INSTITUTE OF SOFTWARE ENGINEERING

GRADUATE DIPLOMA IN SOFTWARE ENGINEERING

ASSIGNMENT NAME

Programming fundamentals

ASSIGNMENT NO

06

NUMBER OF QUESTIONS: 24

NUMBER OF COMPLETED QUESTIONS: 24

NUMBER OF REMAINING QUESTIONS: 00

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1) 01. Describe following Java statements (Use diagrams

when you need):

a. int[] x

create an address variable for int type array;

b. xr=new int[4];

assign a int type array which hold 4 indexes to xr address vaiable.

c. System.out.println(xr);

print the address of array which assigned into xr address variable.

d. System.out.println(xr[0]); //Explain the output

print the value of 0 index of array which pointing with address of assigned into xr;

e. xr[0]=100;

assign the 100 into 0 index of array which pointing with address of assigned into xr;

f. xr[1]=200;

assign the 200 into 1 index of array which pointing with address of assigned into xr;

g. xr[2]=300;

assign the 300 into 2 index of array which pointing with address of assigned into xr;

h. xr[3]=400;

assign the 400 into 3 index of array which pointing with address of assigned into xr;

i. System.out.println(xr[0]+" "+xr[1]+" "+xr[2]+" "+xr[3]);
print the 0 index value which pointed by address variable of xr , print the 1 index value which pointed by address variable of xr , print the 2 index value which pointed by address variable of xr, print the 3 index value which pointed by address variable of xr

2)

```
class Example{
	public static void main (String args[]){
		final int ARRAY_SIZE = 10;
		double[] fractions=new double[ARRAY_SIZE];
		//ar[3];
```

```
		fractions[8]=1.667;
		fractions[5]=3.333;

		for(double x : fractions){
			System.out.println(x);
		}

	}
}
```

3)

```
import java.util.*;
class Example{
	public static void main (String args[]){
		Scanner input = new Scanner(System.in);
		int[] ar=new int[5];
		System.out.print("Input Number 1 : ");
		ar[0]=input.nextInt();
		System.out.print("Input Number 2 : ");
		ar[1]=input.nextInt();
		System.out.print("Input Number 3 : ");
		ar[2]=input.nextInt();
		System.out.print("Input Number 4 : ");
		ar[3]=input.nextInt();
		System.out.print("Input Number 5 : ");
		ar[4]=input.nextInt();

		for(int i=0 ; i<ar.length;i++){
			System.out.print("Input Number "+(i+1)+" : ");
			ar[i]=input.nextInt();
		}
```

```
                System.out.println(ar[0]+" "+ar[1]+" "+ar[2]+" "+ar[3]+" "+ar[4]);


                for(int x : ar){
                        System.out.print(x+" ");
                }


        }
}
```

4)

```
1. System.out.println(g[5]);
2. int[] g={8,8,8,8,8};
3.      float total=0;
        for(int i=0 ; i<100 ; i++){
                total=total+c[i];
        }
        System.out.println(total);

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



5.float max;
float min;
max=x[0];
min=x[0];
for(int i=1 ; i <x.length ; i++ ){
        if(x[i] > max){
                max=x[i];
        }
        if(x[i] < min){
```

```
                min=x[i];
        }

}

5)

import java.util.*;
class Example{
        public static void main (String args[]){
                int[] ar={65, 78, 43, 89, 34, 56, 90, 23, 64, 71, 94, 29};
                System.out.println(ar.length);

                System.out.print("[ ");
                for (int i=0 ; i<ar.length ; i++){
                        System.out.print(ar[i]+",");
                }
                System.out.println("\b ]");

                System.out.print("[ ");
                for (int x : ar){
                        System.out.print(x+",");
                }
                System.out.println("\b ]");

                System.out.print("[ ");
                for (int x : ar){
                        if(x%2==1){
                                System.out.print(x+",");
                        }
                }
                System.out.println("\b ]");
```

```
                System.out.print("[ ");
                for (int x : ar){
                        if(x%2==0){
                                System.out.print(x+",");
                        }
                }
                System.out.println("\b ]");
        }
}
```

