technologies and upgraded software to benefit smooth handling Of Data.

2) Effortless project planning needed deciding its costs, scope and schedule.

3) Balanced Resource Management.

4) Improved team collaboration.

5) Student Satisfaction.

6) Proper Data Analysis.

7) Fewer Errors than Pen and paper if made by user only.

8) User-friendly.

9) Easy to use.

4. Hardware And Software specification

Maximum System Requirements

*RAM-2GB.

*HARD DISK-5GB.

*PROCESSOR-INTEL PENTIUM 4.

*KEYBOARD-104 Keys.

*Mouse.

*OS: Linux/Windows.

Software Requirements

*XAMP/WAMP for Windows for SQL and Apache connection.

*LAMP for Linux.

*Java Swing and AWT(Abstract Window Toolkit) GUI(Graphical User Interface) platform like Eclipse and NetBeans.

*JDBC(Java Database Connectivity).

5. Software Requirement Analysis

5.1 XAMP, WAMP and LAMP

5.1.1   XAMP

For windows, we have to install XAMPP .

Fig: Logo of XAMPP

After downloading XAMPP from the given link: -
https://www.apachefriends.org/download.html, we have to open XAMPP
folder from the location:-

[Drive name / folder name] such as: - [C:\xampp] and keep our files inside
htdocs named folder as it can access hypertext documents. We have to see
that XAMPP control panel is opened and APACHE and MYSQL services are
running.
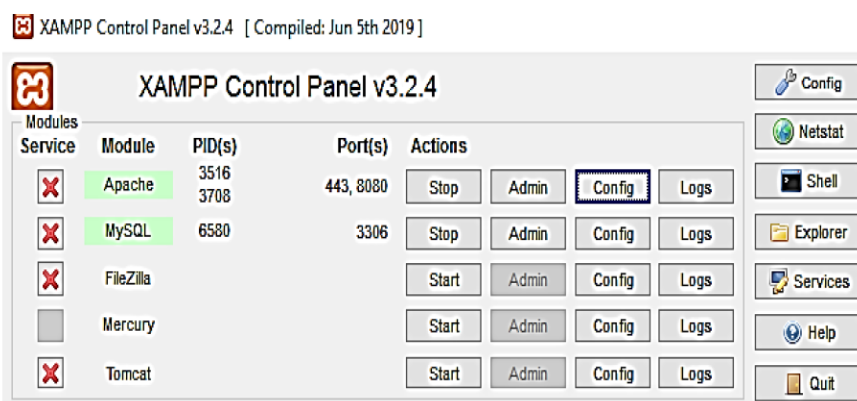
Fig: Control Panel of XAMPP

5.1.2 __WAMP__

Another software we can install and continue is WAMP, which we have used

Fig: WAMP Logo

After downloading [WAMP](https://sourceforge.net/projects/wampserver/files/) from this link
(https://sourceforge.net/projects/wampserver/files/) We have to open WAMP
folder just like XAMP and search for "www" folder from where we can keep
our files so that we can access hypertext mark-up files from browser . Here we
have to see that Apache and MYSQL is running and if we have a port problem,
same way we have to correct it.

Fig: WAMP Panel Sidebar

5.1.3 <u>Lamp for Linux</u>

Fig: LAMP logo

There are several Linux operating system such as UBUNTU, CENTOS, and FEDORA etc. Hence, we have to search online for solution of how to install lamp in Linux.

5.2 <u>Eclipse , NetBeans and JDBC connectivity</u>

Eclipse and NetBeans both provide **Java Abstract Window Toolkit** classes including java swing. Moreover, through **JDBC (Java Database Connectivity)**, we connect the database, here we used "**mysql-connector-java-5.1.49.jar**" we connect MYSQL database.

Fig: Eclipse Logo

Fig: NetBeans Logo

6   <u>Project Modules</u>

Project divided into different modules as shown below:-
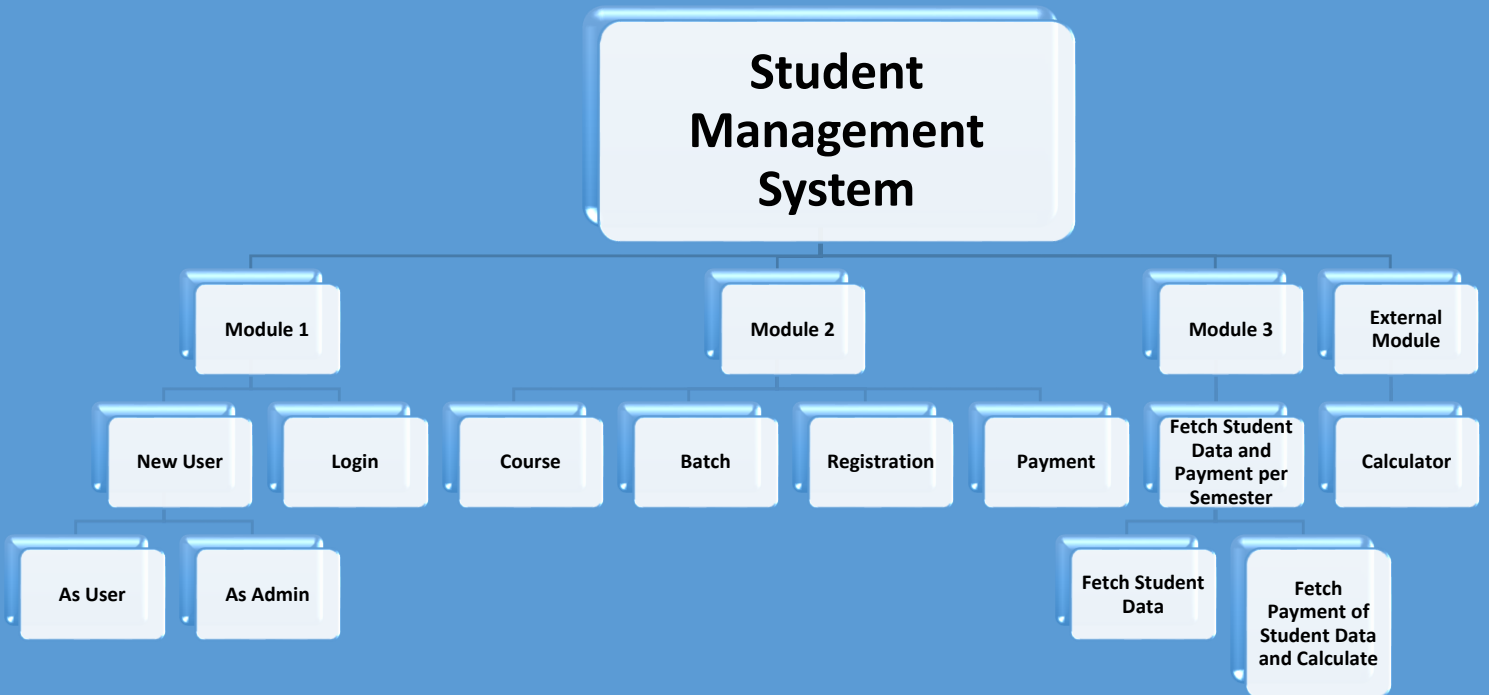
7 Design of our Project, which include Use Case, Activity, ER diagram and DFD.

