

Q . Simulate a simple calculator and show the add, subtract, multiply and divide options.

```
import java.util.Scanner;
public class Calculator{
public static void main(String a[])
{
int num1;
int num2;
Scanner sin=new Scanner(System.in);
System.out.println("enter first number:");
num1=sin.nextInt();
System.out.println("enter second number:");
num2=sin.nextInt();
int add=num1+num2;
System.out.println("addition of the two number:"+add);
int sub=num1-num2;
System.out.println("subtraction of the two number:"+sub);
int mult=num1*num2;
System.out.println("multiplication of the two number:"+mult);
int div=num1%num2;
System.out.println("division of the two number:"+div);
}
}
```

```
Command Prompt
Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\mahme>cd C:\Users\mahme\Desktop\java lab
C:\Users\mahme\Desktop\java Lab>javac Calculator.java
C:\Users\mahme\Desktop\java Lab>java Calculator
enter first number:
5
enter second number:
8
addition of the two number:13
subtraction of the two number:-3
multiplication of the two number:40
division of the two number:5
C:\Users\mahme\Desktop\java Lab>
```

```
import java.util.Scanner;
public class Calculator{
public static void main(String a[])
{
int num1;
int num2;
Scanner sin=new Scanner(System.in);
System.out.println("enter first number:");
num1=sin.nextInt();
int add;
System.out.println("enter second number:");
num2=sin.nextInt();
int add = num1+num2;
System.out.println("addition of two numbers"
+ add);
int sub = num1 - num2;
System.out.println("subtraction of two numbers"
+ sub);
int mult = num1 * num2;
System.out.println("multiplication of the
two numbers:" + mult);
}
```

```
int div = num1 % num2;
System.out.println("division of the two numbers"
+ div);
}
```

Q. Write a Java program to calculate simple interest.

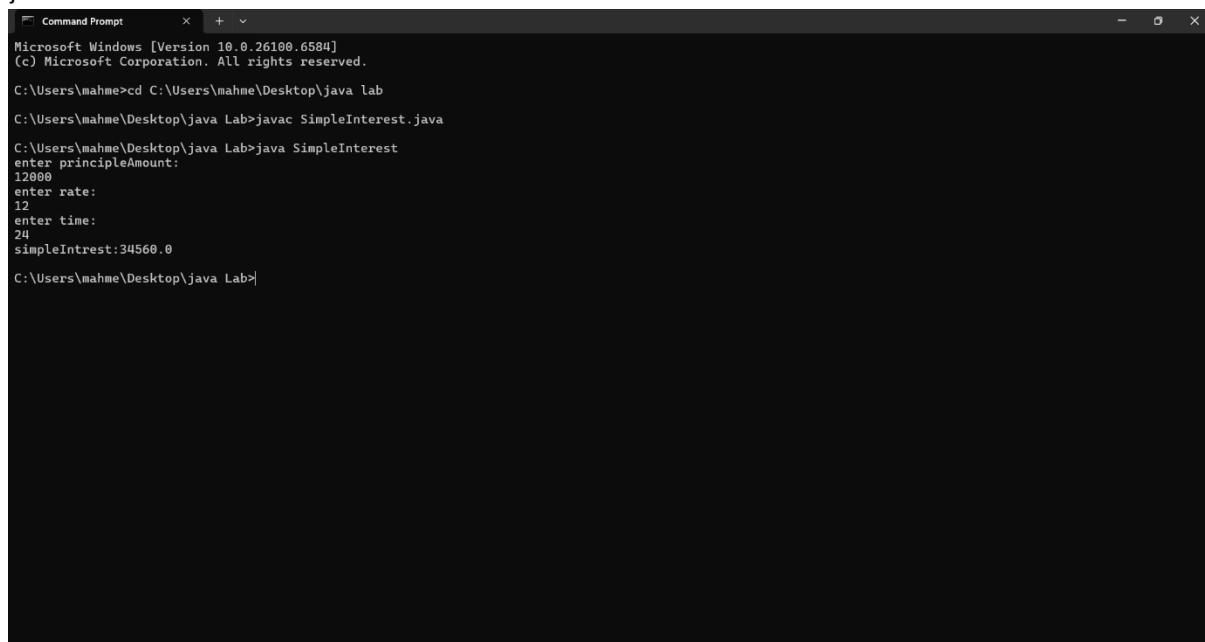
```
import java.util.Scanner;
public class SimpleInterest{
double principleAmount;
double rate;
double time;
public static void main(String a[])
{
Scanner sin=new Scanner(System.in);

System.out.println("enter principleAmount:");

double principleAmount=sin.nextDouble();

System.out.println("enter rate:");

double rate=sin.nextDouble();
System.out.println("enter time:");
double time=sin.nextDouble();
double interest=principleAmount*rate*time/100;
System.out.println("simpleIntrest:"+interest);
}
}
```



