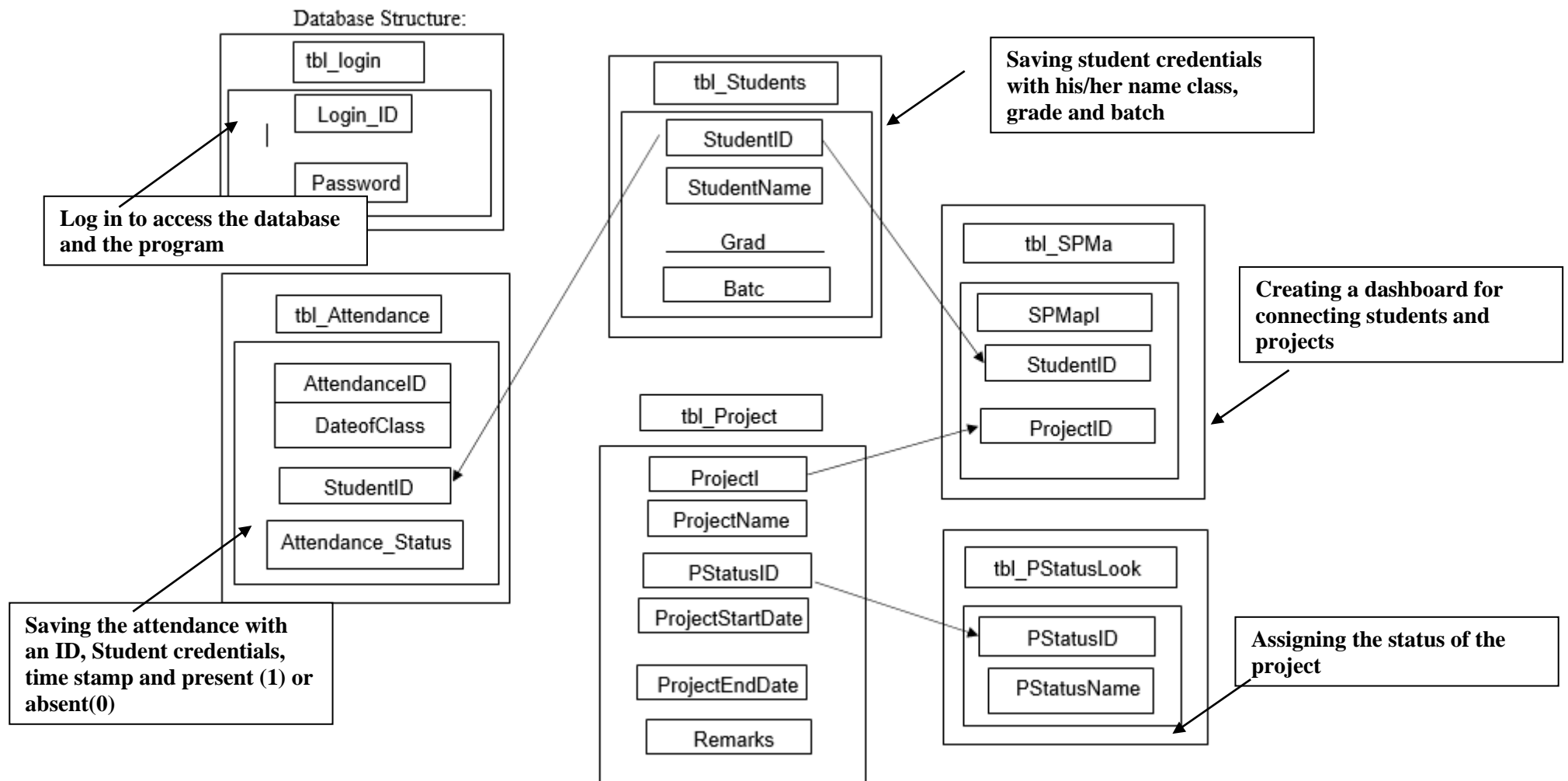


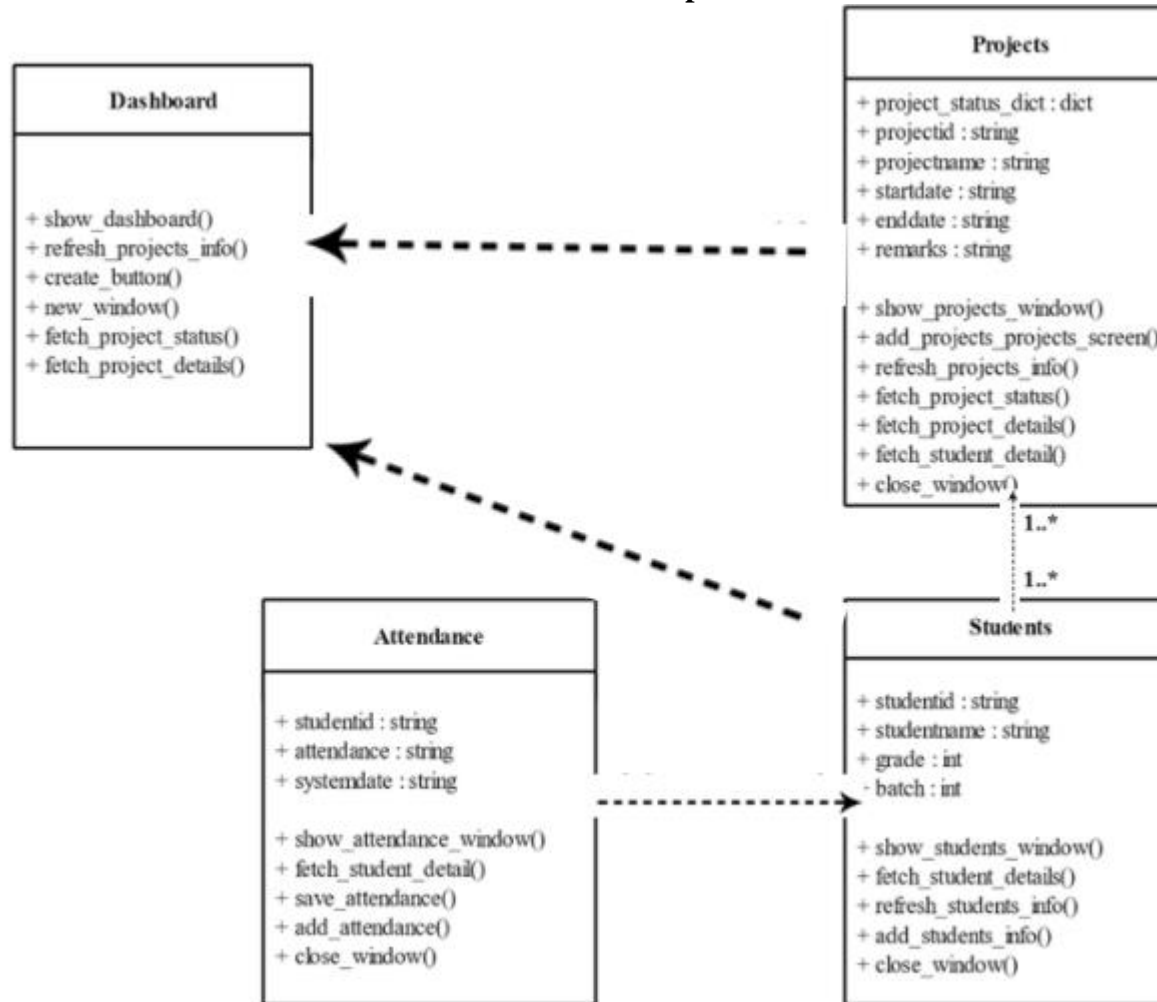