7.1 Use Case Table

Fig: User Case Table.

7.2   <u>User Case Diagram</u>.

7.2.2   <u>User case diagram of Entry to Student Management Application</u>
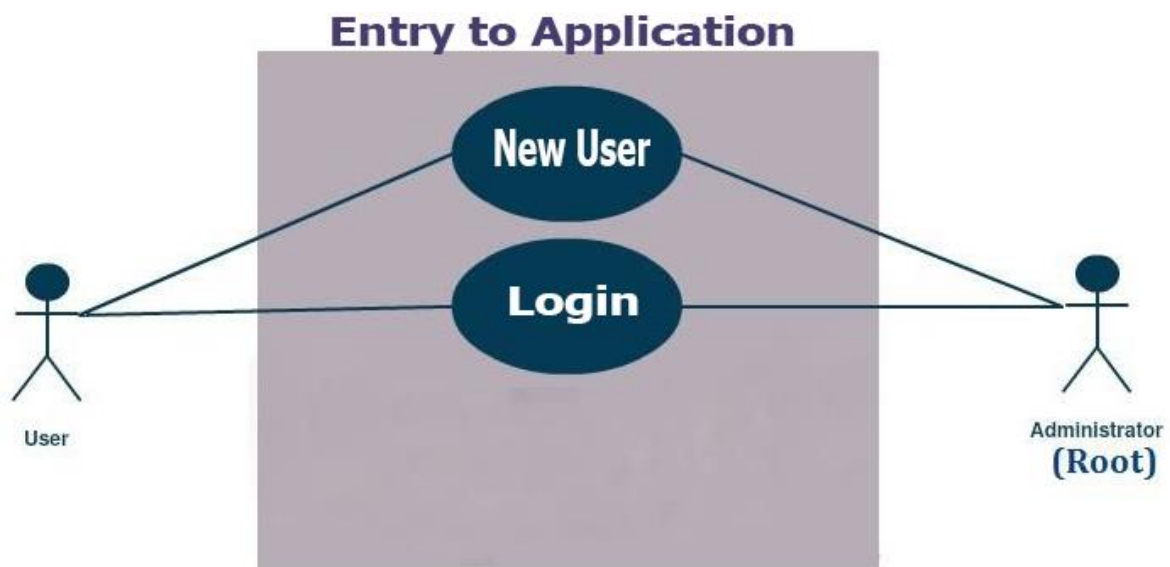
Fig: User case diagram of Entry to Student Management Application

7.2.3 User case diagram of Entry of Data of Students in Student Management Application
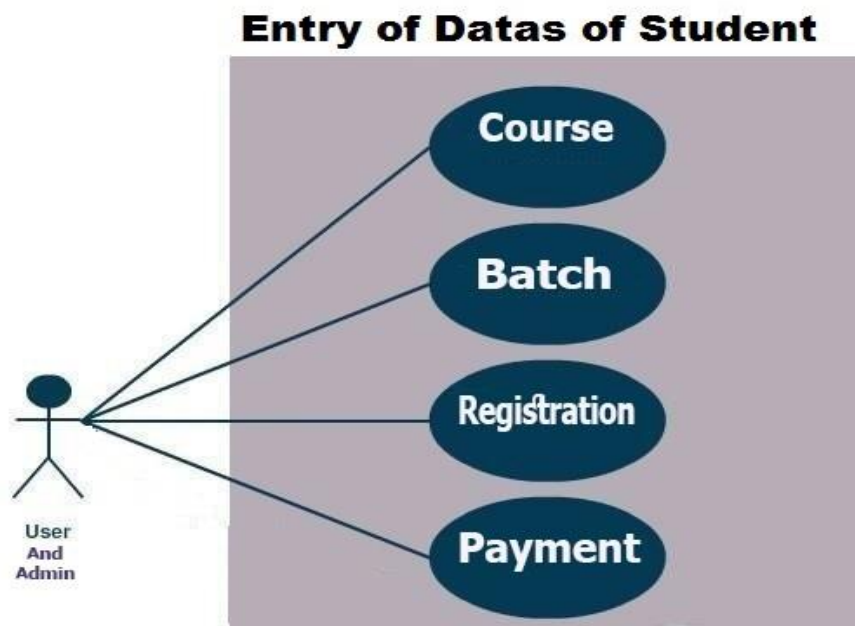
Fig: User case diagram of Entry of Data to Student Management Application