06)

```
import java.util.*;
class Example{
        public static void main (String args[]){
                Random r=new Random();

                int[] ar=new int[12];
                for(int i=0 ; i<12 ;i++){
                        ar[i]=r.nextInt(101);
                }

                System.out.print("[ ");
                for(int x : ar){
                        System.out.print(x+",");
                }
                System.out.println("\b ]");

                System.out.print("[ ");
                for(int i=(ar.length-1) ; i>=0 ; i-- ){
                        System.out.print(ar[i]+",");
```

```
}
System.out.println("\b ]");

int sum=0;
for(int x : ar){
        sum=sum+x;
}
System.out.println("Sum is : " + sum);

int max=ar[0];
for(int x : ar){
        if(max<x){
                max=x;
        }
}
System.out.println("Max is : " + max);

int min=ar[0];
for(int x : ar){
        if(min>x){
                min=x;
        }
}
System.out.println("Min is : " + min);

int o_c=0;
for(int x : ar){
        if(x%2==0){
                o_c++;
        }
}
```

```
                System.out.println("ODD count is : "+o_c);

                int e_c=0;
                for(int x : ar){
                        if(x%2!=0){
                                e_c++;
                        }
                }
                System.out.println("EVEN count is : "+e_c);

                System.out.print("The integers those hold in the even indexes : [ " );
                for(int i=0 ; i < ar.length ; i++){
                        if(ar[i]%2==0){
                                System.out.print(i+",");
                        }
                }
                System.out.println("\b ]");

                System.out.print("The integers those hold in the odd indexes : [ " );
                for(int i=0 ; i < ar.length ; i++){
                        if(ar[i]%2!=0){
                                System.out.print(i+",");
                        }
                }
                System.out.println("\b ]");
        }
}
```

7)

```
import java.util.*;
```

```
class Example{
	public static void main (String args[]){
		int[] ar={1, 2, 3, 4, 5};
		int[] br=new int[]{10, 20, 30, 40, 50};

		System.out.print("[");
		for(int x : ar){
			System.out.print(x+",");
		}
		System.out.println("\b]");

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

		String x=Arrays.toString(ar);
		System.out.println(x);

		if(ar.length==br.length){
			System.out.println("Both arrays are same size");
		}

		int[] t_ar=new  int[ar.length];
		for(int i=0 ; i<t_ar.length ; i++){
			t_ar[i]=ar[i]+br[i];
		}


		for(int i=0 ; i<t_ar.length ; i++){
			ar[i]=br[i];
		}
```

```
	}

}
```

8)

```
import java.util.*;
class Example{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input no of students : ");
		final int N=input.nextInt();
		//1. Create an array to store student marks
		int[] marks=new int[N];
		//2. Input marks from the keyboard
		for(int i=0 ; i<marks.length ; i++){
			System.out.print("Input marks "+(i+1)+" : ");
			marks[i]=input.nextInt();
		}
		//3. find total
		int total=0;
		for(int x : marks){
			total=total+x;
		}
		//4. find max;
		int max=marks[0];
		for(int x : marks){
			if(max<x){
				max=x;
			}
		}
```

```
		//5. find min
		int min=marks[0];
		for(int x : marks){
			if(min>x){
				min=x;
			}
		}

		//6. print marks [32, 45, 54, 76, ...]
		System.out.print("[ ");
		for(int x:marks){
			System.out.print(x+",");
		}
		System.out.println("\b ]");
		System.out.println("Total : "+total);
		System.out.println("Maximum : "+max);
		System.out.println("Minimum : "+min);
	}
}
```

09)

```
import java.util.*;
class Example{
	public static int[] createAnArray(int x){
		int[] m= new int[x];
		return m;
	}
	public static void readMarks(int[] m){
		Scanner input=new Scanner(System.in);
		for(int i=0 ; i<m.length ; i++){
			System.out.print("Input marks "+(i+1)+" : ");
```

```
                m[i]=input.nextInt();


        }
}
public static int findTotal(int[] m){
        int total=0;
        for(int x : m){
                total=total+x;
        }
        return total;
}
public static int findMax(int[] m){
        int max=m[0];
        for(int x : m){
                if(max<x){
                        max=x;
                }
        }
        return max;
}


public static int findMin(int[] m){
        int min=m[0];
        for(int x : m){
                if(min>x){
                        min=x;
                }
        }
        return min;
}


public static void printMarks(int[] m){
```

```
            System.out.print("[ ");
            for(int x:m){
                  System.out.print(x+",");
            }
            System.out.println("\b ]");
      }

      public static void main(String args[]){
            Scanner input=new Scanner(System.in);
            System.out.print("Input no of students : ");
            final int N=input.nextInt();
            //1. Create an array to store student marks
            int[] marks=createAnArray(N);
            //2. Input marks from the keyboard
            readMarks(marks);

            //3. find total
            int total=findTotal(marks);
            //4. find max;
            int max = findMax(marks);
            //5. find min
            int min=findMin(marks);

            //6. print marks [32, 45, 54, 76, ...]
            printMarks(marks);

            System.out.println("Total : "+total);
            System.out.println("Maximum : "+max);
            System.out.println("Minimum : "+min);
      }
}
```

