TASK SCHEDULING APPLICATION

Team No: 26

*Project Report:*

**Abstract:**

**We have developed a project on task management system to help teams to organize their tasks, deadlines, and projects effectively. The system encompasses various entities such as tasks, users, projects, deadlines, priorities, and more, to provide users with a seamless experience in managing their tasks. It also facilitates collaboration among team members and offers notification features.** The system focuses on ten entities consisting tasks, resources, and scheduling details. Individual Java classes encapsulate the functionalities of each entity, with a driver class serving as the central point for scheduling and data management.



**Introduction:**

The task management system addresses the need for a centralized platform to improve personal and team productivity. By offering features like task organization, deadline setting, priority management, and collaboration tools, Alert Notifications and tracking our report time to time, the system empowers users to streamline their workflow and achieve their goals efficiently.

**Functional Requirements:**

**1. Task Management:** Users can create tasks, set deadlines, assign them to team members, and track their progress.

**2. Project Management:** Users can organize tasks into projects, allowing for better organization and collaboration.

**3. Deadline Tracking:** The application helps users keep track of deadlines and ensures tasks are completed on time.

**4. Priority Management:** Users can assign priority levels to tasks, helping them focus on high-priority items.

**5. Subtask Management:** Users can break down larger tasks into smaller subtasks for better organization and execution.

**6. Collaboration:** The application facilitates collaboration by allowing users to assign tasks to team members, share project updates, and communicate within the platform.

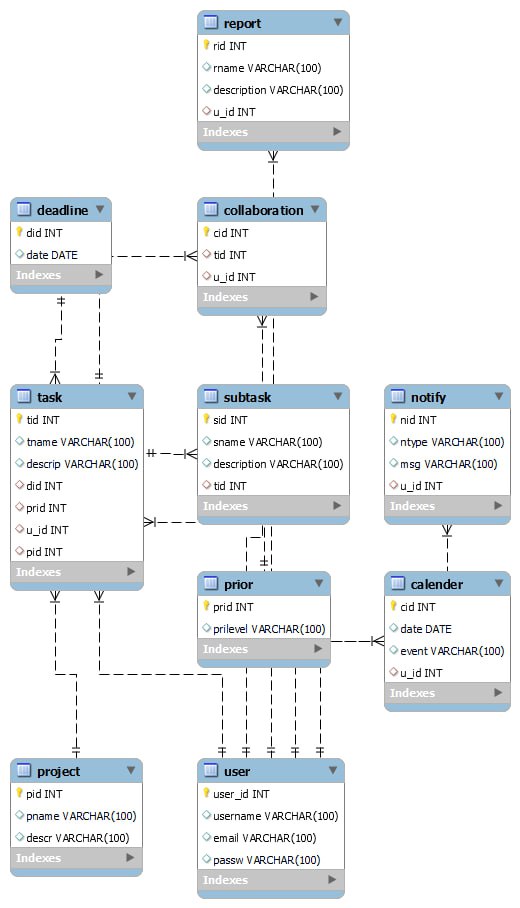
**7. Notifications:** Users receive notifications for upcoming deadlines, task assignments, and other relevant updates.

**8. Calendar Integration:** The application may integrate with calendars to provide users with a visual representation of their tasks and deadlines.

**9. Reporting:** Users can generate reports to analyse task completion rates, project progress, and team productivity.

**10. User Management:** Users can register, log in, and manage their accounts, including updating their profile information and resetting passwords.

