# **Course: Object Oriented Programming**

# **Lab 06**

**Array List**

**Task 1:**

* Create an arraylist of strings named student and apply given methods on array list.
  + Add name of students in arrayList
    - Ali
    - Ahmad
    - Umar
    - Talha
* Create a static function named *display(ArrayList<String> students)* and call it after each of following steps and also print a blank line after each step.
* Add two more students at the end of students list using students.add()
  + 1)Tooba 2) Waleed
* Print the size of list.
* Add “Hamza” in the start of students.
* Add “Rizwan” as second element of list.
* Sort list of students (using Collections.sort())
* Remove “Tooba” from list.
* Remove the last element from list.
* Display the second element from list.
* Update the name of first student. New name should be “Muhammad Waleed”
* Remove the first name.
* Remove all elements from the list.

**Task 2:**

Create a fully encapsulated class named Student.

Student class has three attributes name, id and CGPA. Create a constructor, which take two attributes i.e. id and name.

* Create test class with name StudentTest

**In main class:**

* Create three objects of Student named s1, s2 and s3 with following attributes
  + Ali,SP19-BSE-010
  + Ahmad", SP19-BSE-001
  + Talha, SP19-BSE-002
* Create a static function named *display, call it after each of following steps,* and print a blank line after each step. This method should display id, name and CGPA of student.

Hint: set CGPA using setCGPA(double cgpa) method

* Create an ArrayList named arraylist and add the above objects to arraylist
* Add another Student object at the start of ArrayList with the following attributes
  + Waleed, SP19-BSE-020
* Add another Student object at the end of ArrayList with the following attributes
  + Maha, SP19-BSE-002
* Remove second student from list using index.
* Remove first student from list using object reference.
* Print total number of students.
* Replace the student at index 0 with new student.
* Now display information of first student in list.