DAY -5

**Java Programming**

**Collection in Java:**

Java collection means a single unit of objects

**Collection framework:**

* A collection framework is a unified architecture or a set of classes and interfaces for respresentingh and manipulating collections
* i.e collection of framework is used to store , retrieve and manipulate collection
* Java collections can achieve all the operations that you perform on a data such as searching ,sorting , insertion,manipulation and deletion

**Array list:**

* Array list is a resizeable array in JAVA that is part of the java collecvtions framework
* Unlike regular arrays , arraylist can grow or shrink dynamically as elements are added or removed

**Key features of array list:**

* **Dynamis sizing:** automatically adjusts its size when elements are added or removed
* **Index based access**: elements can be accessed using a inde , similar to arrays
* **Duplicate elements:** allows duplicate values
* **Order preservation:** maintains the order in which elements are added

**Methods in array list:**

* **Add (element):** addsan element to the list
* **Get(index):**retrives an element at the specified index
* **Remove(index):**removes the element at the specific index
* **Size():** returns the size of the list

**Syntax:**

Arraylist<integer>numbers=new array list<>();

**Eg:**

package Project;

import java.util.ArrayList;

import java.util.Scanner;

public class Project{

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

ArrayList<Integer> number=new ArrayList<>();

number.add(10);

number.add(20);

number.add(30);

System.out.println("Given arraylist:"+number);

System.out.println("Size of ArrayList:"+ number.size());

System.out.println("remove element"+number.remove(1));

System.out.println("getting element:"+number.get(1));

}

}

**Single linked list:**

Head node

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**Vowels program:**

package Main;

public class Main {

public static void main(String[] args) {

String input = "ase@iro@un" ;

String result = *removeVowels*(input);

System.***out***.println(result);

}

public static String removeVowels(String str) {

StringBuilder result = new StringBuilder();

for (char c : str.toCharArray()) {

if (!*isVowel*(c)) {

result.append(c);

}

}

return result.toString();

}

private static boolean isVowel(char c) {

return "aeiouAEIOU".indexOf(c) != -1;

}

}

**Throw:** Throw is used to create a custom or a new error