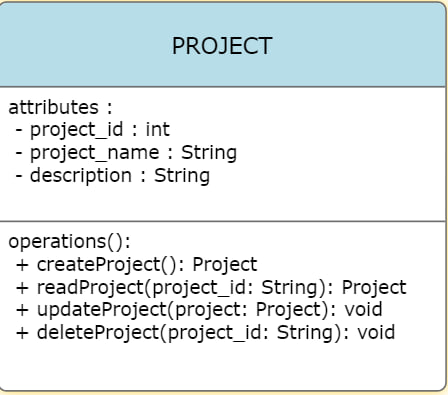
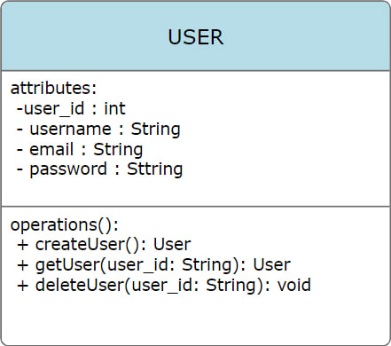
**ER DIAGRAM:**

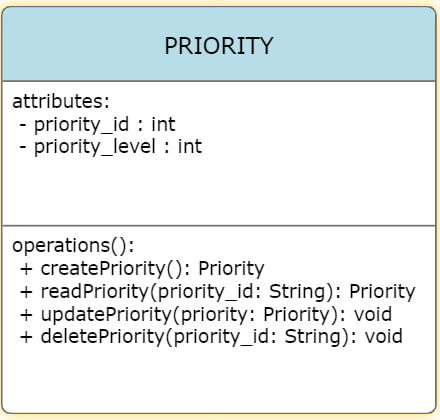
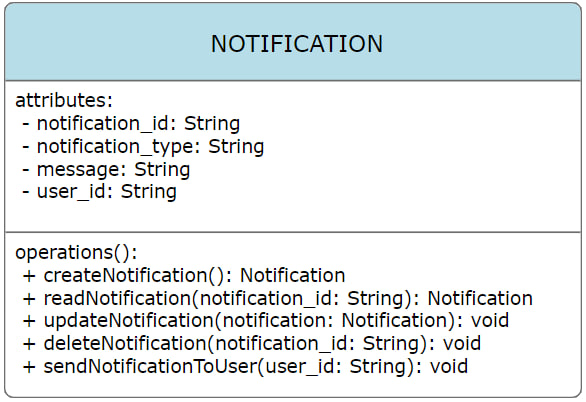
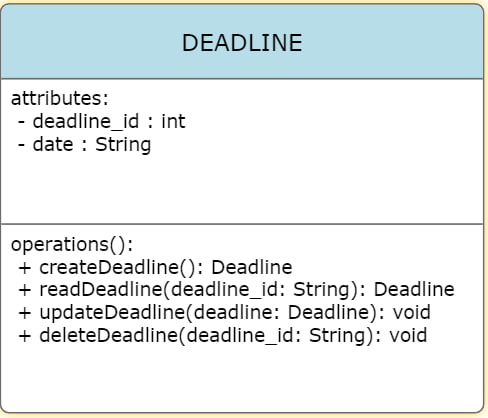
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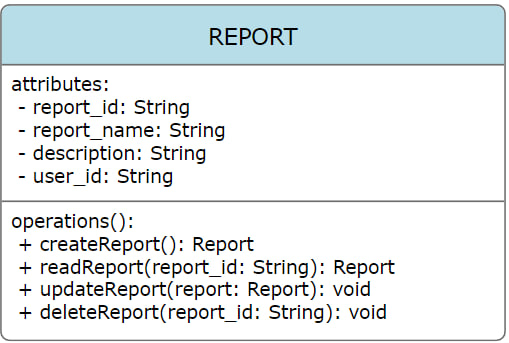
**QUERIES TO CREATE DATA BASE:**