The screenshot shows a Microsoft Windows Command Prompt window titled "Command Prompt". The window displays the following session:

```
Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\mahme>cd C:\Users\mahme\Desktop\java lab
C:\Users\mahme\Desktop\java lab>javac SimpleInterest.java
C:\Users\mahme\Desktop\java lab>java SimpleInterest
enter principleAmount:
12000
enter rate:
12
enter time:
24
simpleIntrest:34560.0

C:\Users\mahme\Desktop\java lab>
```

```

(2) import java.util.Scanner;
public class SimpleInterest {
    double principleAmount;
    double rate;
    double time;
    public static void main (String a[])
    {
        Scanner sIn = new Scanner (System.in);
        System.out.println ("enter principleAmount: ");
        double principleAmount = sIn.nextDouble();
        double
        System.out.println ("enter rate");
        double rate = sIn.nextDouble();
        System.out.println ("enter time");
        double time = sIn.nextDouble();
        double interest = principleAmount * rate * time / 100;
        System.out.println ("Simple interest: " + interest);
    }
}

```

Q. Write a Java program to print multiplication table of 3 and 5

```

public class MultiplicationTables {
    public static void main(String[] args) {
        for (int i = 3; i <= 5; i++) {
            System.out.println("Table of " + i);

            for (int j = 1; j <= 10; j++) {
                System.out.println(i + " * " + j + " = " + (i * j));
            }

            System.out.println();
        }
    }
}

```

```

Command Prompt x + v

C:\Users\mahme>cd C:\Users\mahme\Desktop\java lab
C:\Users\mahme\Desktop\java Lab>javac MultiplicationTables.java
C:\Users\mahme\Desktop\java Lab>java MultiplicationTables
Table of 3
3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
3 * 4 = 12
3 * 5 = 15
3 * 6 = 18
3 * 7 = 21
3 * 8 = 24
3 * 9 = 27
3 * 10 = 30

Table of 4
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40

Table of 5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50

```

④ program:

```

public class multiplication {
    public static void main (String [] args) {
        for (int i=3; i<=5; i++) {
            System.out.println(i+" * "+j+" = "+(i*j));
            System.out.println();
        }
        off ~
        table of 3      table of 4      table of 5
        3*1=3          4*1=4          5*1=5
        3*2=6          4*2=8          5*2=10
        3*3=9          4*3=12         5*3=15
        3*4=12         4*4=16         5*4=20
        3*5=15         4*5=20         5*5=25
        3*6=18         4*6=24         5*6=30
        3*7=21         4*7=28         5*7=35
        3*8=24         4*8=32         5*8=40
        3*9=27         4*9=36         5*9=45
        3*10=30        4*10=40        5*10=50
    }
}

```

Q. Write a Java program to print factorial of a given number.

```

public class FactorialCalculator {
    public static void main(String[] args) {
        int number = 5;
        long factorial = 1;

        if (number < 0) {
            System.out.println("Factorial is not defined for negative numbers.");
        } else if (number == 0) {
            System.out.println("The factorial of 0 is 1.");
        } else {
            for (int i = 1; i <= number; i++) {
                factorial *= i;
            }
        }
    }
}

```

```

        }
        System.out.println("The factorial of " + number + " is " + factorial);
    }
}
}

```

```

Command Prompt
Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\mahme>cd C:\Users\mahme\Desktop\java lab
C:\Users\mahme\Desktop\java Lab>javac FactorialCalculator.java
C:\Users\mahme\Desktop\java Lab>java FactorialCalculator
The factorial of 5 is 120
C:\Users\mahme\Desktop\java Lab>

```

(b) program factorial :-

```

public class factorial {
    public static void main(String a[]) {
        int num=5;
        long fac=1;
        if (num<0){
            System.out.println("The factorial is not
                               defined for negative numbers");
        } else if (num==0){
            System.out.println("The factorial of 0 is");
        }
    }
}

```

3

```

3
else {
    for (int i = 1; i <= num; i++) {
        fac *= i;
    }
    System.out.println("The factorial:" + fac);
}

```

Q. Write a Java program to generate Fibonacci series.

```

public class Fibonacci {
    public static void main(String a[]) {
        int n = 10;
        int prev1 = 0;
        int prev2 = 1;

        System.out.print("Fib series up to 10 terms: ");

        for (int i = 1; i <= n; i++) {
            int next = prev1 + prev2;
            System.out.print(next + " ");
            prev1 = prev2;
            prev2 = next;
        }
    }
}

```

```
}
```

```
Microsoft Windows [Version 10.0.26100.6584]
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C:\Users\mahme>cd C:\Users\mahme\Desktop\java lab
C:\Users\mahme\Desktop\java Lab>javac Fibonacci.java
C:\Users\mahme\Desktop\java Lab>java Fibonacci
Fib series up to 10 terms: 1 2 3 5 8 13 21 34
C:\Users\mahme\Desktop\java Lab>
```

③

```
public class Fibonacci {
    public static void main(String args[]) {
        int n=10;
        int prev1=0;
        int prev2=1;
        System.out.print("fib series upto 10 terms:");
        for (int i=2 ; i<n ; i++) {
            int next=prev1+prev2;
            System.out.print(next+" ");
            prev1=prev2;
            prev2=next;
        }
    }
}
```

output

fib series upto 10 terms 1 2 3 5 8 13 21 34

~~Ans
21 34~~

