JAVA INTERVIEW QUESTIONS

1.Please tell me about yourself/introduce yourself/brief me about yourself

Hello Sir, Thanks for the oppurtunity. As you know ,I am Naren.
I am an Engineering Gradaute,passed out in the year 2016 in the stream of E & C (having secured 72 %). 12th I completed from Appolo Pre-university college having secured 89 % and 10th I completed from Chenamma High School, Bellary securing 87 %.

Currently I am doing software testing course at Qspiders.I have completed Manual Testing, Java and Selnium and doing SQL and parallely looking out for a job.

Hi Mr Rajeev,I am Malini ,currently working in HP . I have a total of 4 years experience in Testing.Since last 2 and 1/2 years I am into test automation using Selenium as a tool with java.

Current project is on CRM domain named Dolhpin for a client Aztec Solutions which is US based company.I am involve majorly in automating test cases,reviewing of testscripts,running automation framework for buildverification.

2.Tell me your current roles and resposibilities

Currently I work in this company as Senior Test Automation Engineer.
I am majorly involved in automating test cases.I also involve in reviewing test scripts.I execute the framework for Build verification. I also execute test cases manually.I attend meetings.

3.How do your rate yourself in java?
3.5 out of 5 (tell one)
7.5 out of 10

Interview Questions and Interview Programs

1.What is oops?What is object oriented programming language?
Object Oriented Programming System , any language which supports defining a class,creation of objects, and
Abstraction
Polymorphism
Inheritance
Encapsulation

2.What are the object oriented concepts?
Basic Object Oriented concepts are
Class
Objects
Abstraction
Polymorhphism
Inheritance
Encapsulation

3.What is abstraction?
abstraction represents essential features of a System without or partially involving in complexity.This can be achieved using abstract class and interfaces

a)Can you write a program to demonstrate

```
abstract class A
{
    abstract void print();

    void disp()
    {
```

```
                System.out.println("Hello");
        }
    }

    class B extends A
    {
        void print()
        {
                System.out.println("Print() implemented in class B");
        }
    }

    public class Demo1
    {
        public static void main(String[] args)
        {
                B b1=new B();
                b1.print();
                b1.disp();
        }
    }

    //2nd example
interface IDemo1
{
        void test1();

}

class A implements IDemo1
{
        public void test1()
        {
                System.out.println("test1() implemented in class A");
        }
}

public class Demo2 {

        public static void main(String[] args) {
                A a1=new A();
                a1.test1();
        }
}
```

b)Can you give a real time example

Dosa batter, we can prepare Masala dosa,Onion Dosa,Plain Dosa i.e. we can implement the complexities.Dosa batter is absract

Rice is abstract.We can prepare Fried rice,Lemon Rice,Biriyani Pulao,Puliyogre etc. i.e. we can implement the complexities.

Beer can/Coke can. KF orders aluminium sheets for making beer can.KF makes cans according to volume and different versions i.e. they implement the complexities and alumnium sheet is abstract

4.What is polymorphism?

Polymorhpism is a oops concept. It implies one method performing same or similar tasks based on different context as in method overloading or performing redefined or enhanced tasks as in method overriding

a)Can you write a program to demonstrate

write a program which has overloaded methods

```
class A1
 {
     void paint(int no_sides)
     {
     System.out.println("Code for writing a shape with " + no_sides +  " sides");
     }

      void paint(int no_sides,String color)
      {
      System.out.println("Code for writing a shape with  "  + no_sides + " sides and color " +
color);
      }
    }

    public class Demo3 {

      public static void main(String[] args) {

                A1 a1=new A1();
                a1.paint(3);
                a1.paint(3, "red")}}
```

write a program to demonstrate method overriding /dynamic polymorhism

```
class Company
{
        void address()
        {
                System.out.println("Company address");
        }
}
class Importer extends Company
{
        void address()
        {
                super.address();
                System.out.println("Importer address");
        }
}
public class Demo4 {

        public static void main(String[] args) {

                Importer im=new Importer();
                im.address();
        }
}
```

b)Can you give a real time example

person -can be student in a class
-son to the parents
-friend to his friends
-candidate in the interview

c)What are the examples for polymorphism (in java)

method overloading
method overriding
upcasting and calling overridden method

5.What is inheritance?

Inheritance is an object oriented concept.Here a class inherits all the members of the super class other than private members.

A)Can you write a program to demonstrate

b)Can you give a real time example

6.What is encapsulation?
Encapsulation is an object oriented concept. Packing of data and function into a single component and hiding the internal implementation by making the variable private and using public getter and setter methods.

a)Can you write a program to demonstrate

```
class Student
{
      private int age;

      void setAge(int age)
      {
        this.age=age;
      }

      int getAge()
      {
        return this.age;
      }

}
```

b)Can you give a real time example

7.What is the difference b/w an abstract class and an interface
absrtract class is a class which can contain both absrtract methods and concrete methods
interface is a type(non primitive) which contains only abstract methods.

A class can extend an abstract class by keyword "extends"
A class can implement an interface by keyword "implements"

in abstract class abstract methods should be declared with keyword abstract
in interface the methods are by default abstract

in abstract class ,class should be declared with keyword abstract
in interface , it is by default abstract

in abstract class,abstract methods can have all access specifier other than private
in interface ,we can only public access specifier and it is by default public

in abstract class we can have both static and instance variables
in interface ,we have only static variables and by default it is public static and final

8.What is a class?
class is a blueprint or a template to create an object
What is an object?
object is an instance of a class

9.What are the members of a class?
variable ,methods and inner classes

10.What are variables?
variable are named memory location which can hold value and we can change the value any number of times during execution

11.What are methods?
Methods are definition block which represents action or behaviour.

12.What is method overloading?with example

In a class if we have more than one method with same name and different signature is called method overloading. The signature should differ in terms of no of arguments, types of arguments or sequence of arguments

```
class A1
 {
     void paint(int no_sides)
     {
     System.out.println("Code for writing a shape with " + no_sides +  " sides");
     }

     void paint(int no_sides,String color)
     {
     System.out.println("Code for writing a shape with  "  + no_sides + " sides and color " +
color);
     }
 }


   public class Demo3 {

     public static void main(String[] args) {

                A1 a1=new A1();
                a1.paint(3);
                a1.paint(3, "red");

     }
 }
```

13.What is method overriding?---,,----

Redefining a method in the sub class which is already present in the super class.

For that

1.Method should be non static

2.There should be is a relationship

3.Method name and signature should be same

4.Return type should be same // or covariant type

```
class Company

     void address()
     {
            System.out.println("Company address");
     }
}
class Importer extends Company
{
     void address()
     {
            super.address();
            System.out.println("Importer address");
     }
```

14.What are the differences b/w static members and instance members?

static members are declared with the keyword static

non static members are declared with the without keyword static

static members belongs to class
non static members belongs to object

static members are only 1 per class
non static members ,each object has its own copy of non static members

static members are loaded when the class is loaded
non static members are loaded when the object is created

static members are loaded only once when the class is loaded
non static members are loaded when ever an object is created

static members are accessed using ClassName.
non static members are accessed using refvar.