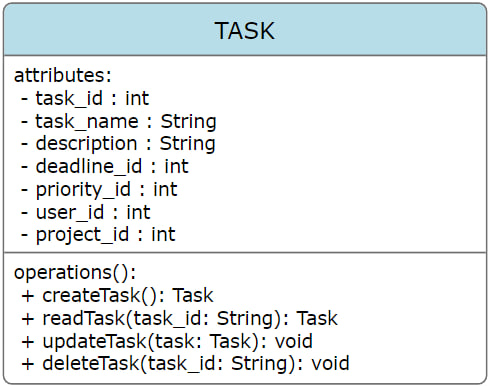
* **create database tasksschedulingapplication;**
* **use tasksschedulingapplication;**
* **create table user(user\_id int primary key auto\_increment,username varchar(100),email varchar(100),passw varchar(100));**
* **create table project(pid int primary key auto\_increment,pname varchar(100),descr varchar(100));**
* **create table deadline(did int primary key auto\_increment,date date );**
* **create table prior(prid int primary key auto\_increment,prilevel varchar(100));**
* **create table calender(cid int primary key auto\_increment,date date,event varchar(100),u\_id int,foreign key(u\_id) references user(user\_id));**
* **create table report(rid int primary key auto\_increment,rname varchar(100),description varchar(100),u\_id int,foreign key(u\_id)references user(user\_id));**
* **create table notify(nid int primary key auto\_increment,ntype varchar(100),msg varchar(100),u\_id int,foreign key(u\_id) references user(user\_id) );**
* **create table task(tid int primary key auto\_increment,tname varchar(100),descrip varchar(100),did int,foreign key(did) references deadline(did),prid int,foreign key(prid) references prior(prid),u\_id int,foreign key(u\_id) references user(user\_id),pid int,foreign key(pid) references project(pid));**
* **create table subtask(sid int primary key auto\_increment,sname varchar(100),description varchar(100),tid int,foreign key(tid) references task(tid));**
* **create table collaboration(cid int primary key auto\_increment,tid int, foreign key(tid)references task(tid),u\_id int,foreign key(u\_id)references user(user\_id));**

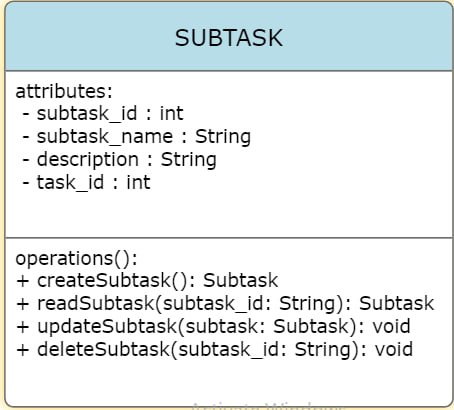
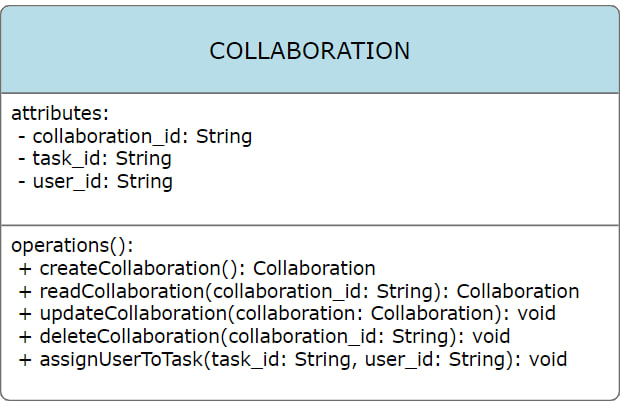
**UML/Class attribute & methods diagram:**

