

## Assignment on Stream Api

Make a Student class having fields id,name,age,gender,engDepartment,year of enrollment ,perTillDate

Add following student in list ;

```
1.new Student(111, "Jiya Brein", 17, "Female", "Computer Science", 2018, 70.8)
2.new Student(122, "Paul Niksui", 18, "Male", "Mechanical", 2016, 50.2)
3.new Student(133, "Martin Theron", 17, "Male", "Electronic", 2017, 90.3)
4.new Student(144, "Murali Gowda", 18, "Male", "Electrical", 2018, 80)
5.new Student(155, "Nima Roy", 19, "Female", "Textile", 2016, 70)
6.new Student(166, "Iqbal Hussain", 18, "Male", "Security", 2016, 70)
7.new Student(177, "Manu Sharma", 16, "Male", "Chemical", 2018, 70)
8.new Student(188, "Wang Liu", 20, "Male", "Computer Science", 2015, 80);
9.new Student(199, "Amelia Zoe", 18, "Female", "Computer Science", 2016, 85);
10.new Student(200, "Jaden Dough", 18, "Male", "Security", 2015, 82);
11.new Student(211, "Jasna Kaur", 20, "Female", "Electronic", 2019, 83);
12.new Student(222, "Nitin Joshi", 19, "Male", "Textile", 2016, 60.4);
13.new Student(233, "Jyothi Reddy", 16, "Female", "Computer Science", 2015, 45.6);
14.new Student(244, "Nicolus Den", 16, "Male", "Electronic", 2017, 95.8);
15.new Student(255, "Ali Baig", 17, "Male", "Electronic", 2018, 88.4);
16.new Student(266, "Sanvi Pandey", 17, "Female", "Electric", 2019, 72.4);
17.new Student(277, "Anuj Chettiar", 18, "Male", "Computer Science", 2017, 57.5);
```

Use stream api on above list of employees find

1. Print the name of all departments in the college?
2. Get the names of all students who have enrolled after 2018?
3. Get the details of all male student in the computer sci department?
4. How many male and female student are there ? (HINT:use Collectors.groupingBy() for grouping based on gender)
5. What is the average age of male and female students?
6. Get the details of highest student having highest percentage ?
7. Count the number of students in each department? (Hint :use Collectors.groupingBy())
8. What is the average percentage achieved in each department?
9. Get the details of youngest male student in the Electronic department?(Hint :Use Collectors.minBy)
10. How many male and female students are there in the computer science department?

Structure your code so as to comply to clean code(SOLID Principles)

## Approach

1.     Used the map operation to extract the department names from the Student objects.  
      Applied distinct to ensure no duplicates.  
      Used forEach to print each department name.
  
2.     Used the filter operation to select students who enrolled after 2018.  
      Applied map to extract the names of these students.  
      Collected the results into a list and printed it.
  
3.     Used the filter operation to select male students in the "Computer Science" department.  
      Used forEach to print the details of these students.
  
4.     Used collect with Collectors.groupingBy to count the number of male and female  
      Printed the resulting map.
  
5.     Used collect with Collectors.groupingBy and Collectors.averagingInt to calculate the  
      average age of male and female students.  
      Printed the resulting map.
  
6.     Used max with a custom comparator to find the student with the highest percentage.  
      Printed the details of this student.
  
7.     Used collect with Collectors.groupingBy and Collectors.counting to count the number of  
      students in each department.  
      Printed the resulting map.
  
8.     Used collect with Collectors.groupingBy and Collectors.averagingDouble to calculate the  
      average percentage of students in each department.  
      Printed the resulting map.
  
9.     Used filter to select male students in the "Electronic" department.  
      Used min with a custom comparator to find the youngest male student.  
      Printed the details of this student.
  
10.    Used filter to select students in the "Computer Science" department.  
      Used collect with Collectors.groupingBy and Collectors.counting to count the number of  
      male and female students.  
      Printed the resulting map.