## Criteria B

### Database

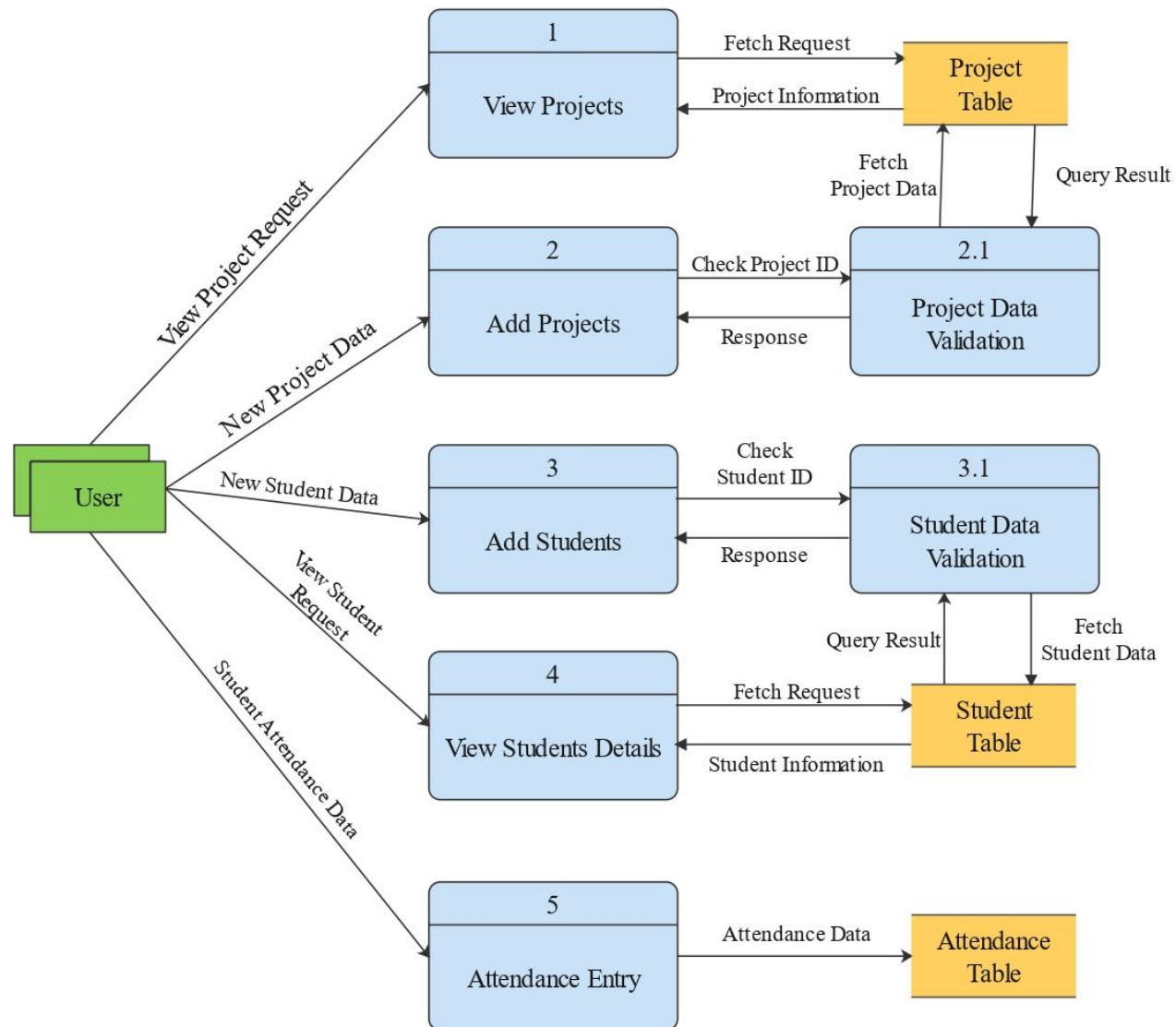
Structure : -