15.What is an array?How do you find the size?
array is an object which holds multiple values of same type

create an array and call its length field using ref var

```
int arr[]={100,200,300};
        System.out.println(arr.length);
```

16.What are wrapper classes?
wrapper classes are those classes which are used to convert primitives into object
17.Where is it used?
It is used vastly and majorly in Collections as collection classes
take only object as arugments

18.How do you convert a primitive into an object?
By passing primitive into wrapper class constructor

19.How do you convert a wrapped object to primitive?
by using one of the methods like
byteValue()
shortValue()
intValue()
longValue()

20.How do you convert int to a String?
```
int i=100;
String str=Integer.toString(i);
```

21.How do you convert String to an int?
```
String s1="100";
int i=Integer.parseInt(s1);
```
22.How do you convert double to a String?
```
Double.toString(12.34)
```
23.How do you convert char to a String?
```
Character.toString('A');
```
24.How do you convert a String to a char?
```
String str="Hello";
char ch=str.charAt(0);
```
25.What is the use of inheritance?
Code reusability and reduced effort.
26.What is the use of methods?
Code reusability.We can put the code in a method and call it any number of times.

18.Write a java program to fetch unique values of the below array
{0,0,0,1,2,1,0,3,4,5,5,5,4,6,7,8}public class FetchUniqueValsInArray {

```
        int[] arr={10,20,30};
for(int i=0;i<arr.length;i++)
        arr[i]=0;
        for(int i:arr)
                Sop(i);
```

25. How do you remove 3rd element from an Array.?

```
        int [] arr{10,20,30};
        arr[2]=0;
```

26.How do swap values in two int variable?

```
        int x=20,y=10;
        int temp=0;
        temp=x;
        x=y;
        y=temp;
```

27.How do swap values in two int variable without using temp variable?

```
        int x=10,y=20;
        x=x+y;
        y=x-y;
        x=x-y;
```

28.How do you find the size/length of an array?

using array variable.length field

ex:

```
        int arr[]={10,20,30};
            system.out.println(arr.length);
```

29 wap to print an array in reverse

Printing in reverse is not reversing an array.We need to use simple for and print from last index to first index

29.How do you reverse an array?

```
public class ReverseAnArray {
        public static void main(String[] args) {
                int arr[]=new int[]{10,20,30,40,50};
                int startindex=0;
                int endindex=arr.length-1;
                int temp=0;
                for(int i=0;i<2;i++)
                {
                        temp=arr[startindex];
                        arr[startindex]=arr[endindex];
                        arr[endindex]=temp;

                        startindex++;
                        endindex--;

                }

                for(int i=0;i<arr.length;i++)
                        System.out.println(arr[i]);
```

30. WAP toPrint Odd elements of an array.?

```
public class OddNosInArray {
        public static void main(String[] args) {
                int arr[]={10,20,30,40,50,60};
                for(int i=1;i<arr.length;i+=2)
                        System.out.println(arr[i]);

}}
```

30a.WAP to print odd values present in the array

```
                int arr[]={10,21,30,45,55,60};
                        for(int i=0;i<arr.length;i++)

                        if(arr[i]%2!=0)
                          System.out.println(arr[i]);}
```

```
        public static void main(String[] args) {
                int arr[]={0,0,0,1,2,1,0,3,4,5,5,5,4,6,7,8};
                Set set=new LinkedHashSet<>();
                for(int val:arr)
                {
                    set.add(val);
                }

                //System.out.println(set);
                int arr1[]=new int[set.size()];
                int index=0;
                for(Object o:set)
                {
                 // System.out.println(o);
                     arr1[index++] =((Integer)o).intValue();
                }

                System.out.println(Arrays.toString(arr1));
        }
}
```

19.what is abstraction?write a sample code to explain its usage?

20.write a java program to reverse a string ?

21.write a java program to reverse a string without reverse method?

```
public class ReveseAString {
        public static void main(String[] args) {
                //without using reverse method
                String str="JAMES BOND";
                String str1="";
                for(int i=str.length()-1;i>=0;i--)
                        str1=str1+str.charAt(i);

                System.out.println(str1);
                //alternate way --using reverse method
        String str2=new StringBuffer(str).reverse().toString();
                System.out.println(str2);
                }}
```

22.write a java program to reverse a number

```
public class ReverseANumber {
public static void main(String[] args) {          //1st way

                int i=1234;

                i=   Integer.parseInt(new StringBuffer(Integer.toString(i)).reverse().toString());
                System.out.println(i);
                //2nd way
                System.out.println(reverse(i));
                }
        static int reverse(int i)
        {
                int reverse=0;

                while(i>0)
                {
                    int remainder=i%10;
                    reverse=remainder + reverse*10;
                    i=i/10;
                        }return reverse;
        }}
```

3. How do you remove all the values from an Array.?

we cannot remove the values. But we can assign a new value which can also be a Defau value of type of an Array.

ex: int Arr[] we can set Default values to 0

24. WAP to reset the Array.?

31.How do you sort an array using bubble sort?

```
public class BubbleSort {
        public static void main(String[] args) {
                int arr[]=new int[]{23,17,54,12,29};
                System.out.println("---before sorting----------");
                System.out.println(Arrays.toString(arr));
                int temp=0;
                boolean flag=true;
                while(flag)
                {
                        flag=false;
                        for(int i=0;i<arr.length-1;i++)
                        {
                            if(arr[i]>arr[i+1])
                            {
                                temp=arr[i];
                                arr[i]=arr[i+1];
                                arr[i+1]=temp;
                                flag=true;
                            }}}
                System.out.println(Arrays.toString(arr));
                }}
```

31.Fibonacii series

```
public class FibonacciSeries {
        public static void main(String[] args) {
                int first=0;
                int second=1;
                int third=0;
                System.out.print(first + " " +  second + " ");
                while(first+second<=100)
                {
                        third=first+second;
                        System.out.print(third + " ");
                        first=second;
                        second=third;
                        }}}
```

32:wap to sort the sentence based on length of the words in a given sentence

```
public class WordSortInSentence {
        public static void main(String[] args) {
                String str="today is a bright sunny day";
                String words[]=str.split(" ");
                System.out.println("-------Before sorting---------");
                System.out.println(Arrays.toString(words));
                String temp="";
                boolean flag=true;

                while(flag)
                {
                        flag=false;

                        for(int i=0;i<words.length-1;i++)
                        {
                                if(words[i].length()>words[i+1].length())
                                {
                                  temp=words[i];
                                  words[i]=words[i+1];
                                  words[i+1]=temp;
                                  flag=true;

}}}
                System.out.println("--------after sorting---------");
                System.out.println(Arrays.toString(words));

        }}
```

33.wap to sort the sentence based on lexical/alphabetical order of the words in a given sentence

```
public class SenctenceSortBasedAlphabetically {
public static void main(String[] args) {
                String str="today is a bright sunny day";
                 String words[]=str.split(" ");
                System.out.println("-------Before sorting----------");
                 System.out.println(Arrays.toString(words));
                String temp="";
                boolean flag=true;
                 while(flag)
                 {
                        flag=false;

                        for(int i=0;i<words.length-1;i++)
                        {
                                if(words[i].compareTo(words[i+1])>0)
                                {
                              temp=words[i];
                              words[i]=words[i+1];
                              words[i+1]=temp;
                              flag=true;
                }}}
                 System.out.println(Arrays.toString(words));
        }}
```