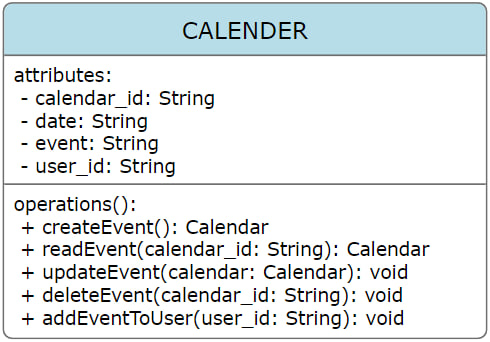


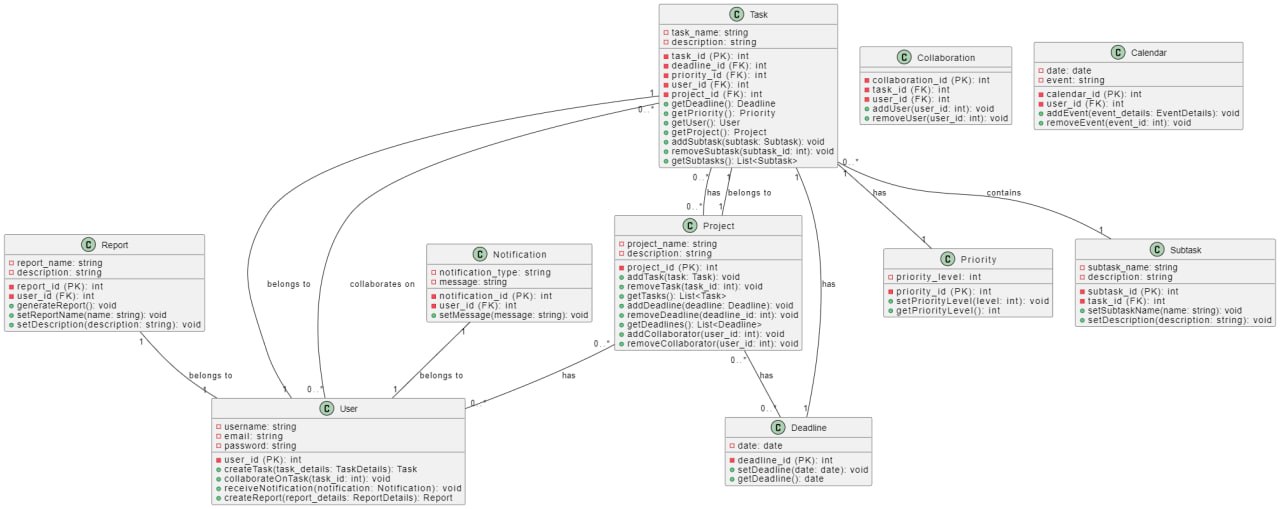










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**All java classes:**

***-User.java***

package Task\_scheduling\_application;  
  
public class user {  
 private String user\_id;  
 private String username;  
 private String email;  
 private String password;  
  
 public user(String user\_id, String username, String email, String password) {  
 this.user\_id = user\_id;  
 this.username = username;  
 this.email = email;  
 this.password = password;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
  
 public String getUsername() {  
 return username;  
 }  
  
 public void setUsername(String username) {  
 this.username = username;  
 }  
  
 public String getEmail() {  
 return email;  
 }  
  
 public void setEmail(String email) {  
 this.email = email;  
 }  
  
 public String getPassword() {  
 return password;  
 }  
  
 public void setPassword(String password) {  
 this.password = password;  
 }  
 public void displayUser(){  
 System.*out*.println("User details:");  
 System.*out*.println("User ID: " + user\_id);  
 System.*out*.println("Username: " + username);  
 System.*out*.println("Email: " + email);  
 System.*out*.println("Password: " + password);  
 }  
}

***-Project.java***

package Task\_scheduling\_application;  
  
public class project {  
 private String project\_id;  
 private String project\_name;  
 private String description;  
  
 public project(String project\_id, String project\_name, String description) {  
 this.project\_id = project\_id;  
 this.project\_name = project\_name;  
 this.description = description;  
 }  
  
 public String getProject\_id() {  
 return project\_id;  
 }  
  
 public void setProject\_id(String project\_id) {  
 this.project\_id = project\_id;  
 }  
  
 public String getProject\_name() {  
 return project\_name;  
 }  
  
 public void setProject\_name(String project\_name) {  
 this.project\_name = project\_name;  
 }  
  
 public String getDescription() {  
 return description;  
 }  
  
 public void setDescription(String description) {  
 this.description = description;  
 }  
  
 public void Projectdisplay() {  
 System.*out*.println("Project details:");  
 System.*out*.println("Project ID: " + project\_id);  
 System.*out*.println("Project Name: " + project\_name);  
 System.*out*.println("Description: " + description);  
 }  
}

