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Exercise -1 (The Glass House)

```
 import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num=sc.nextInt();
          int sum=0;
          while(num>0){
             sum=sum+num%10;
             num=num/10;
          }
          System.out.println("exit door number of the glasshouse is:"+sum);
        }
}
```

Exercise -2 (Traffic Congestion- Even Odd rule)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num=sc.nextInt();
          if(num>=1&&num<=31){
             if(num%2==0){
                System.out.println("Cars with Even registration numbers are permitted today");
             }else{
                System.out.println("Cars with Odd registration numbers are permitted today");
             }
          }else{
             System.out.println("Invalid Input");
          }

        }
}
```

Exercise -3 (Choosing the Best Horse)

```
import java.util.*;
public class Main
```

```
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int horse1=sc.nextInt();
          int horse2=sc.nextInt();
          int horse3=sc.nextInt();
          if(horse1>horse2&&horse1>horse3){
             System.out.println("weight of the horse  horse1 with "+horse1 + " maximum weight");
          }
          else if(horse2>horse1&&horse2>horse3){
              System.out.println("weight of the horse  horse2 with "+horse2 + " maximum weight");
          }
          else if
(horse2==horse1||horse2==horse3||horse3==horse1||(horse1==horse2&&horse2==horse3)){
             System.out.println("Entered weights are not distinct values");
          }
          else{
             System.out.println("weight of the horse  horse3 with "+horse3 + " maximum weight");

          }
        }
}
```

Exercise -4 (Leap Year Event)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int years=sc.nextInt();
          if(((years%4==0)&&(years%100!=0))||(years%400==0)){
             System.out.println("leap year");
          }
          else{
             System.out.println("Not leap year");
          }
        }
}
```

Exercise -5 (My Birth Month)

```
import java.util.*;
public class Main
```

```
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int month=sc.nextInt();

          switch(month){
             case 1:System.out.println("your birthday is in january");
             break;
             case 2:System.out.println(""“your birthday is in February");
             break;
             case 3:System.out.println("your birthday is in March");
             break;
             case 4:System.out.println("your birthday is in April");
             break;
             case 5:System.out.println("your birthday is in May");
             break;
             case 6:System.out.println("your birthday is in June");
             break;
             case 7:System.out.println("your birthday is in july");
             break;
             case 8:System.out.println("your birthday is in August");
             break;
             case 9:System.out.println("your birthday is in September");
             break;
             case 10:System.out.println(" your birthday is in October");
             break;
             case 11:System.out.println("your birthday is in November");
             break;
             case 12:System.out.println("your birthday is in December");
             break;
             default:System.out.println("Invalid Month");
          }
        }
}
```

Exercise -6 (Simple Calculator)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num1=sc.nextInt();
          String op=sc.next();
          int num2=sc.nextInt();
```

```
            switch(op){
                case "+":System.out.println(num1+num2);
                break;
                 case "-":System.out.println(num1-num2);
                break;
                 case "*":System.out.println(num1*num2);
                break;
                 case "/":System.out.println(num1/num2);
                break;
            }
          }
}
```

Exercise -7 (Who are going for Battle)

```
import java.util.*;
public class Main
{
          public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int num1=sc.nextInt();
            int num2=sc.nextInt();
            for(int i=num1;i<=num2;i++){
               System.out.print(i+" ");
            }
          }
}
```

Exercise -8 (Armstrong Number)

```
import java.util.*;
public class Main
{
          public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int num1=sc.nextInt();
            int temp=num1;
            int sum=0;
            while(num1>0){
                int num=num1%10;
                sum=sum+(num*num*num);
                num1=num1/10;
            }
            if(sum==temp){
                System.out.println("armstrong number");
            }else{
```

```
            System.out.println("Not arstrong number");
          }
        }
}
```

Exercise -9 (First n terms in a series)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num1=sc.nextInt();
          for(int i=1;i<=num1;i++){
            System.out.print(i*i*i+" ");
          }
        }
}
```

Exercise -10 (First n prime numbers in a series)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
          Scanner sc=new Scanner(System.in);
          int num1=sc.nextInt();
          int temp=0;

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

            if(temp==num1){
              break;
            }
            else if(isPrime(i)){
              System.out.print(i+",");
              temp++;
            }

          }
        }
        public static boolean  isPrime(int n){
          int temp=0;
            for(int j=2;j<=n/2;j++){
              if(n%j==0){
                temp=1;
```

```
                    break;
                }
            }
            if(temp==1){
                return false;
            }
        return true;
    }
}
```

Exercise -11 (Print the Pattern)

```
import java.util.*;
public class Main
{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int num=sc.nextInt();
            for(int i=num;i>=1;i--){
                for(int j=1;j<=i;j++){
                    System.out.print(j+" ");
                }
                System.out.println();
            }
    }
}
```

Exercise -12 (Print the Pattern)

```
import java.util.*;
public class Main
{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int num=sc.nextInt();
            for(int i=num;i>=1;i--){
                for(int j=1;j<=i;j++){
                    System.out.print("  ");
                }
                for(int k=i;k<=num;k++){
                    System.out.print(k+" ");
                }if(i<=num-1)
                for(int p=num-1;p>=i;p--){
```