7.2.4 User case diagram of fetching data of Students.
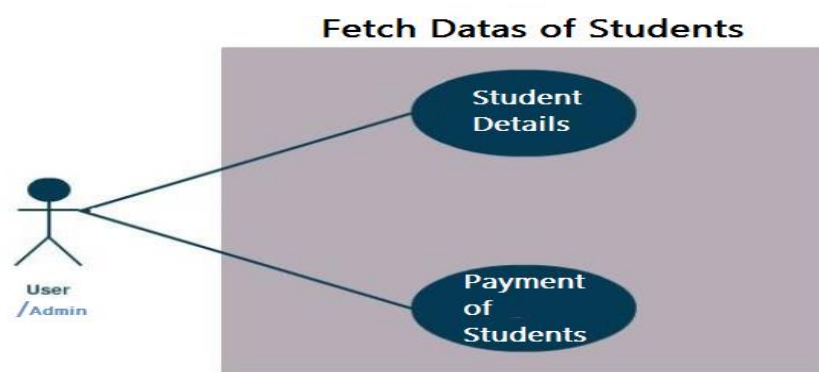
Figure : Fetch Datas of Students

7.2.5   User Case diagram of Calculation
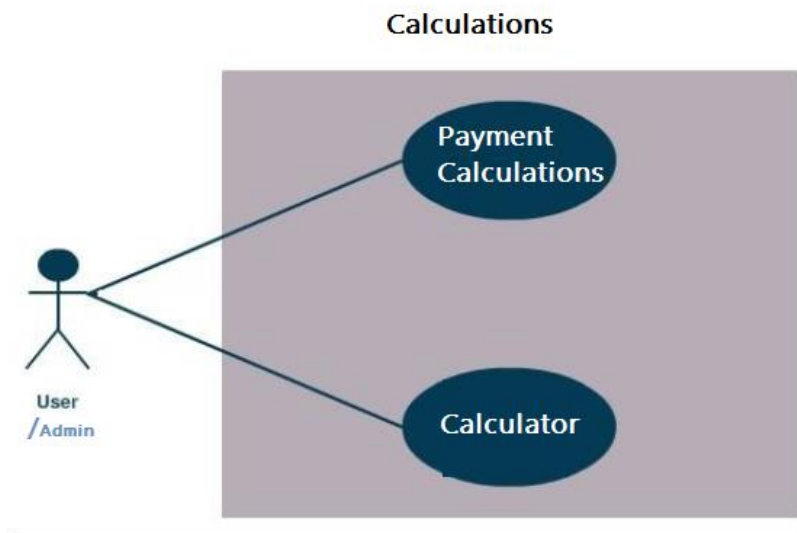
Calculations

Figure   :   Calculations

7.2.6   User Case Diagram of Maintenance