34.How do you remove multiple spaces?

```
public class RemoveSpaceInSentence {
public static void main(String[] args) {
        String str="Hello  I   am    learning java      and        Selenium";
        String words[]=str.split(" ");
        String str1="";
                for(int i=0;i<words.length;i++)
                {
                        if(words[i].length()>0)
                          str1=str1+words[i] + " ";
                }
                System.out.println(str1);
}}
```

35.I have an array with duplicate values.How do you print unique values
(non duplicate) from an array
and sort it according to your preference

```
String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google",
"Facebook","Tesla","eCommerce","mCommerce"};
public class MakeUniqueAndSortInStringArray {
        public static void main(String[] args) {
                String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google","Facebook","Tesla",
                                "eCommerce","mCommerce"};

                //1st way

                Set hs1=new HashSet();
                for(String s:str)
                {
                        hs1.add(s);
                }
                System.out.println(hs1);

                 2nd way

                Set hs2=new HashSet(Arrays.asList(str));
                System.out.println(hs2);
```

```
Object[]  objs=hs2.toArray();
Object temp="";
boolean flag=true;

while(flag)
{
flag=false;
        for(int i=0;i<objs.length-1;i++)
        {
                if(((String)objs[i]).compareTo((String)objs[i+1])>0)
                {
                        temp=objs[i];
                        objs[i]=objs[i+1];
                        objs[i+1]=temp;
                        flag=true;
}}}
System.out.println("--------After sorting----------------");
System.out.println(Arrays.toString(objs));
}}
```

36.Check if a number is prime or not

```
public class CheckPrime {
public static void main(String[] args) {
int num=9;
boolean flag=false;
for(int i=2;i<num/2;i++)
{
if(num%i==0){
flag=true;
break;}}
        if(flag)
        System.out.println("Its not a prime");
else
System.out.println("Its a prime");
        }}
```

37.print prime numbers from 1 to 1000

```
package com.qspiders.intprograms1;

public class PrimeNumberSeries {
public static void main(String[] args) {
        int num1=1000;
        int num=2,count=0;
        boolean flag;
        // 1st n prime numbers
        for( ;count<num1;count++)        //prime numbers of range
        {
                flag=true;

                for(int i=2;i<num;i++)
                {
                        if(num%i==0)
                        {
                                flag=false;
                                break;
                        }
                }


                if(flag)
                {
                        System.out.print(num+" ");
                        //count++;
                }
                        num++;
}}
```

38.Wap to print fibonacci series

```
public class FibonacciSeries {

        public static void main(String[] args) {

                int n1=0,n2=1;
                int n3=0;

                System.out.print(n1 + " " + n2);

                while(n1+n2<100)
                {
                        n3=n1+n2;
                         System.out.print(" " + n3 );
                        n1=n2;
                        n2=n3;
                }}}
```

39.Wap to print the factorial of a given number

```
public class Factorial {

        public static void main(String[] args) {

                int n=5;
                int fact=1;

                for(int i=n;i>=1;i--)
                {
                   fact=fact*i;
                }

                System.out.println("Factorial of " + n + " is "  + fact);
        }}
```

40.Delete values from an array
We cannot delete but can reset to default values

```
public class DeleteAllValueInArray {
        public static void main(String[] args) {

                int arr[]={4,7,8,12,9};

                System.out.println(Arrays.toString(arr));

                for(int i=0;i<arr.length;i++)
                {
                        arr[i]=0;

                }
                System.out.println(Arrays.toString(arr));

        }}
```

1.What is Mutable and Immutable?
Mutable means changeable
Immutable means unchangeable

Mutable objects , once created can be changed or updated
Immutable objects, once created cannot be changed or updated

2.what do you prefer, String or StringBuffer?
we prefer StringBuffer over String class.In String class
for every String manipulation new String object is created.
In StringBuffer any manipulation same object is updated

3.what is the difference b w StringBuffer and StringBuilder?

StringBuffer is synchronized i.e. thread safe. It means two threads can't call the methods of StringBuffer simultaneously.
StringBuilder is non-synchronized i.e. not thread safe. It means two threads can call the methods of StringBuilder simultaneously.
StringBuffer is slow since it is synchronized
StringBuilder is faster since it is not synchronized
4.If String is immutable then how can we do concat()?
Old object is not updated instead a new String Object is created
5.Can we store StringBuffer object in a String?
we cannot store but we can convert StringBuffer into String using toString() like

```
StringBuffer sb1=new StringBuffer(sb1);
String s=sb1.toString();
```

6.is String,StringBuffer and StringBuilder final class?why?
Yes, they are all final.It has been designed so as not be able to extend and override already existing methods.Instead we can access methods by creating object and calling through ref var.

7.if we can access static members through a classname and instance members through reference variable then why do we need to extend a class?

if we need to improve or redesign a class ,we need not start from scratch instead we can extend the existing class and override the inherited methods partially or fully based on new requirements
41.What is the difference b/w array and collections
(i) Arrays are fixed in size.And can have values/objects of same type
(ii) Collection classes can increase or decrese in size and can hold objects of same type or of different types

(2) In array we can have either primitive array or array of objects
But in collections we can hold only objects

(3) In array we cannot delete the content but can reset to default value.
In collection objects we can delete the objects
42.How do you convert an array to a collection
a)

```
Integer arr[]={4,5,6,7,8};

//soln 1:
//   List lst=Arrays.asList(arr);//Here we cannot add new objects

//soln 2:
ArrayList lst=new ArrayList<>(Arrays.asList(arr));
System.out.println(lst);
```

b)

```
int arr[]={4,5,6,7,8};

ArrayList lst=new ArrayList<>();

for(int a:arr)
        lst.add(a);

System.out.println(lst);
```

43.How do you convert an ArrayList to a LinkedList
ans: create an arraylist object and pass it to linkedlist constructor

```
ArrayList lst=new ArrayList<>();
```

```
lst.add(10);
lst.add(50);
lst.add(20);

LinkedList lst1=new LinkedList<>(lst);
System.out.println(lst1);
```

44.How do you convert a linkedlist to an arraylist
ans:Create a LinkedList object and pass it to ArrayList constructor

```
LinkedList lst=new LinkedList<>();
lst.add(10);
lst.add(50);
lst.add(20);



ArrayList lst1=new ArrayList<>(lst);
System.out.println(lst1);
```

45.How do you convert int to a String?

```
int i=100;
String s=Integer.toString(i);
System.out.println(s);
```

46.String to int?

```
String s1="100";
int i=Integer.parseInt(s1);
System.out.println(i);
```

47.char to String

```
char ch='A';
String s=Character.toString(ch);
System.out.println(s);
```

48.String to char

```
String s="CAM";
char ch=s.charAt(0);
char ch1=s.charAt(1);
System.out.println(ch);
System.out.println(ch1);
```

49.double to String

```
double d=12.45;
String s=Double.toString(d);
System.out.println(s);
```

50.String to double

```
String s="12.45";
double d=Double.parseDouble(s);
System.out.println(d);
```

51.any object to String
use refvar.toString() method

```
Orange o1=new Orange();
o1.toString();
```

52.What is the super most class?
Object class
53.How do you convert an array to a String?

using Arrays.toString(arr)

54WAP to find the number of characters in given number or total numbers in a given number.?

```
int i=123;
        int cntr=0;

        while(i>0)
        {
                i=i/10;
                cntr++;
        }
        System.out.println(cntr);
```

How do you convert an array to a list?

