FPT UNIVERSITY

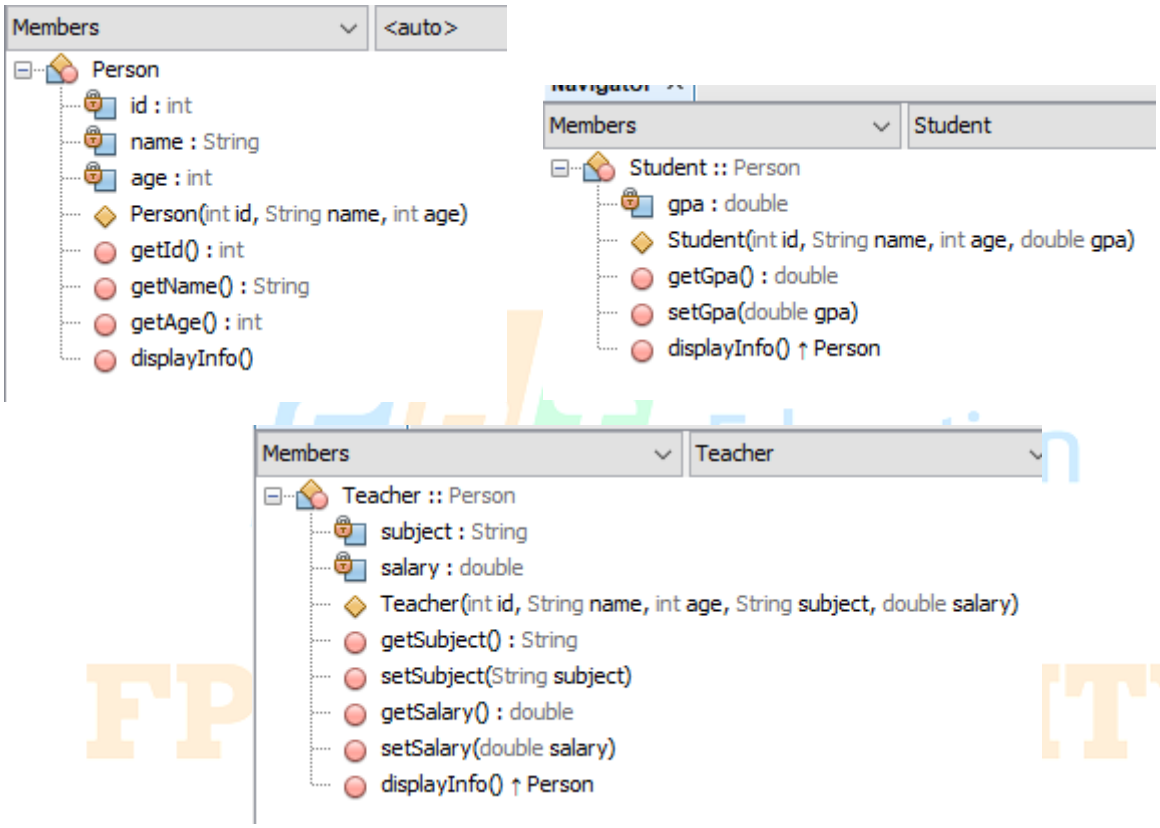
PRO192 ASSIGNMENT

The requirements of the student management problem using object-oriented programming in Java include the following functionalities:

1. Personal information management:

- Student: Student ID, Full name, Age, GPA.

- Teacher: Teacher ID, Full name, Age, Subject, Salary.