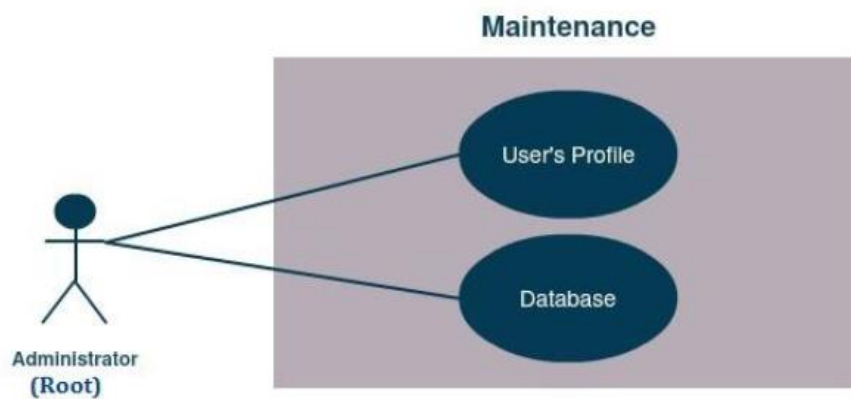
Maintenance

Figure   : Use Case Diagram of Maintenance

8   Activity Diagram

8.1   Activity Diagram of Student Management Software
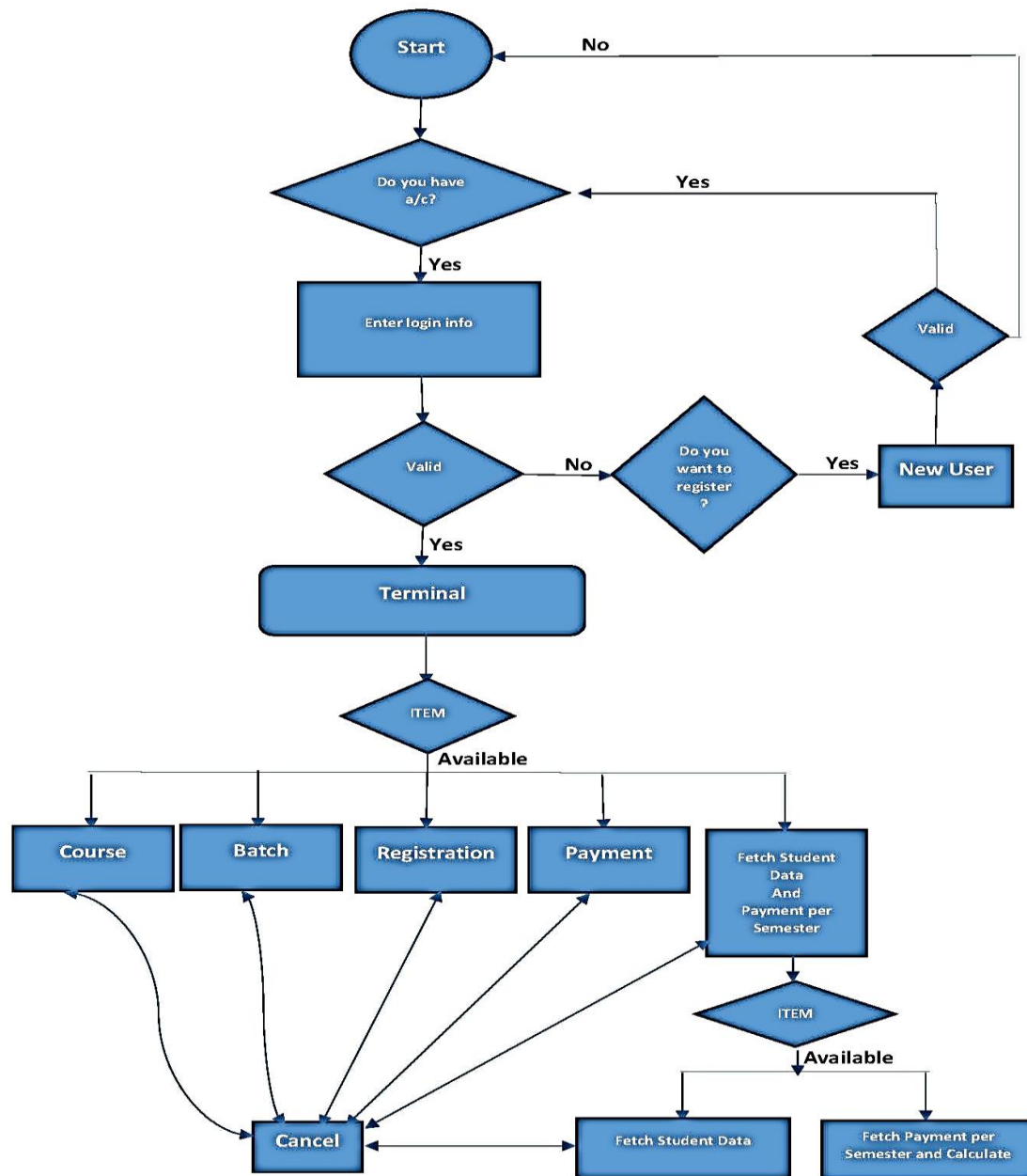
Fig: Activity Diagram of Student Management Software

