Faculty of Engineering, University of Jaffna

Department of Computer Engineering

EC5080: Software Construction

Lab 08: Declarative programming

Java 8 introduced a host of new features, including lambda functions and streams.

Here is a sample lines of code of an imperative java class.

Java 7:

```
ArrayList results = new ArrayList();
for (Grade grade: grades)
{
      if (grade.getScore() > 40 && grade.getSubject() == Subjects.SCIENCE)
      {
            results.add(grade.getScore());
      }
}
System.out.println(results);
```

With the new java streaming api, a functional approach can be adopted as in the following conversion.

Java 8:

```
ArrayList results = grades.stream()
.filter(grade -> grade.getScore() > 40)
.filter(grade -> grade.getSubject() == Subject.SCIENCE)
.collect(Collectors.toList());
System.out.println(grades);
```

Task:

1. Write a java class Student to get and set his/her Name, and RegNo. Also, it has the facility to return them to print.

2. You need to write a Java class in an imperative way to do the following (Hint: methods),
    a. Add sample data to the ArrayList.
    b. Print all uppercase names in a sorted order.
    c. Print the registration number of students which starts with 2019.
3. You need to write a Java class in an functional way to do the following,
    a. Add sample data to the ArrayList.
    b. Print all uppercase names in a sorted order.
    c. Print the registration number of students which starts with 2019.

Upload the sourcecode in a zip folder named Lab08_RegNo.