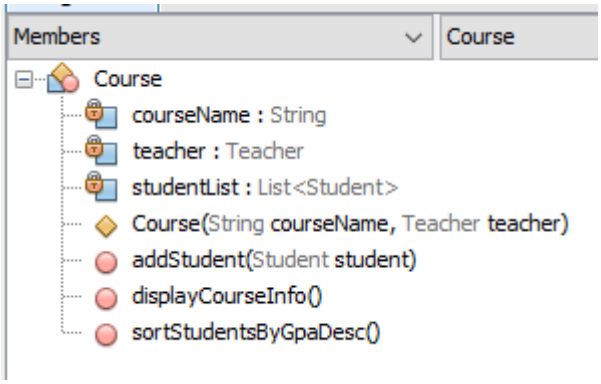


2. Course management:

- Course: Course ID, Course name.

- Each course has a course name and a responsible teacher.

- Each course has a list of participating students.



3. Management functionalities:

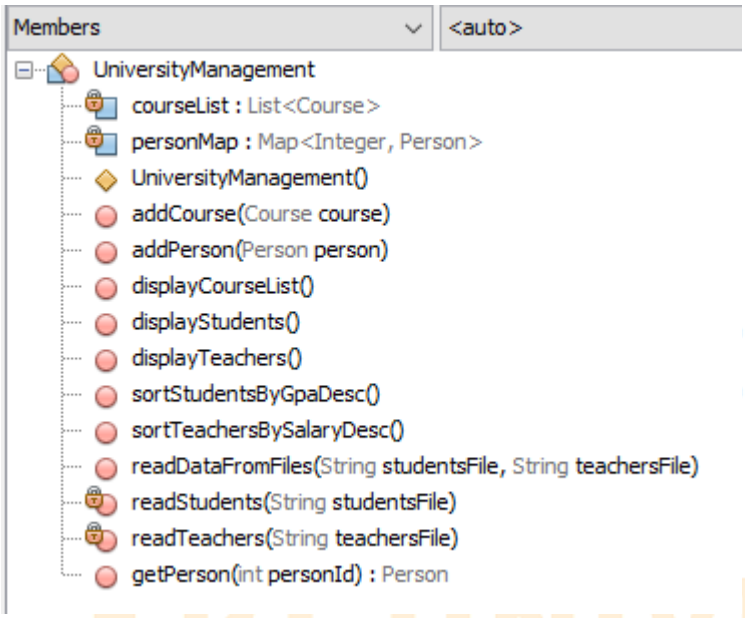
- Display a list of courses and detailed information for each course, including course ID, course name, responsible teacher, and list of participating students.

- Display a list of students and personal information for each student, including student ID, full name, age, and GPA.

- Display a list of teachers and personal information for each teacher, including teacher ID, full name, age, subject, and salary.

- Sort the list of students in descending order of GPA.

- Sort the list of teachers in descending order of salary.

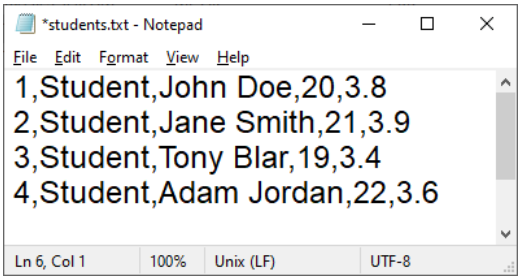


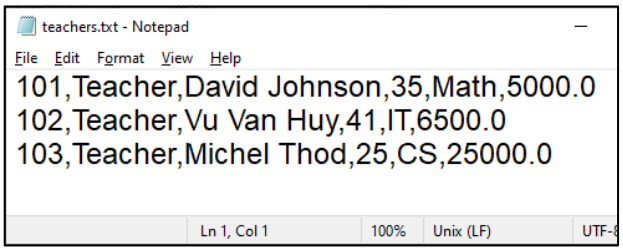
4. Read data from text files:

- Read student data from the "students.txt" file and create corresponding student objects.

- Read teacher data from the "teachers.txt" file and create corresponding teacher objects.

- Assign students and teachers to the respective courses.