***-Deadline.java:***

package Task\_scheduling\_application;  
  
public class DeadLine {  
 private String deadline\_id;  
 private String date;  
  
 public DeadLine(String deadline\_id, String date) {  
 this.deadline\_id = deadline\_id;  
 this.date = date;  
 }  
  
 public String getDeadline\_id() {  
 return deadline\_id;  
 }  
  
 public void setDeadline\_id(String deadline\_id) {  
 this.deadline\_id = deadline\_id;  
 }  
  
 public String getDate() {  
 return date;  
 }  
  
 public void setDate(String date) {  
 this.date = date;  
 }  
 public void Deaddlinedisplay() {  
 System.*out*.println("Deadline details:");  
 System.*out*.println("Deadline ID: " + deadline\_id);  
 System.*out*.println("Date: " + date);  
 }  
}

}

**-Priority.java:**

package Task\_scheduling\_application;  
  
public class Priority {  
 private String priority\_id;  
 private String priority\_level;  
  
 public Priority(String priority\_id, String priority\_level) {  
 this.priority\_id = priority\_id;  
 this.priority\_level = priority\_level;  
 }  
  
 public String getPriority\_id() {  
 return priority\_id;  
 }  
  
 public void setPriority\_id(String priority\_id) {  
 this.priority\_id = priority\_id;  
 }  
  
 public String getPriority\_level() {  
 return priority\_level;  
 }  
  
 public void setPriority\_level(String priority\_level) {  
 this.priority\_level = priority\_level;  
 }  
 public void Prioritydisplay() {  
 System.*out*.println("Priority details:");  
 System.*out*.println("Priority ID: " + priority\_id);  
 System.*out*.println("Priority Level: " + priority\_level);  
 }  
}

**-Calender.java:**

package Task\_scheduling\_application;  
  
public class Calender {  
 private String calendar\_id;  
 private String date;  
 private String event;  
 private String user\_id;  
  
 public Calender(String calendar\_id, String date, String event, String user\_id) {  
 this.calendar\_id = calendar\_id;  
 this.date = date;  
 this.event = event;  
 this.user\_id = user\_id;  
 }  
  
 public String getCalendar\_id() {  
 return calendar\_id;  
 }  
  
 public void setCalendar\_id(String calendar\_id) {  
 this.calendar\_id = calendar\_id;  
 }  
  
 public String getDate() {  
 return date;  
 }  
  
 public void setDate(String date) {  
 this.date = date;  
 }  
  
 public String getEvent() {  
 return event;  
 }  
  
 public void setEvent(String event) {  
 this.event = event;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
 public void Calenderdisplay() {  
 System.*out*.println("Calendar Event details:");  
 System.*out*.println("Calendar ID: " + calendar\_id);  
 System.*out*.println("Date: " + date);  
 System.*out*.println("Event: " + event);  
 System.*out*.println("User ID: " + user\_id);  
 }  
  
  
  
}

**-Report.java:**

package Task\_scheduling\_application;  
  
public class Report {  
 private String report\_id;  
 private String report\_name;  
 private String description;  
 private String user\_id;  
  
 public Report(String report\_id, String report\_name, String description, String user\_id) {  
 this.report\_id = report\_id;  
 this.report\_name = report\_name;  
 this.description = description;  
 this.user\_id = user\_id;  
 }  
  
 public String getReport\_id() {  
 return report\_id;  
 }  
  
 public void setReport\_id(String report\_id) {  
 this.report\_id = report\_id;  
 }  
  
 public String getReport\_name() {  
 return report\_name;  
 }  
  
 public void setReport\_name(String report\_name) {  
 this.report\_name = report\_name;  
 }  
  
 public String getDescription() {  
 return description;  
 }  
  
 public void setDescription(String description) {  
 this.description = description;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
 public void Reportdisplay() {  
 System.*out*.println("Report details:");  
 System.*out*.println("Report ID: " + report\_id);  
 System.*out*.println("Report Name: " + report\_name);  
 System.*out*.println("Description: " + description);  
 System.*out*.println("User ID: " + user\_id);  
 }  
}