If it is a non primitive array then

```
Integer arr[]={5,2,7,4,1};

List lst =new ArrayList(Arrays.asList(arr));
System.out.println(lst);
```

If it is a primitive array then

```
int arr[]={5,2,7,4,1};

List lst=new ArrayList<>();

for(int i=0;i<arr.length;i++)
        lst.add(arr[i]);

System.out.println(lst);
```

55.How do you remove duplicates from an array?

```
int arr[]={4,5,5,6,7,8,8,4,3,2,9};

Set<Integer> hs=new LinkedHashSet();

for(int i:arr)
  hs.add(i);

System.out.println(hs);//printing LinkeHashSet object

int arr1[]=new int[hs.size()];

int i=0;
for(Integer ii:hs)
    arr1[i++]=ii.intValue();

System.out.println(Arrays.toString(arr1));//printing array with unique values
```

56. How do you convert Set to a List.?

```
List list=new LinkedList(setobject);
```

57. How do you convert List to Set.?

```
Set set = new HashSet(listobject);
```

58.Create an object of list

```
List lst=new ArrayList();
List lst=new LinkedList();
```

59.Create an object of Set

```
Set set=new HashSet<>();
Set set=new TreeSet<>();
```

60. How to generate Random numbers which will return a double.?

```
System.out.println((int)(10*Math.random()));
```

61.How to generate unique random numbers?

```
public class Conversion {

        public static void main(String[] args) {

                Set set=new LinkedHashSet<>();

                while(set.size()<10)
                {
                        int i=(int)(10*Math.random());
                        if(!set.contains(i))
                            set.add(i);

                }

                System.out.println(set);


        }
}
```

62.Can we have a static class?

yes,we can have inner class as static

63.Can we have a private class

yes,we can have inner class as private

63B.Can we create an object of Abstract class?

No,

We can create only concrete sub class.

If they insist it is possible then write this program

```
abstract class Fruit
{
        abstract void print();
}
public class AbstractClassObject {

        public static void main(String[] args) {

                Fruit f=new Fruit(){
                        void print()
                    {

                    }
                };
        }
```

Here also, it is not Fruit object but anonymous subclass object.

64. Can we have an array of an Abstract Class Interface.?

yes we can but we should pass concrete sub class objects to the array

```
Interface Fruit{}
Class Apple Implements Fruit{}
```

```
Class Demo{
psvm(){
        Fruit[] fruit=new Fruit[3];
        fruit f={new Apple()};
}
```

65. WAP to Extract Number from a String.?

```
String msg="You are about to delete 300 tasks. please Confirm.";

System.out.println(msg.substring(msg.indexOf("delete")+7,msg.indexOf("tasks")-1));
System.out.println(msg.substring(msg.indexOf("delete")+"delete".length()+1,msg.indexOf("tasks")-1));
```

66.WAP to find number of specified Alphabet in a given String.?

```
String str= "Shankar Mahadevan";
int cntr=0;

for(int i=0;i<str.length();i++)
{
        if(str.charAt(i)=='a')
                cntr++;
}

System.out.println(cntr + " times");

//2nd way

String str= "Shankar Mahadevan";

int i=0;
int index=0;
int cntr=0;

while((index=str.indexOf('a', i))!=-1)
{
        cntr++;
        i=index+1;
}

System.out.println("No of occurances are " + cntr);
```

```
Boolean flag = false;
for(int i=0; i<str.length(); i++)
  if (str.charAt(i) > 47 && str.charAt(i)<
  {
    SOP(str.charAt(i));
    flag=true;
  }
  else {
    SOP(
    flag = false;
  }
```

67WAP to find number of time "the" is repeated in a given String.?

```
String str= "the bird is beautiful and the girl is watching the bird
             and boy is watching the bird";

String srch="the";
int i=0;
int index=0;
int cntr=0;

while((index=str.indexOf("the", i))!=-1)
{
        cntr++;
        i=index+srch.length();
```

```
}
System.out.println("No of times \"" + srch + "\" is " + cntr + " times");
```

1.Can you explain WebDriver driver=new FirefoxDriver();

new FirefoxDriver() is the FirefoxDriver class object
driver is the ref var of WebDriver
WebDriver is an interface

2.What is happening here?
upcasting . FirefoxDriver is the sub class of WebDriver and we can upcast it to an interface
3.What does driver.findElement return?
it return WebElement object
4.But WebElement is an interface
it return concrete subclass object
5.What does driver.findElements() return?
List of WebElement
6.Is it an arraylist or linkedlist?How will you find out?

```
List<WebElement> lst=driver.findElements(By.xpath("//a"));
System.out.println(lst.getClass().getName());
```

7.What does driver.findElement() or driver.findElements() take as an argument?
By class Object

8.What is By class?
By class is an abstract class with 8 static methods which return By class object(i.e. concrete subclass object)

9.Can you explaing By.xpath() or By.linktext()?
By is an abstract and xpath is a static method which returns By object

10.What does driver.getWindowHandles() return
It returns a Set<String>
11.What object oriented concepts do we use in Selenium?
12.Can main method be overloaded?
yes,
13.Can we override main method?
Yes, we can redifine main method and since it is static we call it hiding

14.Can we have concerete method in an interface?
15.Can we have constructor in an interface?
No , we cannot have
16.Can we make main method final?
yes, we can make main method final. It cannot be redefined in the subclass.
17.Can we make main method private?
Yes.from JDK 1.8
18.Can we print in reverse using enhanced for loop?
No
19.Can we assign a value to array using enhaned for loop?
No

1.write a script to print the multiples of 5?
2.Write a program to find 2 a in your name

1. There are 4 menu items(tabs), how do you find 2nd menu item?.. no id, class or any attribute.. don't use xpath.. how do you find it
2. Different ways of selecting text from from drop box
3. Do you know about finally? If a runtime exception occurs in catch block, what happens? Will it go to finally or not.

4. Write a java program to achieve data driven testing in selenium
5. What is client server application, UI application and desktop application
6. Difference between architecture and framework.
7. Do you know about collections
8. Asked me to write 2 classes on board ... static and non static Methods inside it...then combinations of accessing them.
9. WAP to reverse a string

Java questions asked in VeriFone.

1. What is the difference between function overloading and function overriding?
2. Write a program to swap 2 nos. without using temp variable?
3. Set, Linkedlist, hashmap differences?
4. WAP to count the repeated numbers present in an array?
5. Arraylist usage in selenium?
6. Types of expections?
7. When there is an expection in an program, catch block should not execute, which statement should be used?
8. What is deadlock?
9. Where you have been used Threads concepts in your framework?
10. start () and run () difference.

Manual questions

1. What is smoke testing
2. Sanity testing
3. Regression testing
4. Tracebility matrix
5. Bug life cycle
6. STLC

PROGRAMMING CLASS

How will you tell if a word is a number or not?

```
String str="123ABC";

try{
        Integer.parseInt(str);
        System.out.println(str + "  is  a number");
}
catch(NumberFormatException  e)
{
        System.out.println(str + " is not a number");
}
```

1. What is Array.?

Array is an Object which can hold multiple values of same type.