```
                    System.out.print(p+" ");
                }
                System.out.println();
            }
        }
}
```

Exercise -13 (The Super Market- Stock Challenge)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int size=sc.nextInt();
            int[] array=new int[size];
            for(int i=0;i<size;i++){
                array[i]=sc.nextInt();
            }
            int max=array[0];
            for(int j=1;j<size;j++){
                if(max<array[j]){
                    max=array[j];
                }
            }
            System.out.println(max);
        }

}
```

Exercise -14 (The Super Market- Total Stock)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int size=sc.nextInt();
            int[] array=new int[size];
            for(int i=0;i<size;i++){
                array[i]=sc.nextInt();
            }
            int sum=0;
            for(int j=0;j<size;j++){
               sum=sum+array[j];
            }
```

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

}
```

Exercise -15 (Compare two Arrays)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int size=sc.nextInt();
            int[] array1=new int[size];
            int[] array2=new int[size];
            for(int i=0;i<size;i++){
                array1[i]=sc.nextInt();
            }
             for(int j=0;j<size;j++){
                array2[j]=sc.nextInt();
            }
            int temp=0;
                for(int j=0;j<size;j++){
                  if(array1[j]!=array2[j]){
                      System.out.println("Not same");
                      break;
                  }
                  else{
                      temp=1;
                  }
                }
            if(temp==1){
                System.out.println("same Array");
            }

        }

}
```

Exercise -16 (Divisible by 8 and 3)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
```

```
    int Number=sc.nextInt();
    if(Number%8==0&&Number%3==0){
        System.out.println("Divisible by both 8 and 3");
    }
    else{
        System.out.println("Not Divisible by both 8 and 3");
    }
            }
}
```

Exercise -17 (Invalid Age Exception)

```
import java.util.*;
public class Main
{
            public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
    int age=sc.nextInt();
    try {
        validate(age);

    } catch(Exception e) {
        System.out.println("Exception occured: "+e);
    }
            }
            public static void validate(int age)throws InvalidAgeException{
                if(age<18){
                    throw new InvalidAgeException("Not valid");
                }
                else{
                    System.out.println("Welcome to vote");
                }
            }
}
class InvalidAgeException extends Exception{
 InvalidAgeException(String s){
  super(s);
 }
}
```

Exercise -18 (Arithmetic Exception)

```
import java.util.*;
public class Main
{
```

```
        public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
    int a=sc.nextInt();
    int b=sc.nextInt();
    try {
        System.out.println(a/b);

    } catch(Exception e) {
        System.out.println("Exception occured: "+e);
    }
    finally{
        System.out.println("Inside finally block");
    }
        }
}
```

Exercise -19 (Reverse Pyramid)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
    int line=sc.nextInt();
    int temp1=line;
    int temp2=line;
    for(int i=1;i<=line;i++){
        if(i>1){
            for(int j=1;j<i;j++){
                System.out.print("  ");
            }
        }
        for(int j=1;j<=temp1;j++){
            System.out.print(j+" ");
        }temp1--;

        for(int j=temp2-1;j>=1;j--){
            System.out.print(j+" ");
        } temp2--;
        System.out.println();
    }

        }
}
```

Exercise -20 (Array Index Out Of Bounds)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
    Scanner sc=new Scanner(System.in);
    int size=sc.nextInt();
    int array[]=new int[size];
    for(int i=0;i<size;i++){
        array[i]=sc.nextInt();
    }
    int index=sc.nextInt();
    try {System.out.println(array[index]);

    } catch(Exception e) {
        System.out.println(e);
    }



        }
}
```

Exercise -21 (Product Catalogue)

Exercise -22 (Sorting Command Line Arguments)

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
//                  System.out.println("Hello World");
ArrayList<String> name=new ArrayList<String>();
for(int i=0;i<args.length;i++){
    name.add(args[i]);
}
Collections.sort(name);
Iterator itr=name.iterator();
while(itr.hasNext()){
    System.out.println(itr.next());
}
        }
}
```

Exercise -23 (BMI Calculator)

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
//		System.out.println("Hello World");
Scanner sc=new Scanner(System.in);
float weight=sc.nextFloat();
float Height=sc.nextFloat();
float BMI=weight/(Height*Height);
if(BMI<18.5){
   System.out.println("UnderWeight");
}
else if(BMI>=18.5&&BMI<25){
   System.out.println("Normal");
}
else if(BMI>=25&& BMI<30){
   System.out.println("OverWeight");
	}
	else{
	   System.out.println("Obese");
	}
}
}
```

Exercise -29 (Right Angle Triangle)

```
import java.util.*;
public class Main
{
	public static void main(String[] args) {
//		System.out.println("Hello World");
Scanner sc=new Scanner(System.in);
int side1=sc.nextInt();
int side2=sc.nextInt();
int side3=sc.nextInt();
int a=side1*side1;
int b=side2*side2;
int c=side3*side3;
if((a+b==c)||(b+c==a)||(c+a==b)){
   System.out.println("Right angle Triangle");
}else{
   System.out.println("Not");
```

```
}

}
}
```