

Assignment-2

Q1. Design a class called Student with the following details about the student:

- a. Name
- b. Age
- c. Roll Number - unique
- d. Branch
- e. Latest Roll No

So, this class will have overloaded constructors -

- A. Default constructor
- B. Constructors with all fields as parameters

- Initialize the students' information by storing information about 10 students. First 5 elements should be initialized with default constructor. Next 5 elements must be initialized by parameterized constructor.
- Define a display method that prints all the fields for each Student.
- 'Latest Roll No' field of the class will be static containing latest roll number. Print the latest roll no. at the end of the program.
- Print the information about students' by just calling object.display().

Q2. Create a singly linked list L in which each node has a data and link field. Data stores an integer value and link field stores the pointer to the next node. A header pointer must be there that always points to the first element of the list.

This class will have overloaded constructors -

Type A: Constructor with all fields as parameters

Type B: Constructor with an object as parameter

- In the main method, Input the data for 10 elements in the linked list. For the first 5 elements, Type A constructor must be called and for the next 5 elements, Type B constructor must be called for initializing the values.
- The newly created element must always be inserted at the end of the list.
- Define a function **sort** that sorts linked list in increasing order of data.
- Define a function **display** that prints the sorted linked list.
- Define a function **find** that prints the first and the last element of the sorted linked list.