2. How do you remove all the values from an Array.?

We cannot remove the values. But we can assign a new Value which can also be a Default Value of type of an Array.

ex. int Arr[] we can set default values to 0.

3. WAP to reset the Array.?

```
int[] arr={10,20,30};
for(int i=0;i<arr.length;i++)
arr[i]=0;
for(int i:arr)
        Sop(i);
```

4. How do you remove 3rd element from an Array.?

```
int [] arr{10,20,30};
arr[2]=0;
```

5. WAP to reverse an Array.?

```
int[] arr=(1,2,3,4,5);
int temp=0;
int start =0,end=arr.length-1;
for(int i=0;i<arr.length/2;i++){
        temp=arr[start];
        arr[start]=arr[end];
        arr[end]=temp;
start++;
end--;
}
for(int i:arr)
        sop(i);
```

6. Wap to print even elements of an Array.?

```
public class evenarray {

        public static void main(String[] args) {

                int arr[]={10,20,30,40,50,60,70,80,};

                for(int i=0;i<arr.length;i+=2)
                {
                        System.out.println(arr[i]);
                }
        }
}
```

7. WAP toPrint Odd elements of an array.?

```
public class oddarray {

        public static void main(String[] args) {

                int arr[]={10,20,30,40,50,60,70,80,};

                for(int i=1;i<arr.length;i+=2)
                {
                        System.out.println(arr[i+1]);
                }

        }

}
```

4.wap to find the no of words passed as runtime argument

```
System.out.println(args.length);
```

5.wap to sort an integer array using bubble sort

```
package com.qspiders.bcmm9_11;

import java.util.Arrays;

public class BubbleSort {
```

```
public static void main(String[] args) {

        int arr[]={56,45,78,12,10};

        sort(arr);

        System.out.println("----after sorting----");

        for(int i:arr)
                System.out.println(i);

        System.out.println("----------------------------------");
        arr=new int[]{56,45,78,12,10};

        for(int i:arr)
                System.out.println(i);

  sort1(arr);

        System.out.println("----after sorting----");

        for(int i:arr)
                System.out.println(i);



  }

  static void sort(int arr[])
  {
        int temp=0;
        boolean flag=true;

        while(flag)
        {
                flag=false;

                for(int i=0;i<arr.length-1;i++)
                {
                        if(arr[i]>arr[i+1])
                        {
                                temp=arr[i];
                                arr[i]=arr[i+1];
                                arr[i+1]=temp;
                                flag=true;
                        }

                }

        }
  }


  static void sort1(int arr[])
  {

        for(int j=0;j<arr.length;j++)
        {
                for(int i=0;i<arr.length-1;i++)
```

```
                {
                        int temp=0;
                        if(arr[i]>arr[i+1])
                        {
                                temp=arr[i];
                                arr[i]=arr[i+1];
                                arr[i+1]=temp;
                        }

                }
        }
}
```

6.wap to sort the sentence based on length of the words in a given sentence

```
public class StringArraySort {

        public static void main(String[] args) {

String str="tomorrow is not holiday and you have mock";

            String words[]=str.split(" ");

            System.out.println(str);

            wordsort(words);

            System.out.println(Arrays.toString(words));


        }

        static void wordsort(String[] arr)
        {

                String temp=null;
                boolean flag=true;

                while(flag)
                {
                        flag=false;

                        for(int i=0;i<arr.length-1;i++)
                        {
                                if(arr[i].length()>arr[i+1].length())
                                {
                                        temp=arr[i];
                                        arr[i]=arr[i+1];
                                        arr[i+1]=temp;
                                        flag=true;
                                }

                        }

                }

        }

}
```

7) I have an array with duplicate values.How do you print unique values(non duplicate) from an array and sort it according to your preference

```
String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google","Facebooke","Tesla",
  "eCommerce","mCommerce");

public class IQ1 {

        public static void main(String[] args) {

                String str[]={"Google","Facebook","Tesla","Yahoo","Yahoo","Google",
                                "Facebook","Tesla", "eCommerce","mCommerce"};

                List<String> lst=new ArrayList<>(Arrays.asList(str));
                System.out.println(lst);
                Set<String> set=new HashSet<>(lst);
                System.out.println(set);

                Object objs[]=set.toArray();

                wordsort(objs);

                System.out.println(Arrays.toString(objs));

        }

        static void wordsort(Object[] arr)
        {

                String temp=null;
                boolean flag=true;

                while(flag)
                {
                        flag=false;

                        for(int i=0;i<arr.length-1;i++)
                        {
                                if(((String)arr[i]).compareTo((String)arr[i+1])>0)
                                {
                                        temp=(String)arr[i];
                                        arr[i]=(String)arr[i+1];
                                        arr[i+1]=temp;
                                        flag=true;
                                }

                        }

                }

        }

}
```

12. Check a number whether it is Prime or not.?

```
package com.Qspiders.blackbelt;

public class prime {

        public static void main(String[] args) {
```

```
            int num=9;
            boolean flag=false;
            for(int i=2;i<num/2;i++)
            {
                    if(num%i==0){
                            flag=true;
                            break;
                    }

            }
            if(flag)
            System.out.println("Its not a prime");
            else
                    System.out.println("Its a prime");


        }

}
```

13. Check a Series of Prime Numbers from 1-1000.?

```
//Printing prime series of a certain range

package com.Qspiders.finalmock;

public class PrimeCheck {

        public static void main(String[] args) {

       for(int no=3;no<=1000;no++)
      {
              boolean flag=true;

                for(int i=2;i<=no/2;i++)
                {
                        if(no%i==0)
                        {
                       flag=false;
                       break;
                        }

                }

                if(flag)
                        System.out.println(no + " is prime");

        }
}
```

14. Write a Fibonacci Series from 1-100.?

```
package com.Qspiders.finalmock;
public class seventeen {

        public static void main(String[] args) {
                int n1=0,n2=1,n3=0;

                while(n1<=100)
                {
                        n3=n1+n2;
                        System.out.print(n1+" ");
```

```
                        n1=n2;
                        n2=n3;
                }

        }

}
```

15. WAP fibonacci Series of First 10.?

```
package com.Qspiders.finalmock;
public class seventeen {

        public static void main(String[] args) {
                int n1=0,n2=1,n3=0;
                int cntr=1;

                while(cntr<=10)
                {
                        n3=n1+n2;
                        System.out.print(n1+" ");
                        n1=n2;
                        n2=n3;
                        cntr++;
                }

        }

}
```

16. WAP to print Fibonacci Series by using Recurrsion.?

```
package com.Qspiders.finalmock;

import java.util.Scanner;

public class fibo {

        static int fibo(int num)
        {
                if(num==1)
                        return 0;
                else if(num==2)
                        return 1;
                else
                return fibo(num-1)+fibo(num-2);
        }
        public static void main(String[] args) {

                Scanner sc=new Scanner(System.in);
                int num=sc.nextInt();
                for(int i=1;i<=num;i++)
                System.out.print(fibo(i)+" ");
                sc.close();
        }
}
```

17. WAP to print factorial of given number.?

```
package com.Qspiders.finalmock;

import java.util.Scanner;

public class fifteen {

        public static void main(String[] args) {

                        Scanner sc=new Scanner(System.in);
                        System.out.println("Enter a number");
                        int num=sc.nextInt();
                        int cntr=1;
                        for(int i=1;i<=num;i++)
                        {
                                cntr=cntr*i;
                        }
                        System.out.println(cntr);
                        sc.close();
        }
}
```