8.2   Activity Diagram of Maintenance
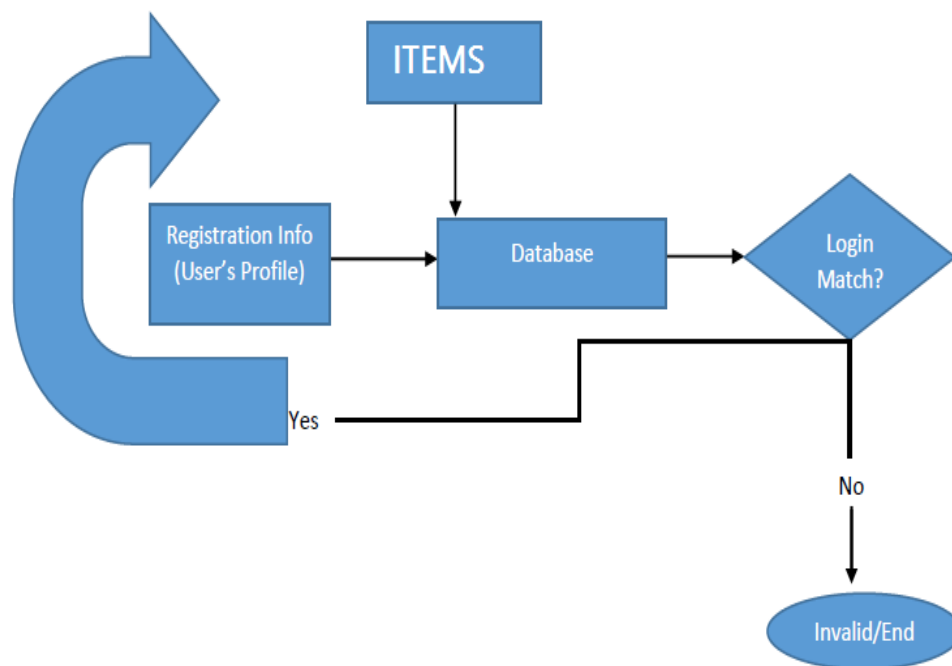
Fig: Activity Diagram of Maintenance

9   <u>Data Flow Diagram</u>
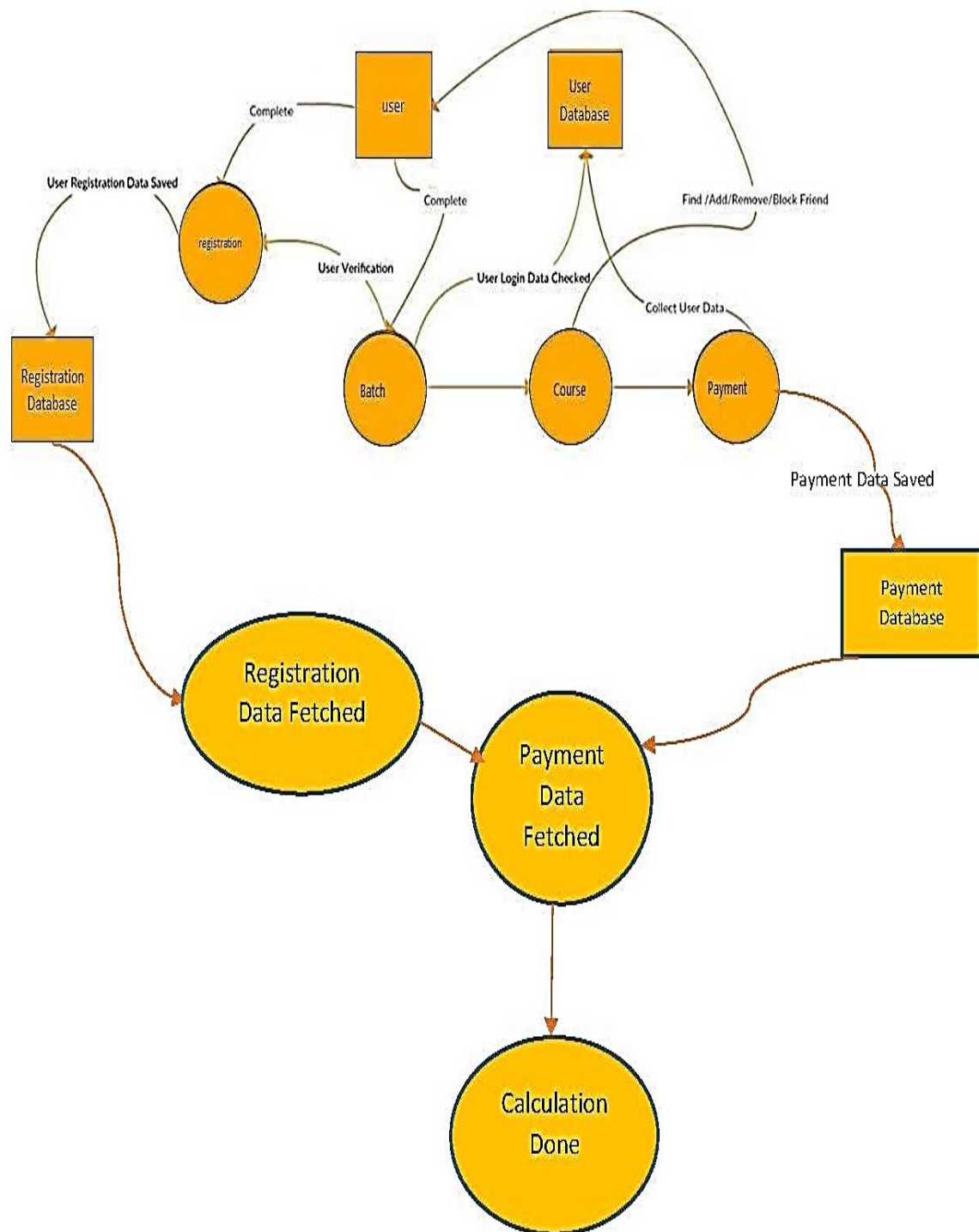
Fig: Data Flow Diagram

10   Methodology

10.1   **New User:** This maintains the Username, Password, Confirm password, User Type: User and Admin. It have add and cancel button. Add button helps to add details in the database. Cancel button to close the window of New User.

10.2   **Log In:** This maintain Username and Password. If a user is new to the management software and register themselves by clicking new user. Through matching credential of login and password, one can log in and see the terminal consisting of items: Course, Batch, Registration, Payment and Fetch Student Data and Payment per Semester. Cancel button to close the terminal.

10.3   **Course:**   Course is there to add the course names available in colleges given by University. It have course name and duration.

10.4   **Batch:** Batch is the tab, which is made to identify the year and its relative batch in the college. It has Batch name, Year and Cancel button.

10.5   **Registration**: It add the newly registered data of students. It has Roll No. , First name, Middle name, Last name, Mobile No. , Registration id, Semester, Gender, Course, Batch, Telephone, Birth Date, Address. Save button will save data to database. Cancel will close the window.

10.6 **Payment:** Just type the roll no. and click on the fetch button to get the data of student according to roll no. from the registration database. Then put Semester and amount and save it to database. Cancel is to close the window.

10.7 **Fetch Student Data and Payment per Semester :**

10.7.a **Fetch Student Data:** Just click on fetch, to get all the fields of the student's data entered during registration.

