Tasks attachment with Assignment 5

Download & Setup:

1. Please download your Assignment 5
2. You need to add logic in your main function to integrate the following information

Data Generation with Randomness:

3. Take a variable N = 20 to denote the number of students
4. For each student, add some data to integrate their name, roll and email as per the given statement
5. Now, for each student assign four courses randomly (3 major courses, 1 optional course)
6. Now, for each student for each course, randomly pick an evaluation system maintaining the constraint of having 100 in each course
7. Now, randomly assign value for each course, for each evaluation metric (Final, mid, attendance, assignment, etc. as required by the chosen metric)

Executable Functions:

8. Execute a function call to print a comprehensive list containing all the information relevant to a particular course - students, their information, and their chosen assessment criteria.
9. Execute a function call that would calculate the grade for each student for each course
10. Execute a function call to calculate the total grade for each student
11. Execute a function call to print the students as per their total grade in descending order. If there are ties choose the student who got the most number first
12. Execute a function call to print a course-based ranking in descending order. Higher-grade people would come early in the printing. If there are ties between grades, choose the person who got a higher total number during the printing

Evaluation Factors:

- Your solution will be evaluated on the rigorousness of OOP principles that have been incorporated into the solution
- Your code should be flexible enough to incorporate new courses, new evaluation metrics
- The features to calculate or print various metrics should also be modular as flexible maintaining the design principles

Deliverables:

- A single submission file (*Roll_X.java*, e.g., *Roll_9.java*) that would compile all of your source code into one file and would be runnable through the terminal (*javac Roll_9.java* , *java Roll_9*)
- A Single report (*Roll_9.pdf*), specifying the OOP principles/features/unique contents that you have implemented in your design
- Submit everything in the assigned post and turn it in.

Thank YOU.