18.WAP to print Factorial of a Number by using Recurrsion.?

```
package com.Qspiders.finalmock;

public class sixteen {

        static int fact(int num)
        {
                if(num==1)
                        return 1;
                return num=num*fact(num-1);
        }
        public static void main(String[] args)
        {
                System.out.println(fact(6));
        }
}
```

20. How do you remove all values from an array.? (Biscuit question)
You cannot remove the values but you can assign a new value which can
also be a default value of the type of the array.
if it is an Int array you can set default value to 0.
Double array you can set default value to 0.0 . Non-primitive default value Null.

```
package com.Qspiders.Blackbelt;

public class arrayreset {

        public static void main(String[] args) {

                int arr[] ={20,48,38,29,69};

                for(int i=0;i<arr.length;i++)
                {
                        arr[i]=0;
                }

                for(int i:arr)
                {
                        System.out.println(i);
```

```
            }
        }
}
```

ex:

```
        double temp[] ={28.28973,27.28973,24.3,54.4,23.45};
        temp[2]=0.0;

        Orange o1[]={new orange(),new orange(),new orange(),new orange(),new orange()};
        o1[2]=null;
```

21. WAP to reverse an array.?

```
package com.Qspiders.Blackbelt;

public class reversearray {

    public static void main(String[] args) {

            int arr[]={10,20,30,40,50};

            int start=0;
            int end=arr.length-1;
            int temp=0;
            for(int i=0;i<arr.length/2;i++)
            {
                    temp=arr[start];
                    arr[start]=arr[end];
                    arr[end]=temp;
                    start++;
                    end--;
            }
                    for(int i:arr)
                    {
                            System.out.println(i);
                    }
        }

}
```

Note: Same logic can be used for Odd number Array.

22. Print even elements of an array.?

```
package com.Qspiders.Blackbelt;

public class evenarray {

        public static void main(String[] args) {

                int arr[]={10,20,30,40,50,60,70,80,};

                for(int i=0;i<arr.length;i+=2)
                {
                        System.out.println(arr[i]);
                }


        }

}
```

23. Print Odd elements of an array.?

```
package com.Qspiders.Blackbelt;
```

```
public class oddarray {

        public static void main(String[] args) {

                int arr[]={10,20,30,40,50,60,70,80,};

                for(int i=0;i<arr.length;i+=2)
                {
                        System.out.println(arr[i+1]);
                }

        }

}
```

24. Print the values of an array present at 4th index to 7th index.?

25. WAP to rotate second half of an array.? // also reverse

```
        int start=arr.length/2;
                int end=arr.length-1;
                int temp=0;
                for(int i=arr.length/2;i<(arr.length/2+arr.length/4);i++)
                {
                        temp=arr[start];
                        arr[start]=arr[end];
                        arr[end]=temp;
                        start++;
                        end--;
                }
                        for(int i:arr)
                        {
                                System.out.println(i);
                        }
        }

}
```

26. WAP to reverse an 1st half of an array.?

```
        int start=0;
                int end=arr.length/2-1;
                int temp=0;
                for(int i=0;i<(arr.length/4);i++)
                {
                        temp=arr[start];
                        arr[start]=arr[end];
                        arr[end]=temp;
                        start++;
                        end--;
                }
                        for(int i:arr)
                        {
                                System.out.println(i);
                        }
        }

}
```

27. WAP to rotate an array?

```
package com.Qspiders.Blackbelt;

public class rotatearray {

	public static void main(String[] args) {


		int arr[]={10,20,30,40,50};
			int temp;

		for(int j=0;j<arr.length-1;j++)
		{
			temp=arr[j];
			arr[j]=arr[j+1];
			arr[j+1]=temp;
		}

		for(int i:arr)
		{
			System.out.println(i);
		}

	}
}
```

30. WAP to perform array Addition.?

```
package com.Qspiders.Blackbelt;

public class arrayadd {

	public static void main(String[] args) {

		int arr1[][]={{10,20},{30,40}};
		int arr2[][]={{50,60},{70,80}};

		int arr3[][]=new int[arr1.length][];


			// or // Setting length to 3rd array same as 1st array

		for(int i=0;i<arr1.length;i++)		// this is the right way to do
		{
			arr3[i]=new int[arr1[i].length];
		}
		System.out.println(arr3.length);
		System.out.println("-----------------------------------");


	for(int i=0;i<arr1.length;i++)
	{
		for(int j=0;j<arr1[i].length;j++)
		{
			arr3[i][j]=arr1[i][j]+arr2[i][j];

	System.out.print(arr3[i][j]+" ");
		}
		System.out.println();
	}
```

```
                        // printing an 3rd array of added

        /*
        for(int i=0;i<arr1.length;i++)
        {
                for(int j=0;j<arr1[i].length;j++)
                {
                        System.out.print(arr3[i][j]+" ");
                }
                System.out.println();
        }*/

}

}
```

31. WAP to print a sub Array with a given range
[Hint: Arrays.CopyofRange()]

32. WAP into print a sub Array into another Existing Array i.e., { Copy from one array to another array}

33. How do you convert an array to a String.?
Arrays.toString();

34.How do you convert String to Array.?

Ref_Var.toCharArray();
String ref var;

35.Which array can hold values(objects) of different types.?
Object Array.
ex. object[] arr={new Orange(0,new Apple()};// no primitive

Can we have an array of Interface or abstract class?
Yes, we can create an array and pass concrete sub class objects

```
//assuming Fruit is an interface and Apple and Orange are implementing class

Fruit fruits[]={new Apple(),new Orange(),new  Apple()};
```

41. WAP to find the number of characters in given number or total numbers in a given number.?

```
int i=123,cntr;

while(i>0)
{
        i=i/10;
        cntr++;
}
Sop(cntr);

// convert number into String and find the length
```

42. How do you convert a Char to String.? // Character.toString
43. How do you convert a String to Char.? // Ref.charAt()
44. How do you convert Int to String.? // Integer.toString()
45. How do you convert String to Int.? // Integer.parseInt()
46. How do you convert Set to a List.? // List list=new LinkedList(set);
47. How do you convert List to Set.? // Set set = new HashSet(list);
48. How do you convert ArrayList to LinkedList.? // same above
49. How do you convert LinkedList to ArrayList.? // same as above
50. How do you convert String to Array.? // ref.toCharArray()

51. How do you convert Array to String.? // Arrays.toString(arr);
52. How do you convert Array to ArrayList.? // List lst=new ArrayList(Arrays.aslist(arr));
53. How do you convert Arraylist to Array.? // toArray()
54. How do you find Maximum value of type.?