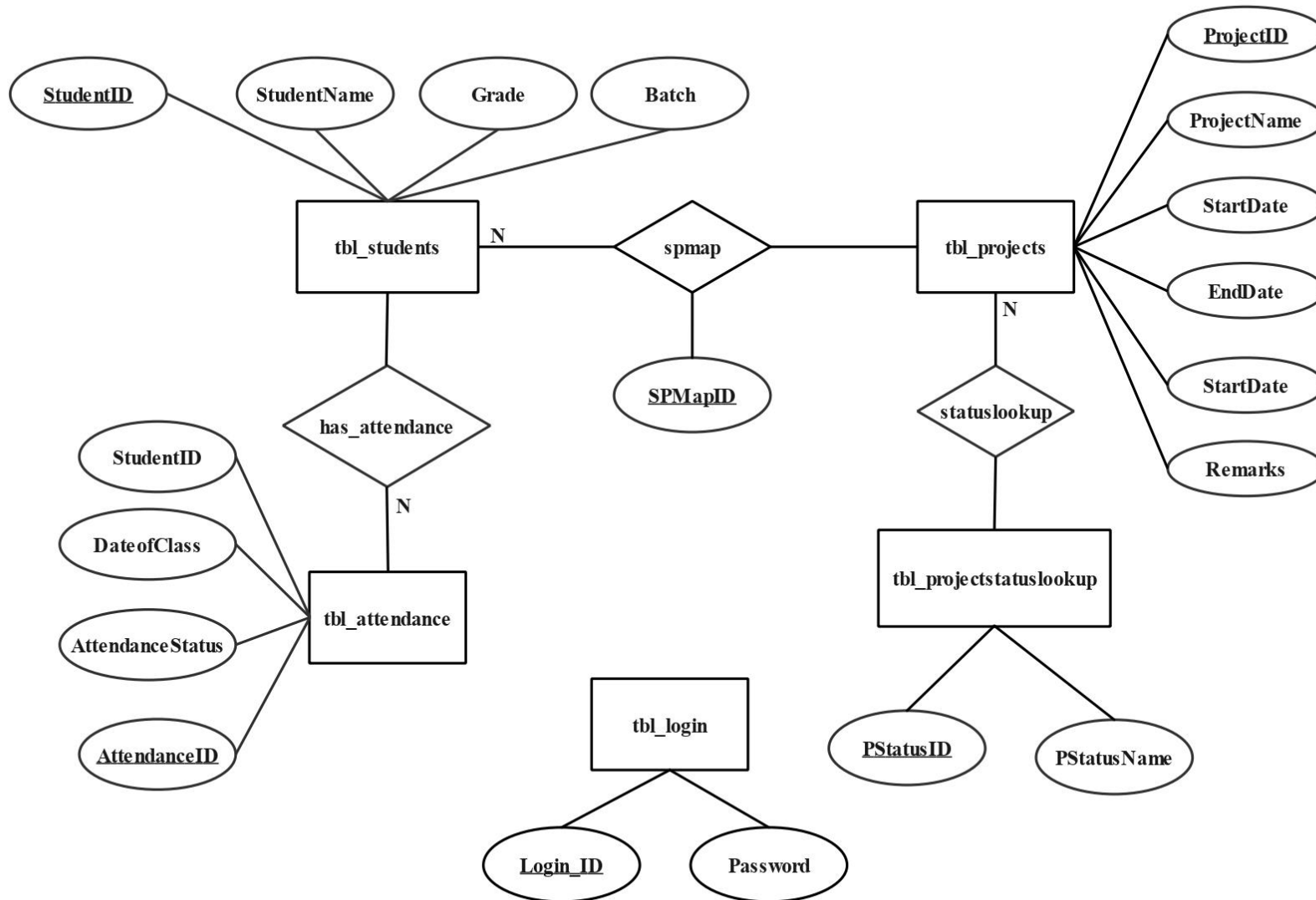
**UML diagram**  
**With the arrow of dependencies**