***-Notification.java:***

package Task\_scheduling\_application;  
  
public class Notification {  
 private String notification\_id;  
 private String notification\_type;  
 private String message;  
 private String user\_id;  
  
 public Notification(String notification\_id, String notification\_type, String message, String user\_id) {  
 this.notification\_id = notification\_id;  
 this.notification\_type = notification\_type;  
 this.message = message;  
 this.user\_id = user\_id;  
 }  
  
 public String getNotification\_id() {  
 return notification\_id;  
 }  
  
 public void setNotification\_id(String notification\_id) {  
 this.notification\_id = notification\_id;  
 }  
  
 public String getNotification\_type() {  
 return notification\_type;  
 }  
  
 public void setNotification\_type(String notification\_type) {  
 this.notification\_type = notification\_type;  
 }  
  
 public String getMessage() {  
 return message;  
 }  
  
 public void setMessage(String message) {  
 this.message = message;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
 public void Notificationdisplay() {  
 System.*out*.println("Notification details:");  
 System.*out*.println("Notification ID: " + notification\_id);  
 System.*out*.println("Type: " + notification\_type);  
 System.*out*.println("Message: " + message);  
 System.*out*.println("User ID: " + user\_id);  
 }  
}

***-Task.java:***

package Task\_scheduling\_application;  
  
public class Task {  
 private String task\_id;  
 private String task\_name;  
 private String description;  
 private String deadline\_id;  
 private String priority\_id;  
 private String user\_id;  
 private String project\_id;  
  
 public Task(String task\_id, String task\_name, String description, String deadline\_id, String priority\_id, String user\_id, String project\_id) {  
 this.task\_id = task\_id;  
 this.task\_name = task\_name;  
 this.description = description;  
 this.deadline\_id = deadline\_id;  
 this.priority\_id = priority\_id;  
 this.user\_id = user\_id;  
 this.project\_id = project\_id;  
 }  
  
 public String getTask\_id() {  
 return task\_id;  
 }  
  
 public void setTask\_id(String task\_id) {  
 this.task\_id = task\_id;  
 }  
  
 public String getTask\_name() {  
 return task\_name;  
 }  
  
 public void setTask\_name(String task\_name) {  
 this.task\_name = task\_name;  
 }  
  
 public String getDescription() {  
 return description;  
 }  
  
 public void setDescription(String description) {  
 this.description = description;  
 }  
  
 public String getDeadline\_id() {  
 return deadline\_id;  
 }  
  
 public void setDeadline\_id(String deadline\_id) {  
 this.deadline\_id = deadline\_id;  
 }  
  
 public String getPriority\_id() {  
 return priority\_id;  
 }  
  
 public void setPriority\_id(String priority\_id) {  
 this.priority\_id = priority\_id;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
  
 public String getProject\_id() {  
 return project\_id;  
 }  
  
 public void setProject\_id(String project\_id) {  
 this.project\_id = project\_id;  
 }  
 public void Taskdisplay() {  
 System.*out*.println("Task details:");  
 System.*out*.println("Task ID: " + task\_id);  
 System.*out*.println("Task Name: " + task\_name);  
 System.*out*.println("Description: " + description);  
 System.*out*.println("Deadline ID: " + deadline\_id);  
 System.*out*.println("Priority ID: " + priority\_id);  
 System.*out*.println("User ID: " + user\_id);  
 System.*out*.println("Project ID: " + project\_id);  
 }  
}