10. Which the following are correct array declaration:

A. int[] a;

B. int []b;

C. int e[5];

D. int c[];

E. int [d];

11. Which the following are correct array memory allocation:

A. int[] a=new int[5];

B. int[] b=new int[];

C. int[] c=[10, 20, 30, 40, 50]

D. int[] d={10, 20, 30, 40, 50}

E. int[] e=new int[]{10, 20, 30, 40, 50}

F. int[] f=new int[5]{10, 20, 30, 40, 50}

G. int[] g=new int[0];

12. Which can be insert at line 12, still code will compile?

```
class Example{
        public static void main(String args[]){
                int[] array;
                //Insert code here //Line 12
        }
}
```

A. array=new int[5];

B. array=new int[10];

C. array=new int[-5];

D. array={10, 20, 30, 40, 50};

E. array=new int[]{10, 20, 30, 40, 50};

F. array=new int[]{};

13. What are the default values each data type? Demonstrate your answer by using appropriate examples?

int – 0;

short -0;

byte – 0;

long – 0;

double – 0.0;

char – null value(ASCII CODE 0);

Boolean – false;

String – null;

14. Which one of the following to get the length of given

array:

int[] array={5,4,3,2,6,7,8,9,0,1};

A. array.length(); B. array.length; C. array.size(); D. array.size;

E. array.length-1;

15. Which the following are legal Java statements: Explain your answer.

A. Int a=new int[10];

B. int b=new int[10].length;

C. int c={10,20,30,40}.length;

D. int d=new int[]{10,20,30,40}.length;

E. int e=new double[]{1.1, 1,2, 1,5, 1,4}.length;

F. int f=new int[]{10,20,30,40}[2];

G. int[] g=new int[]{10,20,30,40}[2];

H. int h=new double[]{1.1, 1,2, 1,5, 1,4}.[2];

I. int i=new double[]{1.1, 1,2, 1,5, 1,4}[2];

J. double j=new double[]{1.1, 1,2, 1,5, 1,4}.[2];

16. Which can be insert at line 10, still code will compile?

```
class Example{
        public static void main(String args[]){
                //Insert code here //Line10
                int[] marks=new int[a];
```

```
    }
}
```

A. byte a=10; B. short a=10;

C. int a=10; D. long a=10;

E. float a=10; F. double a=10;

G. char a='A'; H. int[] a=new int[10];

17. What is the output? Briefly explain your answer:

```
class Example{
    public static void increment(int x, int[] y){
        x++;
        y[0]++;
    }
    public static void main(String args[]){
        int x=100;
        int[] y={200};
        System.out.println(x+" "+y[0]);
        increment(x,y);
        System.out.println(x+" "+y[0]);
    }
}
```

when we increment a array index using a method of taking array address with a parameter,the increment is valid for main method because the array is created on the heep of RAM.but variable incement is not valid for main method because variables are created on stack.

18. Define Java method “merge(….)” to complete the

following program to get the relevant output.

```
class Example{
    public static char[] merge(char[] ar, char [] br){
        char[] temp=new char[ar.length+br.length];
        for(int i=0 ; i<ar.length ; i++){
            temp[i]=ar[i];
```

```
        }
        int j=0;
        for(int i=ar.length ; i<temp.length ; i++){
            temp[i]=br[j];
            j++;
        }
        return temp;
    }

    public static void main(String args[]){
        char[] vowels1={'a','e','i','o','u'};
        char[] vowels2={'A','E','I','O','U'};
        System.out.println(Arrays.toString(vowels1));
        //[a, e, i, o, u]
        System.out.println(Arrays.toString(vowels2));
        //[A, E, I, O, U]
        char[] vowelsAll=merge (vowels1,vowels2);
        System.out.println(Arrays.toString(vowelsAll));
        //[a, e, i, o, u, A, E, I, O, U]
    }
}
```

19. What is the output? Explain your answer.

```
import java.util.*;
class Example{
    public static void main(String args[]){
        int[] array={100, 200, 300};
        System.out.println(Arrays.toString(array));//[ 100,200,300 ]
        for(int a : array){a++;}
        System.out.println(Arrays.toString(array));//[ 100,200,300 ]
        for(int i=0; i<array.length;i++){array[i]++;}
```

For Inch loop cannot modify the data in the array

```
            System.out.println(Arrays.toString(array));// [ 101,201,301 ]
    }
}
```

Traditional for loop can modify the data In the array.