10.7.b **Payment Data Fetch and Calculate:**
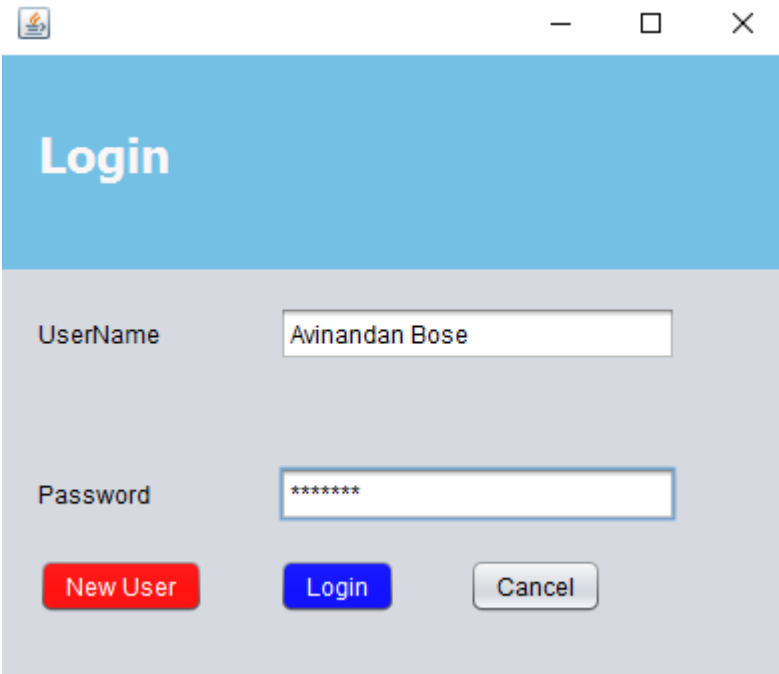
Just type the roll no. and click on fetch to get all the Semester payment and it will automatically calculate the total of all semesters and present it to the window. Clear the field button will clear all the fields.

10.8 **Calculator (external):** The calculator is used to calculate the semester total if needed. However, its function is not limited to only calculating total but it has numerous function too of a simple calculator.

11   <u>User Manual :</u>

11.1   <u>Process</u>

11.2   <u>Login: -</u> At first when we open the Application, we have this window, to enter the User name and Password, to have our next window. If we are new user, then we have to go to new user option to register ourselves as new user.

Fig: Log In

11.3   New User: This window is for registering the new user and declaring its user type. It has name and password, through which we can log in.

Fig: New User

11.4   <u>Course:</u>   It has course name and duration. The add button which will add course name and duration to database. Cancel will close the window.
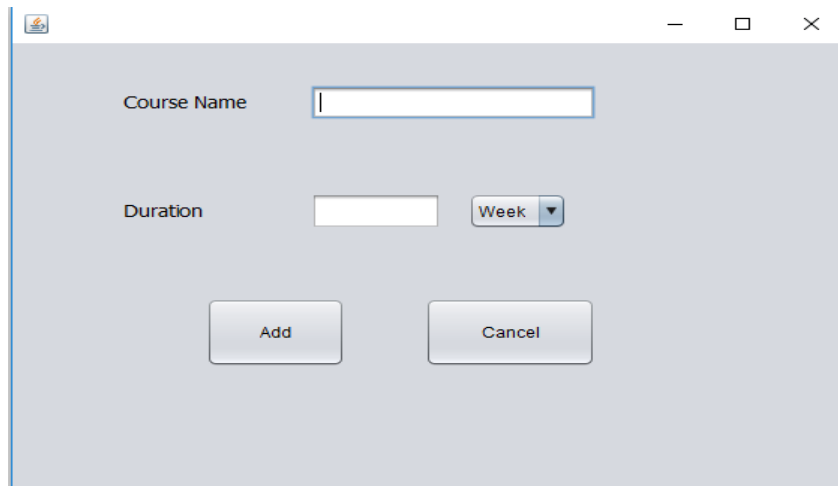
Fig: Course