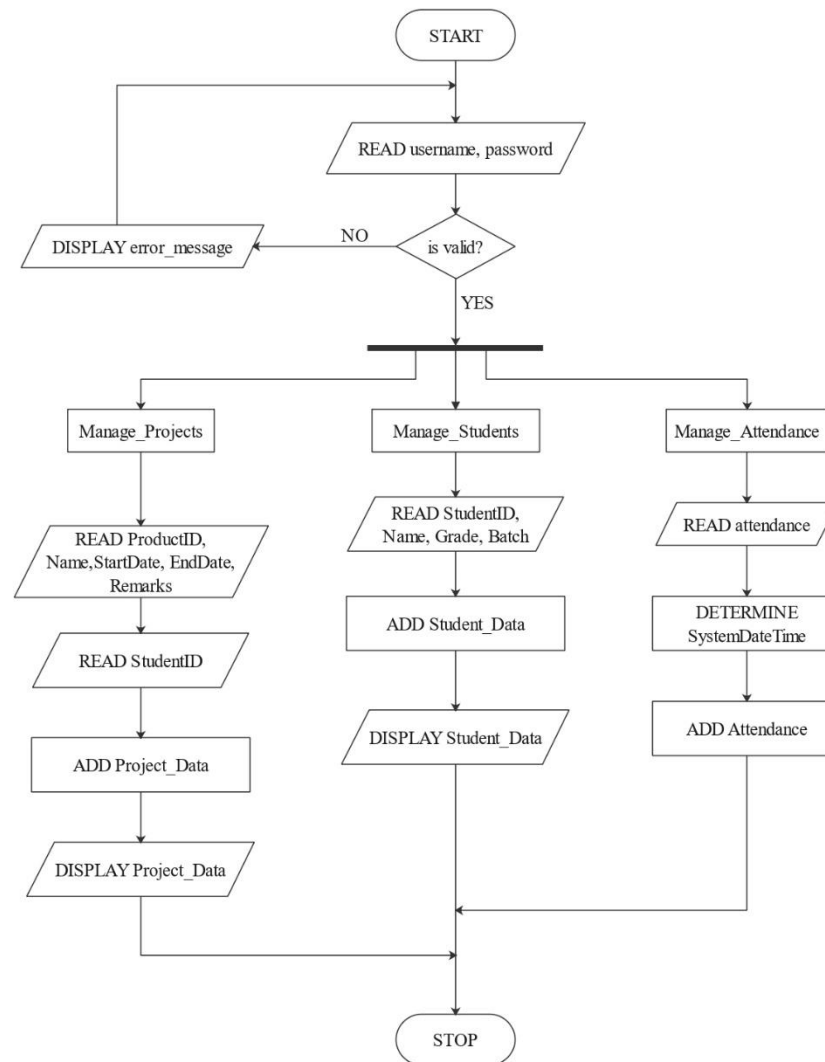
**Program Design**



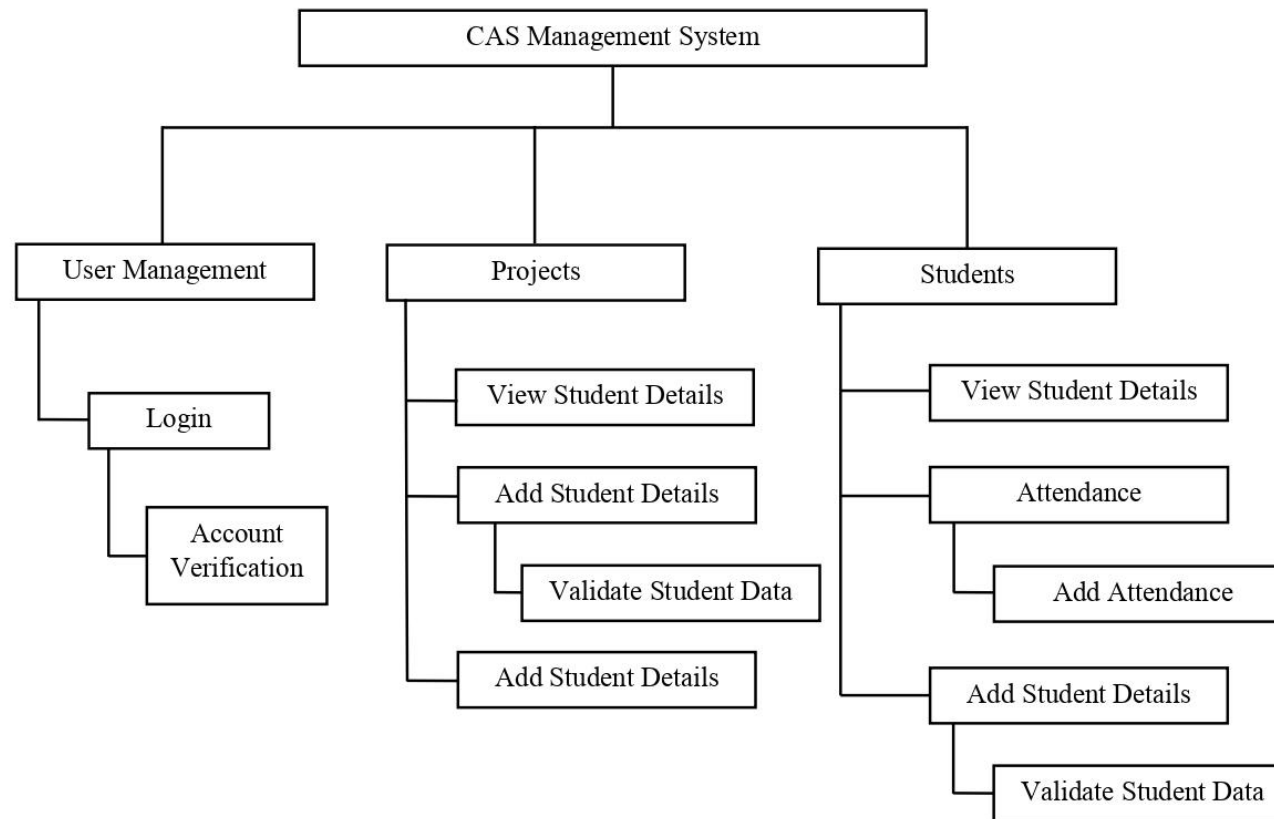
## Class diagram



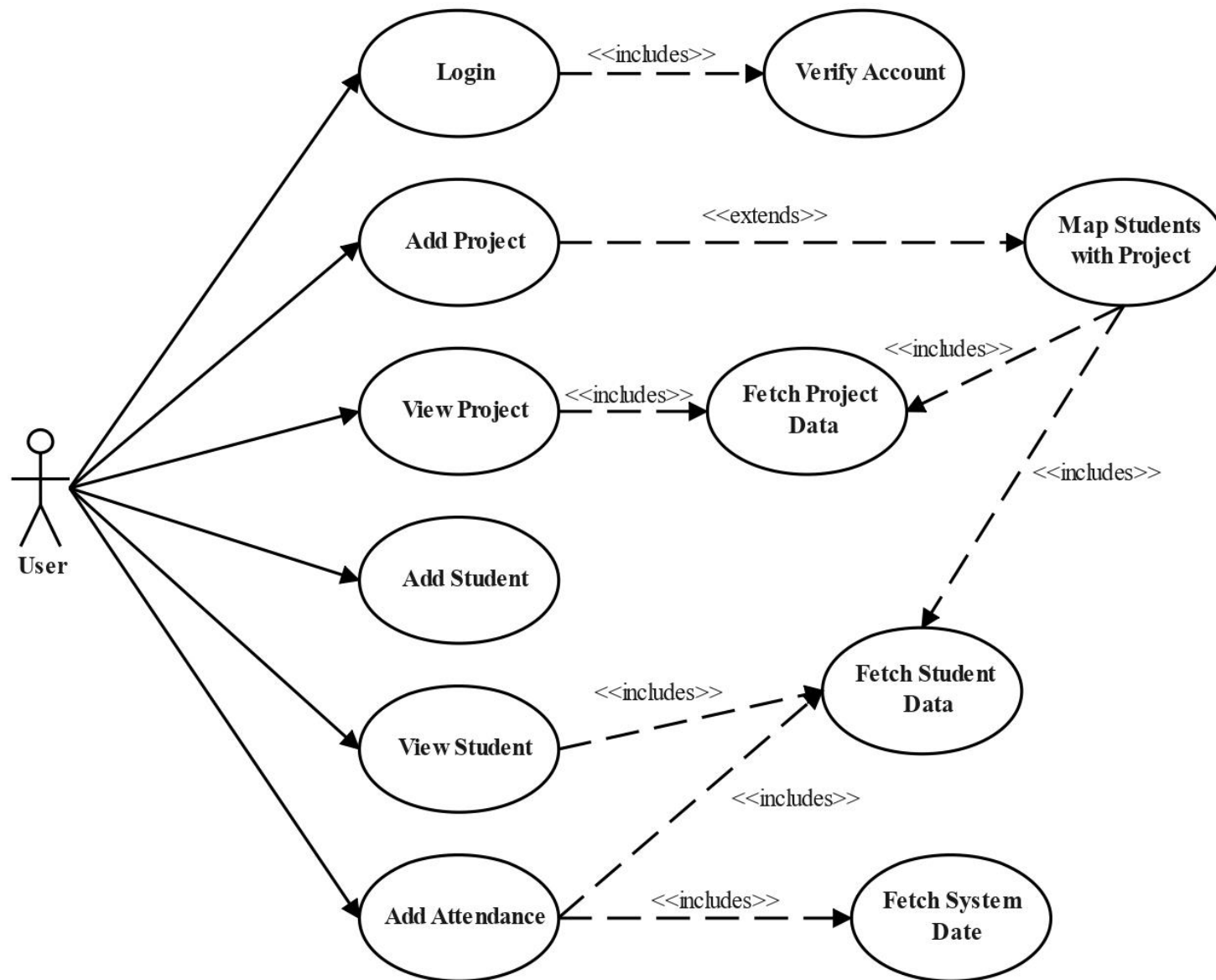
## Data Flow Diagram



## Project Structure



### Flow Chart Diagram



## Database Design:

### 1. Login Table

The Login table will be used to store the login credential, i.e., the login id and the password for the same login id of the client

Table Name: tbl\_Login

Field Name	Data Type	Description
ID	AutoNumber	Will generate an automatic id for the login credentials.
Login_ID	Short Text	Username credential of the client.
Password	Short Text	Password credential for the username of the client.

