

## Topic: - Mathematical Library Method

All mathematical functions are included in a class “Math” that is a part of java.lang package. It is a default package. Hence a tag along with the function as added as shown below:-

Math.<Method name>

### Example

1. Math.min() -

This function returns the minimum of two numbers.

Syntax:-

<Return data type><variable>=Math.min(Arg1,Arg2)

e.g.

int n=Math.min(6,2);

It returns n=2

2. Math.max() -

This function returns the minimum of two numbers.

Syntax:-

<Return data type><variable>=Math.max(Arg1,Arg2)

e.g.

int n=Math.max(6,2);

It returns n=6

3. Math.pow()-

This function is used to find the value of power of a number expressed in exponential form.

Syntax:-

<Return data type><variable>=Math.pow(Arg1,Arg2)

e.g.

int n=Math.max(2,3);

It returns n=8

4. Math.sqrt()-

This function is used to find the square root of a positive number.

Syntax:-

<Return data type><variable>=Math.sqrt(Positive Number)

e.g.

int n=Math.sqrt(25);

It returns n=5

5. Math.cbrt()-

This function is used to find the cube root of a positive number.

Syntax:-

<Return data type><variable>=Math.cbrt(Positive Number)

e.g.

```
int n=Math.sqrt(27);
```

It returns n=3

6. Math.abs()-

This function is used to return the absolute value of negative sign value.

Syntax:-

```
<Return data type><variable>=Math.abs(Number)
```

e.g.

```
int n=Math.abs(-2);
```

It returns n=2

7. Math.round()-

This function returns the value in rounded –off form. If the fraction part is less than 0.5 then it returns the same value of the integer part of the argument otherwise, it returns the next higher integer value.

Syntax:-

```
<Return data type><variable>=Math.round(Number)
```

e.g.

```
int n=Math.round(5.6);
```

It returns n=6

Q. WAP in java to give any three numbers and display the smallest number by using library function.

Sol.

```
import java.util.*;

class ak
{
public static void main(String ar[])
{
Scanner sc=new Scanner(System.in);

int a,b,c,d,p;

System.out.println("Give any three numbers");

a=sc.nextInt();
```

```
b=sc.nextInt();
c=in.nextInt();
d=Math.min(a,b);
p=Math.min(c,d);
System.out.println("Smallest number"+p);
}
}
```

### Topic: - Date and Time Library Method

1. getDate()- It returns the day of the month which will be in the range 1-31.
2. getDay()- It returns the day i.e. Sunday is 0 and Saturday is 6.
3. getHours()- It returns the hour in 1-24 hour .
4. getMinutes()- It returns the minutes.
5. getMonth()- It returns the month encoded 0 to 11.
6. getSeconds()- It returns the second.
7. getTime()-It returns the no. of second.
8. getYear()- It returns the no. of year.
9. setDate()- Sets the day of month
10. setHours()-Sets the hours to that specified by hours.
11. setMinutes()-Sets the minutes to that specified by minutes.
12. setMonths()-Sets the months to that specified by months.
13. setSeconds()-Sets the seconds to that specified by seconds.
14. setTime()-Sets the time as per need.
15. SetYear()-Sets the year as per need.

Q. WAP in java to displays current system date, system time and updated time as need.

Sol.

```
import java.util.Date;

class mk
{
public static void main(String ar[])
{
String month[]{"Jan","Feb","Mar","April","May","June","July","Aug","Sep","Oct","Nov","Dec"};
Date curDate=new Date();
```

```
System.out.println(curDate);  
  
System.out.println("Date:-"+month[curDate.getMonth()]+" "+curDate.getDate() +" "+  
curDate.getYear()+1900);  
  
System.out.println("Time:-"+curDate.getHours()+":"+curDate.getMinutes()+":"+  
curDate.getSeconds());  
  
curDate.setHours(10);  
  
curDate.setMinutes(30);  
  
curDate.setSeconds(20);  
  
System.out.println("Updated time:"+curDate.getHours()+":"+curDate.getMinutes()+":"+  
curDate.getSeconds());  
  
}  
  
}
```

Output:-

Tues May 12 1:15:18 2020

Date: May 12 2020

Time: 1:15:18

Update time: 10:30:20

Topic: - Logical String Function

1. isUpperCase()- It checks character of string is in upper case or not.
2. isLowerCase()-It checks character of string is in lower case or not.
3. isWhiteSpace()-It checks character of string is blank space or not.
4. isDigit()-It checks character of string is digit or not.
5. isLetter()-It checks character of string is letter or not.
6. isLetterOrDigit()-It checks character of string is letter, digit or not.

Ex-

Q. WAP in java to give a sentence after that display how many uppercase, lowercase, whitespace and word in that sentence.

Sol.

```
import java.util.*;

class ak
{
public static void main(String ar[])
{
Scanner sc=new Scanner(System.in);
String s;
char c;
int b=0,u=0,l=0,w=0;
System.out.println("Enter a sentence");
s=sc.next();
int a=s.Length();
for(int i=0;i<a;i++)
{
c=s.charAt(i);
if(isUpperCase(c)==1)
u=u+1;
else
if(isLowerCase( c ) == 1)
```

```
        l=l+1;
else
if(isWhiteSpace( c )==1)
b=b+1;
    }
w=b+1;
System.out.println("Total Uppercase character" +u);
System.out.println("Total Lowercase character" +l);
System.out.println("Total White spaces" +b);
System.out.println("Total Words" +w);
    }
}
```

Q. WAP in java to give sentences and display how many characters, digits, words and sentence.

Sol.

```
import java.util.*;

class ak
{
public static void main(String ar[])
{
Scanner sc=new Scanner(System.in);
String s;
char c;
int b=0,d=0,e=0,f=0,w=0;
System.out.println("Enter a sentences");
s=sc.nextLine();
int a=s.Length();
for(int i=0;i<a;i++)
{
```

```
c=s.charAt(i);
if(isLetter ( c )==1)
    b=b+1;
else if(isDigit ( c )==1)
    d=d+1;
else if(isWhiteSpace ( c )==1)
    e=e+1;
else if(c=='.')
    f=f+1;
}
w=e+1;
System.out.println("No. of characters :"+b);
System.out.println("No. of digits :"+d);
System.out.println("No. of words :"+w);
System.out.println("No. of sentences :"+f);
}
}
```

Q. WAP in java to give any sentence then display how many vowels, consonant and special character in that sentence.

Sol.

```
import java.util.*;
class ak
{
public static void main(String ar[])
{
Scanner sc=new Scanner(System.in);
String s;
char c;
int v=0,c=0,sp=0;
```

```
System.out.println("Enter a sentence");
s=sc.next();
int a=s.Length();
for(int i=0;i<a;i++)
{
c=s.charAt(i);
char ch=toUpperCase( c );
if(ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U' )
    v=v+1;
else
    co=co+1;
if(isLetterOrDigit ( c ) && isWhiteSpace ( c ) ==0)
    sp=sp+1;
}
System.out.println("No. of vowel characters :"+v);
System.out.println("No. of consonant characters :"+co);
System.out.println("No. of special characters :"+sp);
}
}
```