

# JAVA PROGRAMMING

## LAB 1

P.RAMYAA 2019503547

1. WRITE A PROGRAM THAT TAKES AS INPUT FAHRENHEIT TEMPERATURE. IT CONVERTS THE INPUT TEMPERATURE TO CELSIUS AND PRINTS OUT THE CONVERTED TEMPERATURE AS SHOWN IN THE EXAMPLE. THE FORMULA FOR CONVERSION BETWEEN THE TWO IS:  $C = 5/9(F - 32)$ , WHERE C IS THE TEMPERATURE IN CELSIUS AND F IS THE TEMPERATURE IN FAHRENHEIT. NOTE: ROUND YOUR ANSWER TO UP TO TWO DECIMAL PLACES.

---

### CODE

```
import java.util.*;

public class ramyaa_lab_1 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        System.out.println("Code by Ramyaa - 2019503547");

        System.out.println("Enter input in fahrenheit\n");

        double c,f;

        f = in.nextDouble();

        c = (f-32)*(0.5556);

        System.out.printf("The temperature equivalent of "+f+" in celcius is %.2f",c);

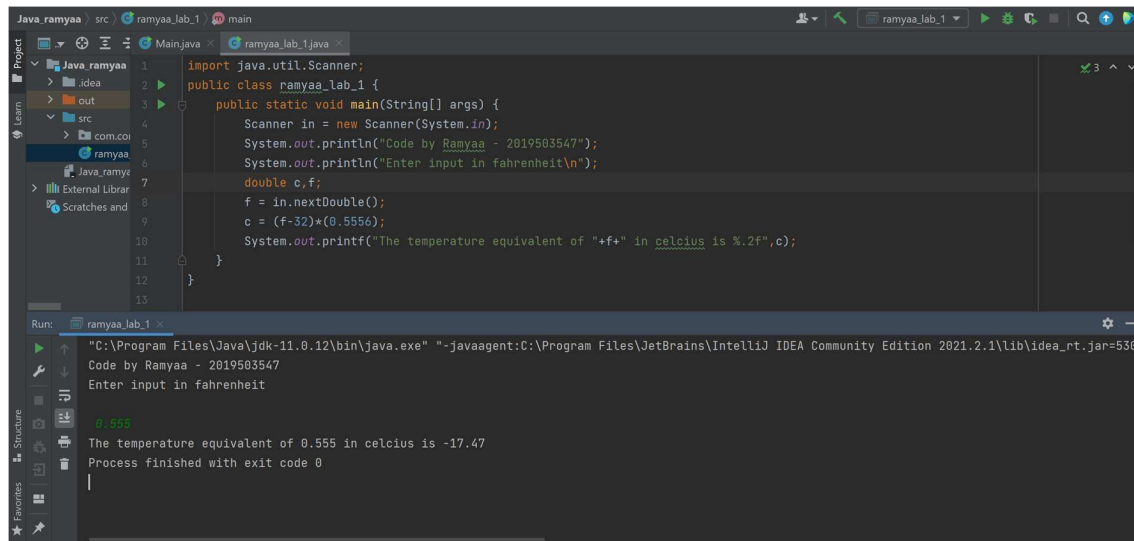
    }

}
```

---

### OUTPUT

## JAVA LAB 1

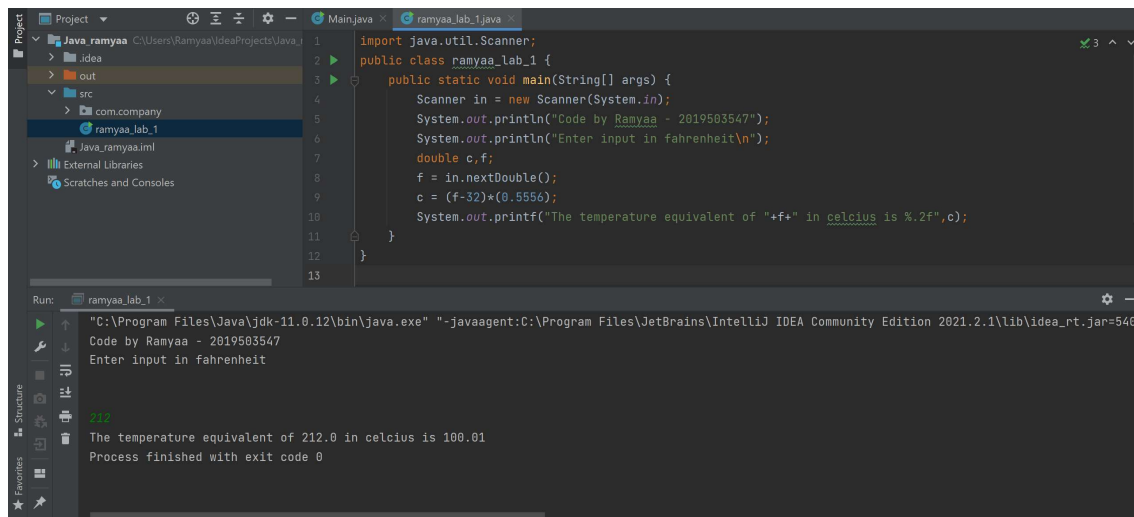


The screenshot shows the IntelliJ IDEA IDE with a project named 'Java\_ramyaa'. The source file 'ramyaa\_lab\_1.java' is open, displaying the following code:

```
1 import java.util.Scanner;
2 public class ramyaa_lab_1 {
3     public static void main(String[] args) {
4         Scanner in = new Scanner(System.in);
5         System.out.println("Code by Ramyaa - 2019503547");
6         System.out.println("Enter input in fahrenheit\n");
7         double c,f;
8         f = in.nextDouble();
9         c = (f-32)*(0.5556);
10        System.out.printf("The temperature equivalent of "+f+" in celcius is %.2f",c);
11    }
12 }
13
```