20. Which can be inserted at line 10, still code will compile?

```
import java.util.*;
class Example{
    public static void printArray(int[] array){
        //body
    }
    public static void main(String args[]){
        int[] a=new int[10];
        int[] b=new int[]{10,20,30,40};
        int[] c={10,20,30,40};
        int[] d={};
        //Insert code here //Line 10
    }
}
```

A. printArray(a);
B. printArray(b);
C. printArray(c);
D. printArray(d);
E. printArray(10,20,30,40);
F. printArray({});
G. printArray(new int[]{});
H. printArray(new int[5]);
I. printArray([10,20,30,40]);
J. printArray({10,20,30,40});
K. printArray(new int[]{10,20,30,40});

21. Which can be insert at line 20, still code will compile?

```
class Example{
    public static void main(String args[]){
        int x=0;
```

```
                int[] xr=new int[3];
                double d=0.0;
                double[] dr=new double[5];
                int[] grade={'a','b'};
                //Insert code here //Line 20
        }
}
```

A. x=xr[0];	B. xr[0]=x;	C. x=xr;
D. xr=x;	E. dr[0]=xr[0];	F. xr[0]=dr[0];
G. xr[0]=(int)dr[0];	H. xr=dr;	I. dr=(double[])xr;
J. dr=xr;	K. xr=(int)dr;	L. xr=(int[])dr;

22)

```
import java.util.*;
class Example{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int[] ar=new int[5];
                for(int i=0 ; i<ar.length ; ){
                        int count=0;
                        System.out.print("Input number "+(i+1)+" : ");
                        int x=input.nextInt();
                        if(x>=10 && x<=100){
                                for(int j=0 ; j < ar.length ; j++){
                                        if(x==ar[j]){
                                                count++;
                                        }
                                }
                                if(count==0){
                                ar[i]=x;
                                i++;
```

```
                        }else{
                                System.out.println(" Duplicate Entry Please Try Again");
                        }
                }else{
                System.out.println("Entered value is Grater than 100 Or Lesser Than 10");
                }
        }
        String s=Arrays.toString(ar);
        System.out.println(s);
    }
}
```

23)

```
import java.util.*;
class my_class0{
    public static void copyRange(int l1,int l2,int[] a1,int[] a2){
        for(int i = l1 ; i<=l2 ; i++){
            a2[i]=a1[i];
        }
    }

    public static void main(String args[]){
        Random r=new Random();
        Scanner input = new Scanner(System.in);
        final int N=10;
        int a1[] = new int[N];
        int a2[] = new int[N];

        for(int i=0 ;i<a1.length ; i++){
            a1[i]=r.nextInt(100);
        }
```

```
        System.out.println(Arrays.toString(a1));
        System.out.println(Arrays.toString(a2));
        int l1;
        int l2;
        boolean flag1;
        boolean flag2;
        do{
            l1=input.nextInt();
            l2=input.nextInt();
            flag1=false;
            flag2=false;
            if((l1<l2)&&(l1>=0)){
                flag1=true;
                if(l2<N){
                    flag2=true;
                    System.out.println("Input values are valid");
                }else{
                    System.out.println("Values are exceedig its Size");
                    flag2=false;
                }
            }else{
                System.out.println("Input values are not valid");
                flag1=false;
            }
        }while(!(flag1&&flag2));

        copyRange(l1,l2,a1,a2);

        System.out.println(Arrays.toString(a1));
        System.out.println(Arrays.toString(a2));
    }
}
```