By using inbuilt fields to a wrapper classes.
Ex. Integer.MIN_VALUE;

wap to print
1
23
456
78910

55. How to generate Random numbers which will return a double.?
System.out.println((int)(10*Math.random()));
56. WAP to generate 10 random numbers.? // OUTPUT can have duplicates also.

```
for(int i=1;i<=10;i++)
System.out.println((int)(10*Math.random()));
```

57. WAP to generate 10 random numbers uniquely.?

```
Set set=new LinkedHashSet<>();

while(set.size()<10)
{
    set.add( (int)((10*Math.random())+1));
};

System.out.println(set);
```

58. WAP to print 65-74.?

```
Set set = new HashSet();
while (set.size() != 10) {
int val = (int) (10 * Math.random())+65;
if (!set.contains(val)) {
System.out.println(val);
set.add(val);
```

59. WAP to generate 100 random numbers.?

```
Set set = new HashSet();
while (set.size() != 100) {
int val = (int) (100 * Math.random());
if (!set.contains(val)) {
System.out.println(val);
set.add(val);
```

60. WAP to check whether a given number is ArmStrong Number or not.?

```
package com.Qspiders.Blackbelt;

import java.util.Scanner;

public class ArmStrong {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);
        int n,sum=0,temp,r;
        n=sc.nextInt();
        temp=n;
        while(temp!=0)
        {
            r=temp%10;
```

```
                sum=sum+r*r*r;
                temp=temp/10;
            }
            if(sum==n)
                System.out.println(n+" is a ArmStrong Number");
            else
                System.out.println(n+" is not a ArmStrong Number");

        }

}
```

61. WAP to concat 2 Arrays.?

```
package com.Qspiders.Blackbelt;

import java.util.Arrays;

public class concatarray {

        public static void main(String[] args) {

            // If we use copy.rangeof it will create a new Object
            int arr1[]={1,2,3,4};
            int arr2[]={5,6,7,8};
                int arr3[]=new int[arr1.length+arr2.length];
            System.arraycopy(arr1, 0, arr3, 0, 4);
            System.out.println(Arrays.toString(arr3));
            System.arraycopy(arr2, 0, arr3, 4, 4);
            System.out.println(Arrays.toString(arr3));

        }

}
```

62. How to convert Integer to Long.?

```
        Long l1 =new Long(100);
            Long l2 =new Long(new Integer(100));
            Long l3=new Long(new Integer(100).longValue());
            System.out.println(l1+"\n"+l2+"\n"+l3);
```

63. Can we make a Class as Static or private?

Only Inner Class

64. What is Top Level Class.?

Top-level class is a Class which is not a memeber to any other class.
Except Inner Class.
(All seperate Classes are different Top-level Classes).
ex.

```
            class A
            {
                class B // Inner-Class
                {
                }
            } // class A is Top-level Class
            class C
            {
            }// class C is a Top-level Class
```

65. What are the types supported by Java.?

2 Types.

[Enum is also a type (special type belongs to Class)].

66. Can we have an array of an Abstract Class/ interface.?
yes we can but we should pass concrete sub class objects to the array

```
Interface Fruit{}
Class Apple Implements Fruit{}
Class Demo{
psvm(){
        Fruit[] fruit=new Fruit[3];
        fruit f={new Apple()};
}
}
```

67. WAP to Extract Number from a String.?

```
String msg="You are about to delete 300 tasks. please Confirm.";
System.out.println(msg.substring(msg.indexOf("delete")+7,msg.indexOf("tasks")-1));

        // or

        String msg="You are about to delete 300 tasks. please Confirm.";
        String[] str = msg.split(" ");
        for (String s : str) {
                //System.out.println(s);
                try {
                        System.out.println(Integer.parseInt(s));
                } catch (NumberFormatException ne) {

                }
        }
```

68. WAP to extract Numbers from given Sentence.?

```
String str = "a6c3ww8zc6";


        String str1 = "";
        for (int i = 0; i < str.length(); i++) {
                char ch = str.charAt(i);
                if (Character.isDigit(ch)) {
                        str1 = str1 + ch;
                }

        }
        System.out.println(str1);
```

69. WAP to separate Numbers And Characters from a given String.
String str=" I got 456 out of 600 in 7th Standard in 2008";

```
        String str1 = "";
        String str2 = "";
        for (int i = 0; i < str.length(); i++) {
                char ch = str.charAt(i);
                if (Character.isDigit(ch)) {
                        str1 = str1 + ch;}
                        else if(Character.isAlphabetic(ch)){
                                str2=str2+ch;}


        }
        System.out.println(str1+" "+str2);
```

70. WAP to find number of time specified alphabet is repeated in a Given String.?

```
String str= "Shankar Mahadevan";

char ch='a';
int index=0;
int cntr=0;
while((index=str.indexOf(ch, index))!=-1)
{
        index++;
        cntr++;
        System.out.println(index);
}

if(cntr>=2)
        System.out.println(cntr+" A's are present");
else
        System.out.println(cntr+" A is present");
```

71. WAP to check whether a given number is Adam's Number or not.?

```
package com.Qspiders.Blackbelt;

public class AdamsNumber {

        public static void main(String[] args) {

                int num = 12, rnum = 0;
                int snum = 0, srnum = 0;
                int n = 0;
                String temp = "";

                snum = num * num;
                n = num;
                while (n != 0) {
                        rnum = n % 10;
                        n = n / 10;
                        temp = temp + "" + rnum;
                }
                // System.out.println(temp);
                rnum = Integer.parseInt(temp);
                srnum = rnum * rnum;
                n = srnum;
                temp = "";
                while (n != 0) {
                        srnum = n % 10;
                        n = n / 10;
                        temp = temp + "" + srnum;
                }
                // System.out.println(temp);
                srnum = Integer.parseInt(temp);
                if (snum == srnum)
                        System.out.println("Adams Number");
                else
                        System.out.println("Not an Adams Number");
        }

}
```

72. WAP to print Adam's Number Between 1-1000.?

```
class AdamsNumber {
```

```
public static void main(String[] args)
{
    AdamsNumber an = new AdamsNumber();
    int i, n, rn;
    int sn, rsn, rrsn;
    System.out.println("List of Adam Numbers under 1000");
    for (i = 10; i < 1000; i++)
    {
        n = i;
        rn = an.ReverseNumber(i);

        if (n == rn)
            continue;

        sn = n * n;
        rsn = rn * rn;
        rrsn = an.ReverseNumber(rsn);

        if (rrsn == sn)
        {
            System.out.println(n);
        }
    }
}
int CountNumberOfDigits(int n)
{
    int numdgits = 0;
    do
    {
        n = n / 10;
        numdgits++;
    }
    while (n > 0);
    return numdgits;
}

int ReverseNumber(int n)
{
    int i = 0, result = 0;
    int numdigits = CountNumberOfDigits(n);
    for (i = 0; i < numdigits; i++)
    {
        result *= 10;
        result += n % 10;
        n = n / 10;
    }
    return result;
}
}
```

73.WAP to print average of the integer array elements and also to print the mean base on odd or even number of elements in the array.?

```
public class ArrayAverage {

    public static void main(String[] args) {

        int[] numbers = new int[]{10,20,15,25,16,60,100,5,7};
```

```
            //to print the average of array elements
            int sum = 0;

            for(int i=0; i < numbers.length ; i++)
                    sum = sum + numbers[i];


            double average = sum / numbers.length;

            System.out.println("Average value of array elements is : " + average);

            //to give you the mean based on odd or even elements
            // in the array
            if (numbers.length % 2==0)
            {
                 int num1pos=numbers.length/2;
                 int num2pos=num1pos +1;
                 double mean=(numbers[num1pos-1]+numbers[num2pos-1])/2;
                 System.out.println(mean);

            }
            else
            {
        int num1pos=numbers.length/2;
        System.out.println(numbers[num1pos]);
            }

        }
}
```