### 2. Students Table

The Students table will be used to store essential information related to the students and will then be linked to the other tables to pass the details on them to present the client with required data.

Table Name: tbl\_Students

Field Name	Data Type	Description
Student_ID	AutoNumber	To store a unique student ID for each student.
StudentName	Short Text	To store the names of the students entered.
Grade	Text	To store the grade(class) for the student.
Batch	Short Text	To store which batch the student belongs to



### 3. Project List

Table Name: tbl\_Projects

Field Name	Data Type	Description
ProjectID	AutoNumber	To generate an automatic project id
ProjectName	Short Text	To store the name of the project
ProjectStartDate	Short Text	To store the date, the exam project started.
ProjectEndDate	Short Text	To store the date, the exam project completed.
PStatusID	Number	To store the status for the project.
Remarks	Number	To store the remarks for the project.

### 4. Project Student Mapping Table

Name: tbl\_SPMMap

Field Name	Data Type	Description
SPMapID	AutoNumber	To generate an automatic id number for student-project
StudentID	Number	Student ID – Foreign Key
ProjectID	Number	ProjectID –Foreign Key

### 5. Project Status LookUp Table

Name: tbl\_PStatusLookUp

Field Name	Data Type	Description
PStatusID	AutoNumber	To generate automatic id number for the project status.
PStatusName	Text	To store the name of the status.

