

# Lab 9

Read the below instructions. Make reasonable assumptions and write implementation. On a separate page write down your implementation design choice.

1.	<p><b>StudentCollection</b></p> <p><b>Time:</b> 1 hour and 30 minutes</p> <p><b>Problem Description</b></p> <p>You need to create a class named StudentEnrollment that contains a list of enrolled students along with the methods to manipulate the list. The class has the following attributes and methods:</p> <ol style="list-style-type: none"><li>1. List of students</li><li>2. Remove, and get any student by using the student id, getAll which returns all students from the list.</li><li>3. add, remove, and get any student by using the student object.</li><li>4. Print method which uses an iterator to iterate the list and print it.</li></ol> <p>Each Student object has the following properties and activities:</p> <ol style="list-style-type: none"><li>1. ID which is a string. Add validation logic in the setId method like the length should be 9. Otherwise, throw an InvalidStudentIDException with a message.</li><li>2. Name which is a string.</li><li>3. Program which is an Enum. Values could be CSE, SWE, or IT.</li><li>4. CGPA which is a float value.</li><li>5. Study and play methods.</li></ol> <p>There is a ResultPublication class that has a method named publish which prints the sorted list of students. Sorting could be based on:</p> <ul style="list-style-type: none"><li>● Only student id</li><li>● CGPA</li><li>● Name</li><li>● Student id and CGPA. First, compare CGPA then student id.</li></ul> <p>Another class Exporter has the responsibility of exporting the list in CSV format or XML format. Keep in mind new type of exporting operation could be added.</p> <p><b>Test cases</b></p> <ul style="list-style-type: none"><li>● Write test cases for StudentEnrollment class. At least one test case for each of the methods.</li><li>● Write test cases for ResultPublication class.</li><li>● Write test cases for Exporter class.</li></ul> <p>Hint: implement the comparator interface for sorting</p>	20
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