74. WAP to copy a range of Array.?

```
public class ArrayCopy {

        public static void main(String[] args) {

            //copy range to new array
            //20,30,40

             int arr[]={10,20,30,40,50};

             int arr1[]=Arrays.copyOfRange(arr, 1, 4);
             System.out.println(Arrays.toString(arr1));


             //copy range to existing array

             int arr2[]=new int[3];

             System.arraycopy(arr, 3, arr2, 1, 2);
             System.out.println(Arrays.toString(arr2));
        }
}
```

75. WAP to Split an Array.?

```
public class ArraySplit {

        public static void main(String[] args) {
            int[] numbers = new int[]{4,5,1,8,7,3};

            int[] arr1=Arrays.copyOfRange(numbers, 0,3);
```

```
            System.out.println(arr1[0]);
            System.out.println(arr1[1]);
            System.out.println(arr1[2]);
            int[] arr2=Arrays.copyOfRange(numbers, 3,6);
            System.out.println(arr2[0]);
            System.out.println(arr2[1]);
            System.out.println(arr2[2]);


        }

}
```

76. WAP to print all the UNICODE values from 0-128.?

```
for(int i=0;i<=128;i++)
{
        System.out.println(i+" "+ (char)i);
}
```

77. WAP to check whether an Object is referring to an Object.?

```
package com.Qspiders.Blackbelt;

interface Fruit
{

}

class Mango
{

}
public class unicode {

        public static void main(String[] args) {

                Mango m1=new Mango();
                System.out.println(m1 instanceof Mango);
                System.out.println(m1 instanceof Fruit);
                System.out.println(new Mango() instanceof Mango);
                int[] arr={1,2,3};
                System.out.println(arr instanceof int[]);
                                // By using instanceof, checking array object whether it is referring
to an Object or not.

        }

}
```

Note:
// We can use instanceof to check if a ref var is of specified type or its super type...
// above is d ex...

78. What is compareTo().?
compareTo() method belongs to Comparable interface in String Class it has been overridden to compare character by character comparision at any point character at specific index of both the strings is not equal will return the difference of their Unicode Values.(It is non-Static method)

79. What can we pass in if ()parantnesis.?
Boolean value or Boolean Expression
ex. true , false, a>b,

a=b// should not be given bcoz dey r boolean resultant value

80. Can i pass Wrapper Class boolean for if condition.?
yes.

```
Boolean bln=new boolean("true");
if(bln)
System.out.println("hello");/// o/p is hello
```

81. Can i pass compare 2 refference variables in if condition.?
yes.

```
Orange o1=new Orange();
Orange o2=new Orange();
if(o1==o2){}
```

82. What type of variable can we have in switch.?
Primitive - byte , short, int, char.
Wrapper Class - Byte, Short, Integer, Character.
Non-primitive- String, enum

83. Note:
Non-Static Variable also known as Instance variable
Non-primitive Variables also known as Reference variable.

84. What is Dynamic Polymorphism/ Dynamic Method Dispatch.?
It is a type of Polymorphism, where the JVM decides whether to call overridden pr inherited method when we create object of sub-class and call a method which is overridden.

note :
Dynamic Method dispatch -
It is a dynamic polymorphism exhibited when we upcast an object and call the overridden method of the sub-class where in JVM decides to call overridden method or original method.

85. What is Jagged Array.?
It is an Array of arrays where size of each array can vary or differs.
ex:

```
int [][] arr={{1,2},{3,4,5},{6}};
or
int [][] arr=new int[4][];
arr[0]=new int[]{0,1};
arr[1]=new int[1];
```

86. What is Iterator.?
The iterator interface provides a number of methods that are able to iterate over any Collections.

Each Java Collection contains the iterator method that returns an Iterator instance. Iterators are capable of removing elements from the underlying Collections during the Execution.

87. What is the diference between Iterator and ListIterator.?
The differences of these elements are lsited below:
-An Iterator can be used to traverse the Set and List Collections, while the ListIterator can be used only to iterate over the lists.
-The Iterator can traverse a collection only in forward direction, while ListIterator can used to traverse in both the directions.
-The ListIterator implements the iterator interface and contains extra functionality , such as adding an element , replacing an element ,getting the index position of previou element and next element.

88. What are the basic interfaces of Java collections Framework.?
Collection, Set, List, Queue,Map.

91. WAP to Reverse a string and displaying it in array.

```
char[] ch=new StringBuffer("Aravind").reverse.toString().toCharArray();
```

92. WAP to Multiply without using multiply(*) operator.?

```
int n1=10;
int n2=5;
int result;
for(int i=1;i<=n2;i++)
result=result+n1;
sop(result);
```

93. WAP to divide without using divide(/) operator.?

```
int num=26;
int divisor=5;
int result=0;
while((num-divisor)>=0)
{
        result++;
        num=num+divisor;
}
sop(result);
```

94. k whether a String is palindrome or not if not, make it as palindrome.

```
String s1 = "Hello";
        String s2 = new StringBuffer(s1).reverse().toString();
        if (s1.equalsIgnoreCase(s2))
                System.out.println("Palindrome");
        else {
                s1 = s1 + s2;
                s2 = new StringBuffer(s1).reverse().toString();
                if (s1.equalsIgnoreCase(s2))
                        System.out.println("palindrome");
                }
// or

String s1 = "Hello";
        String s2 = new StringBuffer(s1).reverse().toString();
        if (s1.equalsIgnoreCase(s2))
                System.out.println("Palindrome");
        else
                s2 = new StringBuffer(s2).reverse().toString();
        if (s1.equalsIgnoreCase(s2))
                System.out.println("palindrome");
```

write a program to display the following sequence

```
3
7 21
15 45 75
31 93 155 217
```

Pattern-50

final mock Programs.

```
package com.qspiders.pack1;

class Pattern
{
    public static void main(String[] args)
    {
        int val=3;

        int vertincrmnt=4;
        int horizincrmnt=3;

        for(int i=1;i<=4;i++)
```

```
        {
            for(int j=1;j<=i;j++)
            {

                if(j==1)
                {
                    System.out.print(val);

                }
                else if(j!=1)
                {
                    System.out.print(val*horizincrmnt);
                    horizincrmnt=horizincrmnt+2;
                }

            }
            System.out.println();
            val=val+vertincrmnt;
            vertincrmnt=vertincrmnt+(4*i);
            horizincrmnt=3;

        }
    }
}
```

write a program to check if given number is a mutliple of 8

```
import java.util.Scanner;

public class DivisibleBy8 {

        public static void main(String[] args) {

                Scanner sc=new Scanner(System.in);
                System.out.println("Enter a number");
                int num=sc.nextInt();

            if(num%8==0)
                    System.out.println("Divisible by 8");
            else
                    System.out.println("Not divisible by 8");
        }
}
```

write a program to convert String to array
Pink@Black@Blue@Brown

Split
Substring
CharAt
to uppercase
to lowercase
indexOf
contains
Format

Comparable should be used when you compare instance of the same class. Comparator can be used to compare instance of different classes.
Comparable is implemented by a class which needs to define a natural ordering for its objects. eg:- String implements Comparable
Comparable → compareTo(obj) → same
Comparator → compare(obj1, obj2) →