Alva's Institute of Engineering and Technology
Mijar, Moodbidri, Managalore
Department of CSE
Subject: Object oriented Concepts- 15 CS 45
Class: IV B.E – CSE A sec and B sec

Assignment III Evaluation Key

1. **Java example program to remove all vowels from a String**

```
package inheritanceInterviewPrograms;
public class RemoveVowels {

   /**
    * @www.instanceofjava.com
    * @String interview programs asked in
interviews
    * @Remove vowels from a string in java
    */

 public static void main(String[] args) {

       String str = "RemoveVowels";
       String resustr =
str.replaceAll("[aeiouAEIOU]", "");
       System.out.println(resustr);

   }

}
```

o/p

RmvVwls

2. **Print 1 to 10 without using recursion in java?**

```
package com.instanceofjavaTutorial;
class PrintDemo{

public static void recursivefun(int n)
{

  if(n <= 10) {

     System.out.println(n);
      recursivefun(n+1);   }
}

public static void main(String args[])
{

recursivefun(1);

 }

}
```

Output:

1
2
3
4
5
6
7
8
9
10

3. **Write a Basic java example program to find area of circle**

```
package com.BasicJavaProgramsExamples;
import java.util.Scanner;
public Class AreaOfCirle{


public static void main(String args[]) {

int radius = 0;
Scanner in= new Scanner(System.in);
System.out.println("Please enter radius of a
circle");

   radius=in.nextInt();

/*
 * where r is a radius of a circle then Area of a
circle is
 *Area= pi * r * r
 *
 */

   double area=Math.PI* radius * radius;

   System.out.println("Area of the circle ="+area);

}
}
```

Output:
Please enter radius of a circle
23
Area of the circle =1661.9025137490005

4. **Program to print prime numbers in java**

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

int num=50;
int count=0;

for(int i=2;i<=num;i++){

count=0;

for(int j=2;j<=i/2;j++){

if(i%j==0){
count++;
break;
}

}
 if(count==0){
            System.out.println(i);
                  }

}

}

}
```

Output:

```
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
```

5. **Program: Write a program to reverse a string using recursive algorithm**

Description:
You should not use any string reverse methods to do this.

```
package com.java2novice.algos;

public class StringRecursiveReversal {

   String reverse = "";

   public String reverseString(String str){

      if(str.length() == 1){
         return str;
      } else {
         reverse += str.charAt(str.length()-1)
               +reverseString(str.substring(0,str.lengt
h()-1));
         return reverse;
      }
   }

   public static void main(String a[]){
      StringRecursiveReversal srr = new
StringRecursiveReversal();
      System.out.println("Result:
"+srr.reverseString("Java"));
   }
}
```

Output:
Result: avaJ

6. **Write a program to reverse a number using numeric operations. Below example shows how to reverse a number using numeric operations.**

```
public class NumberReverse {

   public int reverseNumber(int number){

      int reverse = 0;
      while(number != 0){
         reverse = (reverse*10)+(number%10);
         number = number/10;
      }
      return reverse;
   }

   public static void main(String a[]){
      NumberReverse nr = new NumberReverse();
      System.out.println("Result:
"+nr.reverseNumber(178));
   }
}
```

Output:
Result:871

7. **Program: Write a program to convert decimal number to binary format.**

```
package com.java2novice.algos;

public class DecimalToBinary {

   public void printBinaryFormat(int number){
      int binary[] = new int[25];
      int index = 0;
      while(number > 0){
         binary[index++] = number%2;
         number = number/2;
      }
      for(int i = index-1;i >= 0;i--){
         System.out.print(binary[i]);
      }
   }

   public static void main(String a[]){
      DecimalToBinary dtb = new
DecimalToBinary();
      dtb.printBinaryFormat(25);
   }
}
```

Output:
```
11001
```

8. Program: Write a program to find top two maximum numbers in a array

Description:
Write a program to find top two maximum numbers in the
given array. You should not use any sorting functions. You
should iterate the array only once. You should not use any
kind of collections in java.

```
package com.java2novice.algos;

public class TwoMaxNumbers {

   public void printTwoMaxNumbers(int[] nums){
      int maxOne = 0;
      int maxTwo = 0;
      for(int n:nums){
         if(maxOne < n){
            maxTwo = maxOne;
            maxOne =n;
         } else if(maxTwo < n){
            maxTwo = n;
         }
      }
      System.out.println("First Max Number:
"+maxOne);
      System.out.println("Second Max Number:
"+maxTwo);
   }
   public static void main(String a[]){
      int num[] = {5,34,78,2,45,1,99,23};
      TwoMaxNumbers tmn = new
TwoMaxNumbers();
      tmn.printTwoMaxNumbers(num);
   }
}
```

Output:
```
First Max Number: 99
Second Max Number: 78
```

9. Program: How to swap two numbers without using temporary variable?

```
package com.java2novice.algos;

public class MySwapingTwoNumbers {

   public static void main(String a[]){
      int x = 10;
      int y = 20;
      System.out.println("Before swap:");
      System.out.println("x value: "+x);
      System.out.println("y value: "+y);
      x = x+y;
      y=x-y;
      x=x-y;
      System.out.println("After swap:");
      System.out.println("x value: "+x);
      System.out.println("y value: "+y);
   }
}
```

Output:
```
Before swap:
x value: 10
y value: 20
After swap:
x value: 20
y value: 10
```

10. Program: Write a program to convert binary to decimal number.