11.5   <u>Batch:</u> It has batch name and duration. Add button will add both to the database while cancel will close the window.
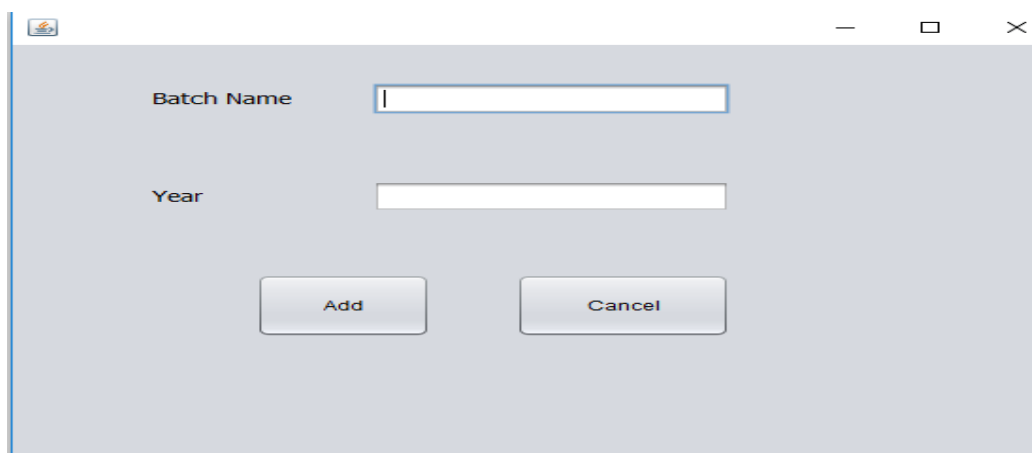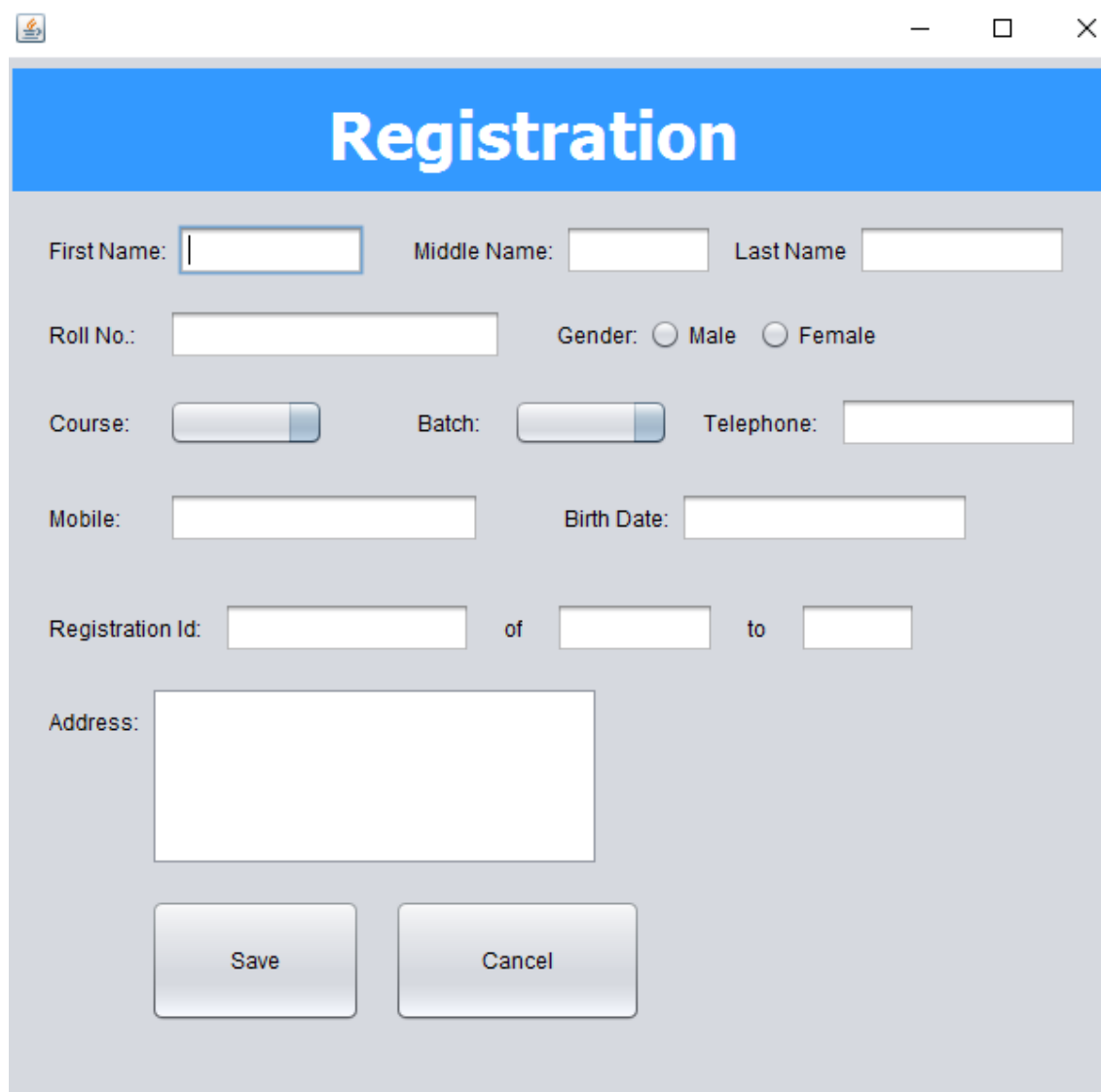
Fig: Batch

11.6　　**Registration :-** Registration have First , Middle and Last Name with Roll No, Gender choice – male and female , course, batch, telephone , mobile, birth date, registration id and address. Save will save all data to registration database. Cancel will close the window.

Fig: Registration.

11.7   Payment: Just type the roll no. and click on the fetch button to get the data of student according to roll no. from the registration database. Then put Semester and amount and save it to database. Cancel is to close the window.