24)

```
import java.util.*;
class Example{
	public static int[] restart(){
		int[] ar=new int[0];
		return ar;
	}
	public static void addIndex(int[] ar,int x,int ind){
		System.out.println("Succesfully Replaced index of "+ind+" with "+x+" And Removed "+ar[ind] );
		ar[ind]=x;

	}

	public static boolean isEmpty(int[] ar){
		int count=0;
		for(int x : ar ){
			if(x==0){
				count++;
			}
		}
		if (count!=0){
			System.out.print("These indexes are holding 0 [ ");
			for(int i=0 ; i<ar.length ; i++){
				if(ar[i]==0){
					System.out.print(i+",");
				}
			}
			System.out.println("\b ]");
		}
		if(count!=0){
```

```
                return true;
        }
        return false;
}

public static int size(int[] array){
        int x=array.length;
        return x;
}

public static void printArray(int[] ar){
        System.out.print("\t\t\t\t[ ");
        for(int x : ar){
                System.out.print(x+",");
        }
        System.out.println("\b ]");
}

public static int[] removeIndex(int[] ar,int x){
        int[] temp=new  int[(ar.length)-1];
                int j=0;
                for(int i=0 ; i < ar.length ; i++){
                        if(i==x){
                                continue;

                        }

                        temp[j]=ar[i];
                        j++;
                }

        return temp;
```

```
}

public static int[] insert(int[] ar , int x){
	int[] br ;
	br= new int[(ar.length+1)];
		for(int i=0 ; i<ar.length ; i++){
			br[i]=ar[i];
	}
	br[br.length-1]=x;
	return br;
}

public static int[] remove(int[] ar){
	System.out.println("\t\t\t\tSuccesfully removed "+ar[(ar.length)-1]+" From the List");
	int br[]=new int[(ar.length)-1];
	for(int i = 0;i < br.length ;i++){
		br[i]=ar[i];
	}
	return br;
}

public static boolean isFull(int[] ar){
	int count=0;
	for(int x: ar){
		if(x==0){
			count++;
		}
	}
	if(count==0){
		return true;
	}else{
		System.out.print("These indexes are holding 0 [ ");
```

```
                for(int i=0 ; i<ar.length ; i++){
                        if(ar[i]==0){
                                System.out.print(i+",");
                        }
                }
                System.out.println("\b ]");
        }
        return false;
}

public static void clear(int[] ar){
        for(int i=0 ; i<ar.length ; i++){
                ar[i]=0;
        }
        System.out.println("\t\t\t\tList Cleared Succesfull");
}

public static int[] removeDuplicates(int[] ar){
        for(int j=0 ; j<ar.length ; j++){
                if(ar[j]!=0){
                        for(int i=(j+1) ; i<ar.length ; i++){
                                if(ar[j]==ar[i]){
                                        ar[i]=0;
                                }
                        }
                }
        }
        int count=0;
        for(int x : ar){
                if(x==0){
                        count++;
                }
```

```
        }
        int[] temp=new int[ar.length-count];
        int j = 0 ;
        for(int i =0; i<ar.length ; i++){
                if(ar[i]!=0){
                        temp[j]=ar[i];
                        j++;
                }

        }

        System.out.println("\t\t\t\tAll duplicated values in the list has been removed ");
        return temp;
}

public static void searchElement(int[] ar,int y){
        int count=0;
        for(int x : ar){
                if(y==x){
                        count++;
                }
        }
        if(count!=0){
                System.out.print("\t\t\t\tThis number exists in index number of [");
                for(int i=0 ; i<ar.length ; i++){
                        if(ar[i]==y){
                                System.out.print(i+",");
                        }
                }
                System.out.println("\b ]");
        }else{
                System.out.println("\t\t\t\tThis Number Dosen't exists in the list");
```

```
        }
}

public static boolean isExists(int[] ar,int y){
        int count=0;
        for(int x: ar){
                if(x==y){
                        count++;
                }
        }
        if(count==0){
                return false;
        }
        return true;
}

public static int getTotal(int[] ar){
        int total=0;
        for(int x : ar){
                total=total+x;
        }
        return total;
}

public static void main(String args[]){
        System.out.println(" Input -1 to Other options ");
        Scanner input=new Scanner(System.in);
        int x=0;
        int[] ar=new int[0];
        int count=0;
        String s =" ";
        do{
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                x=input.nextInt();
                if(x>0){
                        ar=insert(ar ,x);
                }else{
                        if(x!=-1){
                                continue;
                        }
                        System.out.println("\t\t\t\tINPUT exit TO END THE PROGRAM\n");
                        System.out.println("\t\t\t\tINPUT return TO ADD NUMBERS AGAIN TO THE LIST\n");
                        System.out.println("\t\t\t\tINPUT remove TO DELETE THE NUMBER THAT ENTERED
LAST\n");
                        System.out.println("\t\t\t\tINPUT print TO PRINT THE NUMBER LIST\n");
                        System.out.println("\t\t\t\tINPUT remove.index TO DELETE A NUMBER WHICH IS ON
THE LIST\n ");
                        System.out.println("\t\t\t\tINPUT add.index TO REPLACE A INDEX WITH A NUMBER\n");
