

5. Give real world examples of when to use an ArrayList and when to use LinkedList.(5 marks).

ANSWER:

#### LINKED LISTS

1. History section of web browsers uses linked lists where it creates a linked list of web-pages visited, so that when you check history (traversal of a list) or press back button, the previous node's data is fetched.
2. A simple real life example is a Train, here each coach is connected to its previous and next coach (Except first and last). In terms of programming consider coach body as node value and connectors as links to previous and next nodes.
3. Our brain is also a good example of linked list. In the initial stages of learning something by heart, the natural process is to link one item to next. It's a subconscious act. Also, when we forget something and try to remember, then our brain follows association and link one memory with another and so on and we finally recall the lost memory.
4. Another real life example could be a queue/line of persons standing for food in a mess, insertion is done at one end and deletion at other. And these operations happen frequent.
5. Another example is a stack of books in a library. The books are linked to one another in a way that we need to remove the top book first if we want to access the book right below the top.

#### ARRAYLISTS

1. Keeping employee records in a database makes use of ArrayList. It is usually very easy to access a single employee's details and we do not require a linkage between the employees to be able to operate on either of the employees.
2. ArrayList can be used in the above points for the Linked Lists except that it will be expensive especially if we need to delete or insert an object in them hence preferring the Linked Lists over the ArrayList except for times when we want to access an object by its index.