```
package com.java2novice.algos;

public class BinaryToDecimal {

   public int getDecimalFromBinary(int binary){

      int decimal = 0;
      int power = 0;
      while(true){
         if(binary == 0){
            break;
         } else {
            int tmp = binary%10;
            decimal += tmp*Math.pow(2, power);
            binary = binary/10;
```

```
            power++;
          }
       }
       return decimal;
   }

   public static void main(String a[]){
      BinaryToDecimal bd = new
BinaryToDecimal();
      System.out.println("11 ===>
"+bd.getDecimalFromBinary(11));
      System.out.println("110 ===>
"+bd.getDecimalFromBinary(110));
      System.out.println("100110 ===>
"+bd.getDecimalFromBinary(100110));
   }
}
```

Output:
11 ===> 3
110 ===> 6
100110 ===> 38

11. Program: Write a program to find sum of each digit in the given number using recursion. -

```
package com.java2novice.algos;

public class MyNumberSumRec {

   int sum = 0;

   public int getNumberSum(int number){

      if(number == 0){
         return sum;
      } else {
         sum += (number%10);
         getNumberSum(number/10);
      }
      return sum;
   }

   public static void main(String a[]){
      MyNumberSumRec mns = new
MyNumberSumRec();
      System.out.println("Sum is:
"+mns.getNumberSum(223));
   }
}
```

12. Java example program to demonstrate super call execution from sub class constructor to super class constructor

```
1.  package com.superkeywordinjava;
2.   public Class SuperDemo{
3.
4.  SuperDemo(){
5.  System.out.println("Inside super class
    constructor");
6.  }
7.
8.  }
```

```
1.  package com.superkeywordinjava;
2.  public Class Subdemo extends
    SuperDemo{
3.
4.  Subdemo(){
5.  System.out.println("Inside sub class
    constructor");
6.  }
7.
8.  public static void main (String args[]) {
9.   Subdemo obj= new Subdemo();
10.
11.
12. }
13. }
```

Output:

```
1.  Inside super class constructor
2.  Inside sub class constructor
```

13. **Java interview programming question on this keyword.**

```
1.  package
    thiskeywordinterviewprograms.java;
2.  public class ThisDemo {
3.
4.     int a;
5.     int b;
6.
7.  ThisDemo(int a, int b){
8.
9.     this.a=a;
10.    this.b=b;
11.
12. }
13.
14. public static void main(String[] args) {
15.
16.    ThisDemo obj = new ThisDemo(10,
    20);
17.
18.     System.out.println(obj.a);
19.     System.out.println(obj.b);
20.
```

```
}

}
```

o/p

```
10
20
```

14. Super keyword java programs for interview

```
package com.superkeywordinjava;
 public Class SuperDemo{

int a,b;

}
package com.superkeywordinjava;
public Class Subdemo extends SuperDemo{
int a,b;
void disply(){

super.a=10;
super.b=20;

System.out.println(a);
System.out.println(b);
System.out.println(super.a);
System.out.println(super.b);

}

public static void main (String args[]) {
 Subdemo obj= new Subdemo();

obj.a=1;
obj.b=2;

obj.disply();



}
}
```

o/p

```
1
2
10
20
```

22 sorting through selection sort

```
/ Java program for implementation of Selection
Sort
class SelectionSort
{
    void sort(int arr[])
    {
        int n = arr.length;

        // One by one move boundary of unsorted
subarray
        for (int i = 0; i < n-1; i++)
        {
            // Find the minimum element in unsorted
array
            int min_idx = i;
            for (int j = i+1; j < n; j++)
                if (arr[j] < arr[min_idx])
                    min_idx = j;

            // Swap the found minimum element with
the first
            // element
            int temp = arr[min_idx];
            arr[min_idx] = arr[i];
            arr[i] = temp;
        }
    }

    // Prints the array
    void printArray(int arr[])
    {
        int n = arr.length;
        for (int i=0; i<n; ++i)
            System.out.print(arr[i]+" ");
        System.out.println();
    }

    // Driver code to test above
    public static void main(String args[])
    {
        SelectionSort ob = new SelectionSort();
        int arr[] = {64,25,12,22,11};
        ob.sort(arr);
        System.out.println("Sorted array");
        ob.printArray(arr);
    }
}
```

Output:

```
Sorted array:
11 12 22 25 64
```

25 Volumes using method overloading

```
package basics;
```

```
        class Overload {
            double volume(float l, float w, float h)
{
                return l * w * h;
            }

            double volume(float l) {
                return l * l * l;
            }

            double volume(float r, float h) {
                return 3.1416 * r * r * h;
            }
        }
        public class
VolumeUsingMethodoverloading {
            public static void main(String args[]) {
                Overload overload = new Overload();
                double rectangleBox =
overload.volume(5, 8, 9);
                System.out.println("Volume of
ractangular box is " + rectangleBox);
                System.out.println("");
                double cube = overload.volume(5);
                System.out.println("Volume of cube
is " + cube);
                System.out.println("");
                double cylinder =
overload.volume(6, 12);
                System.out.println("Volume of
cylinder is " + cylinder);
            }
        }
```

o/p

Volume of ractangular box is 360.0

Volume of cube is 125.0

Volume of cylinder is 1357.1712

Subject handler

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