                        System.out.println("\t\t\t\tINPUT size TO TAKE THE SIZE OF THE LIST \n");
                        System.out.println("\t\t\t\tINPUT isEmpty TO CHECK WHETHER THE LIST HAS 0 VALUES
\n");
                        System.out.println("\t\t\t\tINPUT isFull TO CHECK WHETHER THE LIST IS FULL\n");
                        System.out.println("\t\t\t\tINPUT clear TO CLEAR THE LIST\n");
                        System.out.println("\t\t\t\tINPUT r.duplicates TO REMOVE THE DUPLICATED VALUES
FROM THE LIST\n");
                        System.out.println("\t\t\t\tINPUT search TO FIND THE LOCATION OF GIVEN NUMBER
FROM THE LIST\n");
                        System.out.println("\t\t\t\tINPUT isExists TO CHECK WHETHER THE GIVEN NUMBER
EXISTS IN THE LIST\n");
                        System.out.println("\t\t\t\tINPUT total TO CHECK THE TOTAL OF THE LIST\n");
                        System.out.println("\t\t\t\tINPUT restart TO RESTART THE PROGRAM \n");
                        do{
                                System.out.print("Input keyword : ");
                                s=input.next();
                                if(s.equals("remove")){
                                        if(ar.length>1 ){
                                        ar=remove(ar);
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                }else{
                        System.out.println("\t\t\t\tCannot perform this action ");
                }
        }
        if(s.equals("return")){
                        break;
        }
        if(s.equals("exit")){
                        break;
        }
        if(s.equals("print")){
                printArray(ar);
        }
        if(s.equals("remove.index")){
                System.out.print("Input the index of the number : ");
                int ind=input.nextInt();
                if(ind>=0 && ind<ar.length){
                        ar=removeIndex(ar,ind);
                }else{
                        System.out.println("\t\t\t\tWrong Index Input Please Try
Again");
                        continue;

                }
        }
        if(s.equals("add.index")){
                        System.out.print("Input the index You Want to Replace with a
number : ");
                        int ind=input.nextInt();
                        if(ind>=0 && ind<ar.length){
                                System.out.print("Input the number : ");
                                int k=input.nextInt();
                                addIndex(ar,k,ind);
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                    }else{
                        System.out.println("\t\t\t\tWrong index Input Detected Please Try again");
                    }
                }
                if(s.equals("size")){
                    System.out.println("\t\t\t\tSize of the number list(array) is : "+size(ar));
                }
                if(s.equals("isEmpty")){
                    if(isEmpty(ar)){
                        System.out.println("\t\t\t\tThere is 0 values in the list Please check ");
                    }else{
                        System.out.println("\t\t\t\tThere is no 0 values");
                    }
                }
                if(s.equals("isFull")){
                    if(isFull(ar)){
                        System.out.println("\t\t\t\tNumber List is Full");
                    }
                }
                if(s.equals("clear")){
                    clear(ar);
                }
                if(s.equals("r.duplicates")){
                    ar=removeDuplicates(ar);
                }
                if(s.equals("search")){
                    System.out.print("Input the number You want to search in List : ");
                    int p=input.nextInt();
                    searchElement(ar,p);
                }
```

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                                        if(s.equals("isExists")){
                                                System.out.print("Input the number to check is it exists in the list : ");
                                                int g=input.nextInt();
                                                if(isExists(ar,g)){
                                                        System.out.println("\t\t\t\tThis number is exists in the number
list");
                                                }else{
                                                        System.out.println("\t\t\t\tThis number is not exists in the
number list");
                                                        }
                                        }
                                        if(s.equals("total")){
                                                int total=getTotal(ar);
                                                System.out.println("Total of the number List : "+total);
                                        }
                                        if(s.equals("restart")){

        System.out.println("**************************************************************************************
**************************************************\n \t\t\t\t\t\t Program Succsfully Restarted");
                                                ar=restart();
                                                break;
                                        }
                                }while(true);
                        }
                }while(!(s.equals("exit")));



                        System.out.print(" Good Bye ");


        }
}
```