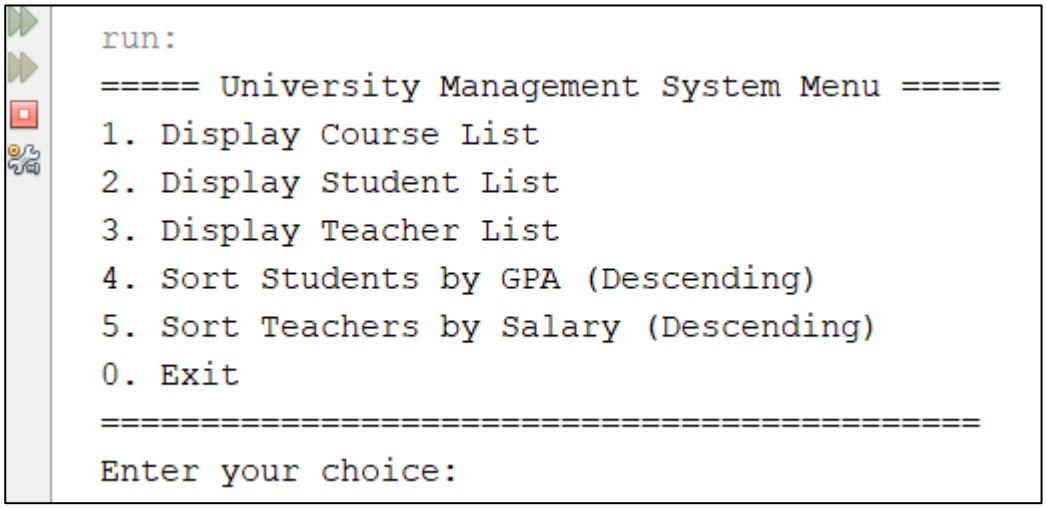


5. Display a menu:

- Display a menu allowing the user to choose management functionalities.

- Perform the corresponding functionalities based on user input.

Using the given project and implement the appropriate classes, methods, and data to fulfill the management functionalities and meet the requirements of the student management problem.



---------- OUTPUT ----------

```
Enter your choice: 1
Course: Introduction to Programming
Teacher:
ID: 101 | Name: David Johnson | Age: 35 | Subject: Math | Salary: 5000.0
Students:
ID: 1 | Name: John Doe | Age: 20 | GPA: 3.8
ID: 2 | Name: Jane Smith | Age: 21 | GPA: 3.9
```

```
Enter your choice: 2
Student List:
ID: 1 | Name: John Doe | Age: 20 | GPA: 3.8
ID: 2 | Name: Jane Smith | Age: 21 | GPA: 3.9
ID: 3 | Name: Tony Blar | Age: 19 | GPA: 3.4
ID: 4 | Name: Adam Jordan | Age: 22 | GPA: 3.6
Enter your choice:
```

```
Enter your choice: 3
Teacher List:
ID: 101 | Name: David Johnson | Age: 35 | Subject: Math | Salary: 5000.0

ID: 102 | Name: Vu Van Huy | Age: 41 | Subject: IT | Salary: 6500.0

ID: 103 | Name: Michel Thod | Age: 25 | Subject: CS | Salary: 25000.0

Enter your choice:
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Enter your choice: 4
Student List:
ID: 2 | Name: Jane Smith | Age: 21 | GPA: 3.9
ID: 1 | Name: John Doe | Age: 20 | GPA: 3.8
ID: 4 | Name: Adam Jordan | Age: 22 | GPA: 3.6
ID: 3 | Name: Tony Blar | Age: 19 | GPA: 3.4
Enter your choice:
```

```
Enter your choice: 5
Teacher List (Sorted by Salary - Descending):
ID: 103 | Name: Michel Thod | Age: 25 | Subject: CS | Salary: 25000.0

ID: 102 | Name: Vu Van Huy | Age: 41 | Subject: IT | Salary: 6500.0

ID: 101 | Name: David Johnson | Age: 35 | Subject: Math | Salary: 5000.0

Enter your choice:
```