## 6. Student Attendance Table

Name: tbl\_Attendance

Field Name	Data Type	Description
AttendanceID	AutoNumber	To generate an automatic id number for the attendance muster
DateOfClass	Date	To store the current date
StudentID	Number	Student ID – Foreign Key
Attendance_Status	Boolean	0 for present; 1 for Absent

### **Query:**

**The query will fetch data from the respective columns to create the required view:**

QueryName: qry\_ProjectList

Field Name	Table Name
ProjectID	tbl_Projects
ProjectName	tbl_Projects
PStatusID	tbl_Projects
ProjectStartDate	tbl_Projects
ProjectEndDate	tbl_Projects
PStatusID	tbl_PStatusLookUp
PStatusName	tbl_PStatusLookUp
StudentID	tbl_SPMMap
StudentID	tbl_Students
ProjectID	tbl_SPMMap
Remarks	tbl_Projects

QueryName: Qry\_StudentList

Field Name	Table Name
StudentID	tbl_Students
StudentName	tbl_Students
Grade	tbl_Students
Batch	tbl_Students

QueryName: qry\_Attendance

Field Name	Table Name
AttendanceID	tbl_Attendance
StudentID	tbl_Students
StudentName	tbl_Students
Grade	tbl_Students
Batch	tbl_Students
DateofClass	tbl_Attendance
Attendance_Status	tbl_Attendance
StudentID	tbl_Attendance

## Program Interface Design

### Screen 1: Login Screen

The image shows a wireframe of a login screen for a 'CAS Management System'. The window has a title bar with the system name and standard minimize, maximize, and close buttons. The main content area has a dark header with the word 'Login'. Below this, there are three main sections: a label 'Enter the User Name' above a text input field, a label 'Enter the password' above a masked password input field, and a 'Login' button at the bottom. Three callout boxes on the right side provide descriptions for these elements: 'Input Textbox for Username' points to the username field, 'Masked Input Textbox for Password' points to the password field, and a larger box explains that clicking the 'Login' button will validate the credentials and lead to a dashboard.

**CAS Management System**

**Login**

**Enter the User Name**

Input Textbox for Username

**Enter the password**

Masked Input Textbox for Password

**Login**

By clicking on “Login” Button, Username and Password will be validated. Upon Successful Login Process, Screen 2- Dashboard will be opened

## Screen 2: Dashboard

Dashboard - CAS Management System

**Dashboard**  
Project List

Tree view Listbox for displaying project details

ProjectID	Project Name	Start Date	End Date	Remarks	Status	StudentID	SName	Grade	Batch
1	IoT Projects	11	11		To Confirm	1	John	2020	11
1	IoT Projects	11	11		To Confirm	3	Smith Johnson	2020	15
2	Restful API	11	11	Requires JAVA	In Progress	1	John	2020	11

Buttons for navigating to other windows

Screen 3-Projects Window will be opened

Screen 4-Students Window will be opened

Screen 5 - Attendance Entry Window will be opened

To refresh the project table information

Text Labels for displaying tips to users

Manage Projects <== Click this button to open Manage Projects Screen

Manage Students <== Click this button to open Manage Students Screen

Manage Attendance <== Click this button to open Manage Attendance Screen

Refresh List <== Click this button to refresh Project List

### Screen 3: Project Window

Manage Projects - CAS Management System

Treeview Listbox for displaying project details

Buttons for refreshing project treeview data

Refresh List

ProjectID	Project Name	Start Date	End Date	Remarks	Status	StudentID	SName	Grade	Batch
1	IoT Projects	11	11		To Confirm	1	John	2020	11
1	IoT Projects	11	11		To Confirm	3	Smith Johnson	2020	15
2	Restful API	11	11	Requires JAVA API Pro	In Progress	1	John	2020	11

Add project details

Detail of a new project

Project ID Project Name Status Start Date End Date Student ID Remarks

1 - To Confirm

Add (+)

To save new project information

View Students Information

Screen 4-Students Window will be

Close

#### Screen 4: Students Window

Treeview Listbox for displaying student details

Buttons for refreshing student treeview data

Students - CAS Management System

### Manage Students

Refresh List

StudentID	Student Name	Batch	Grade
1	John	2020	11
2	Clara	2021	21
3	Smith Johnson	2020	15
4	Peter	2020	11

Add New Student

Student ID

Student Name

Batch

Grade

Add (+)

Close

Detail of a new student to be entered here

To save new student information

## Screen 5: Attendance Entry Window

The screenshot shows a window titled "Attendance Entry - CAS Management System" with a close button (X) in the top right corner. Below the title bar, the main heading is "Students Attendance Entry", followed by the date and time "Fri 04-Sep-2020 11:00:53 AM". The window contains two input fields: "Student ID :" and "Attendance :". Below these fields are two buttons: "Save Attendance" and "Close".