Fig: Payment

11.8 Fetch Student Data and Payment per Semester:

11.8.a Fetch Student Data: Just click on fetch, to get all the fields of the student's data entered during registration.
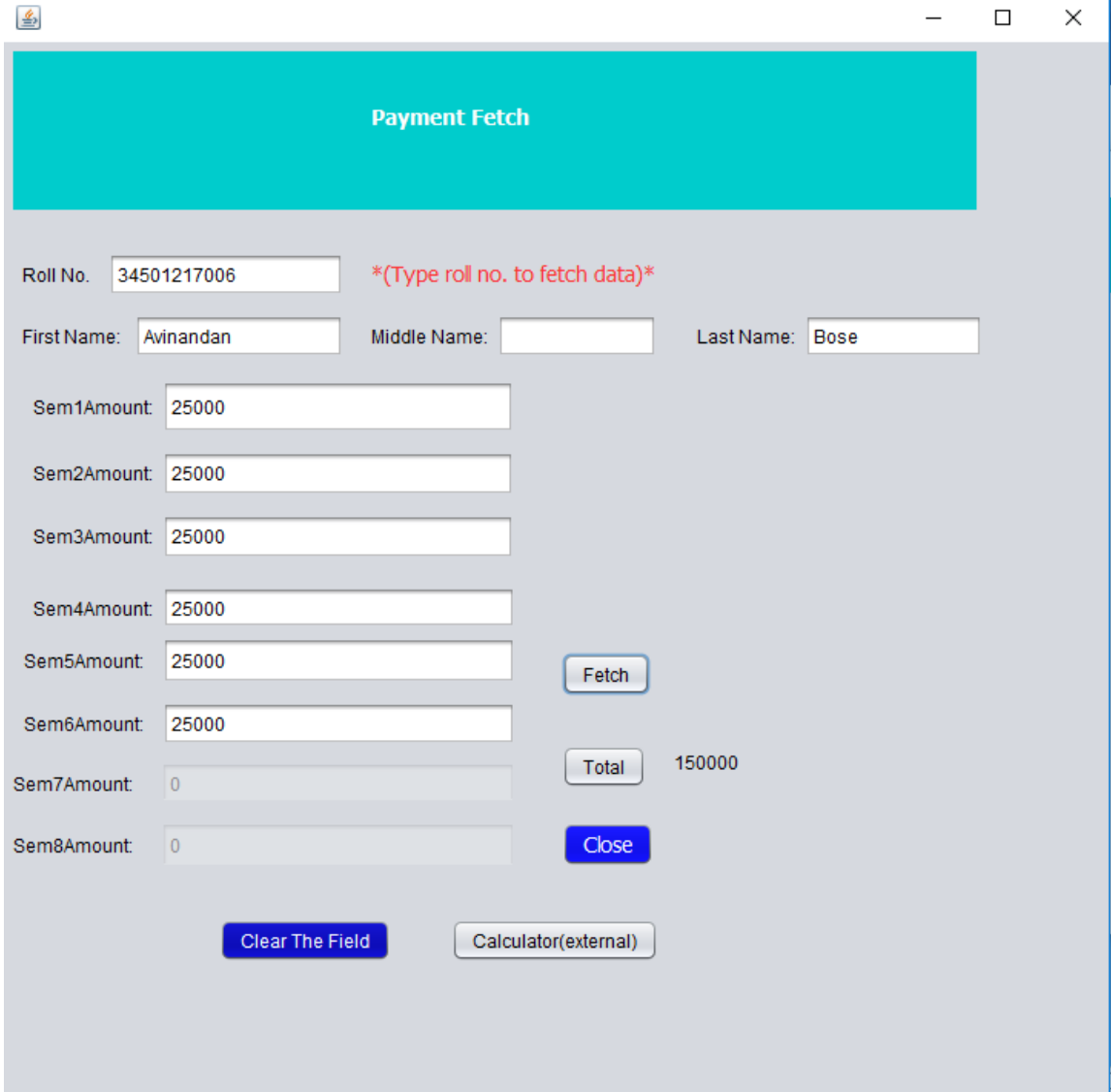
Fig: Fetch Student Data

11.8.b __Payment Data Fetch:__ Just type the roll no. and click on fetch to get all the Semester payment and it will automatically calculate the total of all semesters and present it to the window. Clear the field button will clear all the fields.

Fig: Payment Data Fetch

11.9   Calculator (External): The calculator is used to calculate the semester total if needed. However, its function is not limited to only calculating total but it has numerous function too of a simple calculator.
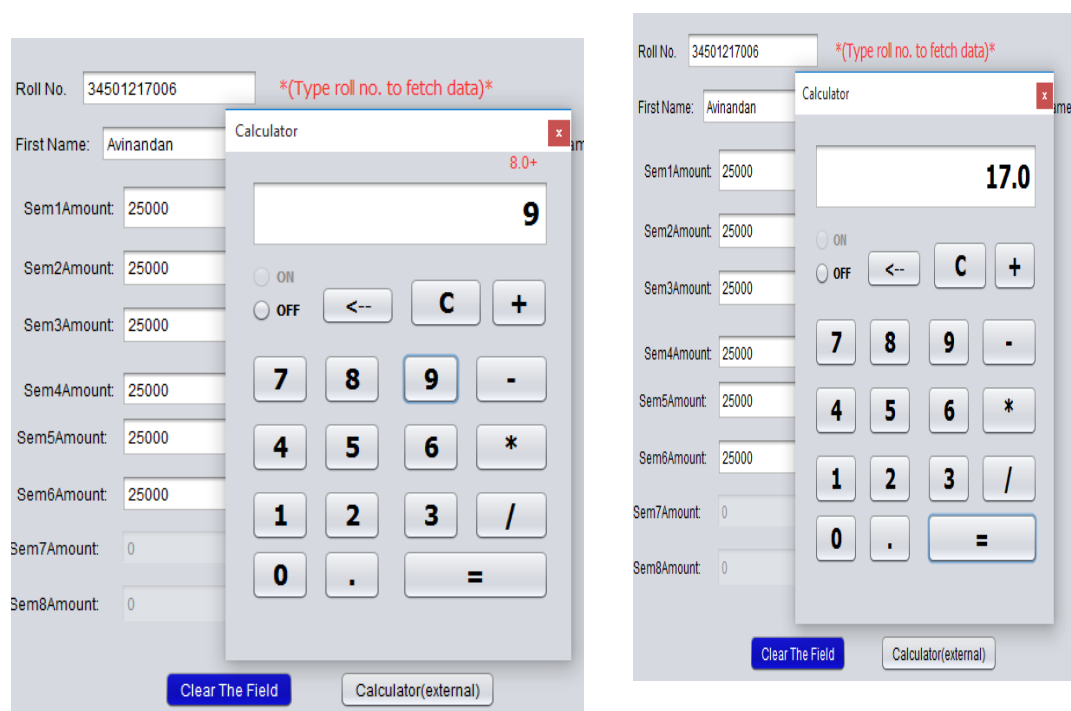

Fig: Calculator

20. <u>References for the project</u>:

1. https://www.youtube.com/
2. Core And Advanced Java BlackBook, published by Dreamtech
3. The Complete Reference Java, written by Patrick Naughton and Herbert Schildt.
4. JDBC 4.2, Servlet 3.1 and JSP 2.3, Black Book.
5. Java Server Programming (JEE7), Black Book, published by Dreamtech.
6. https://docs.oracle.com/en/java/

The End of the Documentation