***-Subtask.java:***

package Task\_scheduling\_application;  
  
public class Subtask {  
 private String subtask\_id;  
 private String subtask\_name;  
 private String description;  
 private String task\_id;  
  
  
 public Subtask(String subtask\_id, String subtask\_name, String description, String task\_id) {  
 this.subtask\_id = subtask\_id;  
 this.subtask\_name = subtask\_name;  
 this.description = description;  
 this.task\_id = task\_id;  
 }  
  
 public String getSubtask\_id() {  
 return subtask\_id;  
 }  
  
 public void setSubtask\_id(String subtask\_id) {  
 this.subtask\_id = subtask\_id;  
 }  
  
 public String getSubtask\_name() {  
 return subtask\_name;  
 }  
  
 public void setSubtask\_name(String subtask\_name) {  
 this.subtask\_name = subtask\_name;  
 }  
  
 public String getDescription() {  
 return description;  
 }  
  
 public void setDescription(String description) {  
 this.description = description;  
 }  
  
 public String getTask\_id() {  
 return task\_id;  
 }  
  
 public void setTask\_id(String task\_id) {  
 this.task\_id = task\_id;  
 }  
 public void Subtaskdisplay() {  
 System.*out*.println("Subtask details:");  
 System.*out*.println("Subtask ID: " + subtask\_id);  
 System.*out*.println("Subtask Name: " + subtask\_name);  
 System.*out*.println("Description: " + description);  
 System.*out*.println("Task ID: " + task\_id);  
 }  
}

***-Collaboration.java:***

package Task\_scheduling\_application;  
  
public class Collaboration {  
 private String collaboration\_id;  
 private String task\_id;  
 private String user\_id;  
  
 public Collaboration(String collaboration\_id, String task\_id, String user\_id) {  
 this.collaboration\_id = collaboration\_id;  
 this.task\_id = task\_id;  
 this.user\_id = user\_id;  
 }  
  
 public String getCollaboration\_id() {  
 return collaboration\_id;  
 }  
  
 public void setCollaboration\_id(String collaboration\_id) {  
 this.collaboration\_id = collaboration\_id;  
 }  
  
 public String getTask\_id() {  
 return task\_id;  
 }  
  
 public void setTask\_id(String task\_id) {  
 this.task\_id = task\_id;  
 }  
  
 public String getUser\_id() {  
 return user\_id;  
 }  
  
 public void setUser\_id(String user\_id) {  
 this.user\_id = user\_id;  
 }  
 public void Collaborationdisplay() {  
 System.*out*.println("Collaboration details:");  
 System.*out*.println("Collaboration ID: " + collaboration\_id);  
 System.*out*.println("Task ID: " + task\_id);  
 System.*out*.println("User ID: " + user\_id);  
 }  
}

***Main.java***

package Task\_scheduling\_application;  
import java.util.Scanner;  
public class Main {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.*in*);  
 // user  
 System.*out*.println("Enter the User\_id");  
 String user\_id = sc.nextLine();  
  
 System.*out*.println("Enter the username");  
 String username = sc.nextLine();  
  
 System.*out*.println("Enter the email");  
 String email = sc.nextLine();  
  
 System.*out*.println("Enter the password");  
 String password = sc.nextLine();  
 user us = new user(user\_id, username, email, password);  
 us.displayUser();  
  
 // project  
 System.*out*.println("Enter the project ID");  
 String project\_id = sc.nextLine();  
  
 System.*out*.println("Enter the project name");  
 String project\_name = sc.nextLine();  
  
 System.*out*.println("Enter the description : ");  
 String description = sc.nextLine();  
  
  
 project pro = new project(project\_id, project\_name, description);  
  
 pro.Projectdisplay();  
  
  
 //deadline  
 System.*out*.println("Enter the deadline ID");  
 String deadline\_id = sc.nextLine();  
  
 System.*out*.println("Enter the deadline date");  
 String date = sc.nextLine();  
  
  
 DeadLine deadline = new DeadLine(deadline\_id, date);  
 deadline.Deaddlinedisplay();  
  