Annotations with arrows pointing to specific elements:

- Arrow pointing to the close button (X): Attendance entry will be done along with date and time which is captured automatically from system time.
- Arrow pointing to the "Student ID :" field: To select an existing student for attendance entry.
- Arrow pointing to the "Attendance :" field: Attendance Status  
1. Present  
2. Absent
- Arrow pointing to the "Save Attendance" button: To save student's attendance information



## TEST PLAN

S.NO	TEST TYPE	NATURE OF TEST	EXAMPLE	OUTCOME
1	Upon starting of the program, Check that user is a legitimate user.	To check whether the user is a legitimate user. Upon successful entry of valid username and password, user should be allowed to access the dashboard and use all options.	User enter “test” as username and “test” for password	The entered inputs are valid and dashboard window was shown to user
2			User enter “admin” as username and “12345” for password. Note: User entered values which is not in the database	An error message was shown to the user
3	Check whether the program is allowed to access the data store and able to retrieve project data.	Upon opening the Dashboard window, list of projects should be displayed to the user.	-	Details of all stored projects are shown in project table
4	Check whether other classes can be instantiated from dashboard on user request	Upon user option, the system should open the corresponding window.	User clicks on “Manage Projects” button.	Project Window is shown
5	Check that program is able to fetch the latest updated project information from data store.	If any changes made on data store, should be reflected on the project table upon user action. Upon user clicks on “refresh” option, the system should the updated project information.	User clicks on “Refresh project” button  Note: System should fetch the project current details from data store and update the project table.	Project Treeview Table is updated with new data and shown to user
6	Check that new project data can be added	If user wants to add any new project, then system should be able to insert new information in the data store.	User enters project information such as <i>Project ID, Project Name, Start Date, End Date, Remarks, Student ID.</i>	Project Insertion Success
7	Check that new student data can be added	If user wants to add a student, then system should be able to insert new information in the data store.	User enters <i>Student ID, Name, Grade and Batch</i>	Student Insertion Success
8	Check that student can be mapped with existing project	If user wants to assign project to students, then system should be able to do so.	User enters project information such as <i>Project ID, Project Name, Start Date, End Date, Remarks, Student ID.</i>	Student – Project Mapping is done
9	Check the students information is	If the user wants to browse the students	User clicks on “View Student	Student Windows is

	accessible for student-project mapping	data before assigning project to students, the system should be able to open the students window	<i>Information</i> ” button in “ <i>Projects</i> ” Window.	opened for viewing
10	Check that program is able to access system date and time	For students attendance entry, system date and time needs to be fetched. All attendance entry will be performed along with current date and time.	User opens the “ <i>Attendance Entry</i> ” Window.  Note: Upon opening the attendance entry window, the program should read the system date & time and display it.	Current Date and Time is displayed on top of the attendance window
11	Check that students attendance can be added	Upon clicking on “ <i>Manage Attendance</i> ” button in Project window, the system should open the “ <i>Attendance Entry</i> ” window where user can give attendance to students.	User selects the <i>student ID</i> and <i>attendance status</i>  Note: Attendance status will be like <i>present</i> or <i>absent</i> .	The entered information is stored in the attendance table and success message shown to user.
12	Check that system do not accept duplicate project id	Project ID should be a unique value. System should not accept duplicate entries.	User enters project information such as duplicate Project ID, Project Name, Start Date, End Date, Remarks, Student ID.	System throws an error insertion error and do not add the entered data.
13	Check that system do not accept duplicate student id	Student ID should be a unique value. System should not accept duplicate entries.	User enters <i>duplicate Student ID, Name, Grade and Batch</i>	System throws an error insertion error and do not add the entered data.

### System Requirements:

The hardware and software requirements to run the following program will be as follows:

#### Hardware:

1. Minimum of 1 processor
2. The processor needs to have a minimum speed of 3GHz.
3. There need to be a minimum of 2 physical drivers present in the system
4. There needs to be a minimum of 200MB disk space and an additional 10-15% in order to store the data that will be entered in the future.

**Software:**

1. Python 3.7 IDLE
2. XAMP Server Version 5.6.40-1-VC11 - MySQL Server

**Signature of the**

**client:** Amrti Burrett

**Date:**

20-08-20