  
 // priority  
 System.*out*.println("Enter the priority ID");  
 String priority\_id = sc.nextLine();  
  
 System.*out*.println("Enter the priority level");  
 String priority\_level = sc.nextLine();  
  
  
 Priority priority = new Priority(priority\_id, priority\_level);  
 priority.Prioritydisplay();  
  
 // Calender  
 System.*out*.println("Enter the calendar ID");  
 String calendar\_id = sc.nextLine();  
  
 System.*out*.println("Enter the date : ");  
 String date1 = sc.nextLine();  
  
 System.*out*.println("Enter the event");  
 String event = sc.nextLine();  
  
 System.*out*.println("Enter the user ID");  
 String user\_id\_copy = user\_id;  
  
 Calender calendarEvent = new Calender(calendar\_id, date1, event, user\_id\_copy);  
 calendarEvent.Calenderdisplay();  
  
  
 // report  
 System.*out*.println("Enter the report ID");  
 String report\_id = sc.nextLine();  
  
 System.*out*.println("Enter the report name");  
 String report\_name = sc.nextLine();  
  
 System.*out*.println("Enter the description");  
 String description\_r = sc.nextLine();  
  
 String u\_id = user\_id\_copy;  
  
 Report report = new Report(report\_id, report\_name, description\_r, u\_id);  
 report.Reportdisplay();  
  
 // Notification  
 System.*out*.println("Enter the notification ID");  
 String notification\_id = sc.nextLine();  
  
 System.*out*.println("Enter the notification type");  
 String notification\_type = sc.nextLine();  
  
 System.*out*.println("Enter the message");  
 String message = sc.nextLine();  
  
 String userid = u\_id;  
  
 Notification notification = new Notification(notification\_id, notification\_type, message, userid);  
 notification.Notificationdisplay();  
  
 // Task  
 System.*out*.println("Enter the task\_id");  
 String task\_id = sc.nextLine();  
 System.*out*.println("Enter the task name");  
 String task\_name = sc.nextLine();  
 System.*out*.println("Enter the task description");  
 String description\_t = sc.nextLine();  
  
 String deadline\_id\_copy = deadline\_id ;  
  
 String priority\_id\_copy = priority\_id;  
  
 String user\_\_id = userid;  
  
 String project\_id\_copy = project\_id;  
  
 Task task = new Task(task\_id,task\_name,description\_t,deadline\_id\_copy,priority\_id\_copy,user\_\_id,project\_id\_copy);  
 task.Taskdisplay();  
  
 // subtask  
 System.*out*.println("Enter the subtask ID");  
 String subtask\_id = sc.nextLine();  
  
 System.*out*.println("Enter the subtask name");  
 String subtask\_name = sc.nextLine();  
  
 System.*out*.println("Enter the description");  
 String description\_st = sc.nextLine();  
  
 System.*out*.println("Enter the task ID");  
 String task\_id\_copy = task\_id;  
  
 Subtask subtask = new Subtask(subtask\_id, subtask\_name, description\_st, task\_id\_copy);  
  
 subtask.Subtaskdisplay();  
  
 // Collaboration  
 System.*out*.println("Enter the collaboration ID");  
 String collaboration\_id = sc.nextLine();  
  
 String task\_id\_c= task\_id\_copy;  
  
 String user\_\_\_id = user\_\_id;  
  
 Collaboration collaboration = new Collaboration(collaboration\_id, task\_id\_c, user\_\_\_id);  
  
 collaboration.Collaborationdisplay();  
  
 }  
}

***Challenges List:***

* **Database Design:** Designing the database schema to efficiently represent the relationships between different entities posed a significant challenge. Ensuring data integrity and minimizing redundancy were key considerations.
* **Java classes:** As we created java classes for each entity, a concept of foreign key in Database management system for a quite difficult for me to figure it out in java as some classes may have same attributes as well as same values.