The Run window at the bottom shows the execution output:

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=5309..."
Code by Ramyaa - 2019503547
Enter input in fahrenheit
0.555
The temperature equivalent of 0.555 in celcius is -17.47
Process finished with exit code 0
```



The screenshot shows the same IntelliJ IDEA IDE with the same project and source file. The Run window shows the execution output for a different input:

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=5407..."
Code by Ramyaa - 2019503547
Enter input in fahrenheit
212
The temperature equivalent of 212.0 in celcius is 100.01
Process finished with exit code 0
```

2. WRITE A PROGRAM THAT TAKES AS INPUT THREE NUMBERS, U, A, AND T. HERE U STANDS FOR THE INITIAL VELOCITY, A STANDS FOR THE ACCELERATION, AND T STANDS FOR THE TIME DURATION. THE PROGRAM PRINTS THE FINAL VELOCITY (V).  $V=U+AT$  RECALL THAT U AND A CAN TAKE ANY REAL (FLOAT) VALUES AS VELOCITY AND ACCELERATION ARE CONTINUOUS VECTOR QUANTITIES (IN PHYSICS). TIME T CAN TAKE NON-NEGATIVE REAL VALUES ONLY, I.E.,  $0 \leq T$ . NOTE: ROUND YOUR ANSWER TO UP TO TWO DECIMAL PLACES.

### CODE

```
import java.util.*;

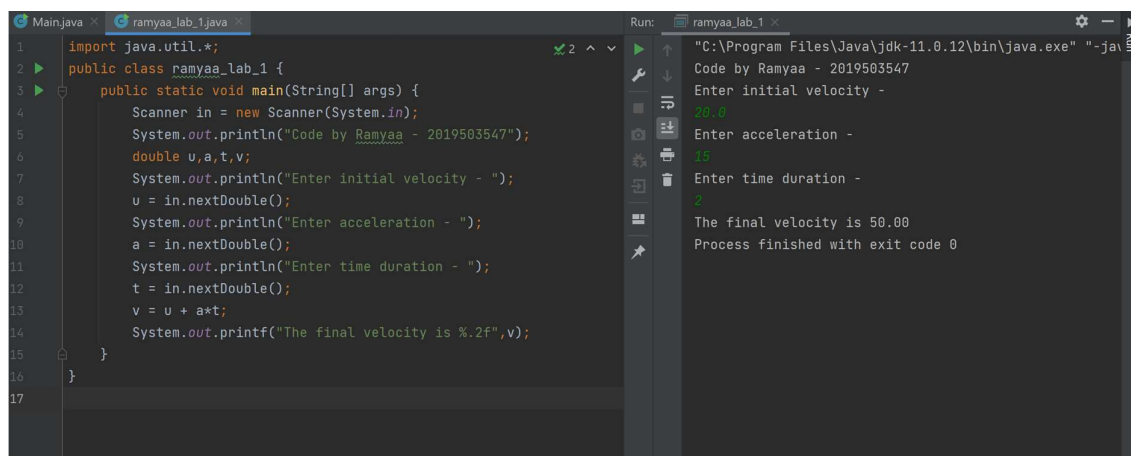
public class ramyaa_lab_1 {
```

## JAVA LAB 1

```
public static void main(String[] args) {  
  
    Scanner in = new Scanner(System.in);  
  
    System.out.println("Code by Ramyaa - 2019503547");  
  
    double u,a,t,v;  
  
    System.out.println("Enter initial velocity - ");  
  
    u = in.nextDouble();  
  
    System.out.println("Enter acceleration - ");  
  
    a = in.nextDouble();  
  
    System.out.println("Enter time duration - ");  
  
    t = in.nextDouble();  
  
    v = u + a*t;  
  
    System.out.printf("The final velocity is %.2f",v);  
  
}  
}
```

---

## OUTPUT



The screenshot shows a Java IDE with two panels. The left panel displays the source code for a class named `ramyaa_lab_1`. The code implements a program to calculate final velocity based on initial velocity, acceleration, and time duration. The right panel shows the output of the program, which includes prompts for user input and the resulting final velocity.

```
1 import java.util.*;  
2 public class ramyaa_lab_1 {  
3     public static void main(String[] args) {  
4         Scanner in = new Scanner(System.in);  
5         System.out.println("Code by Ramyaa - 2019503547");  
6         double u,a,t,v;  
7         System.out.println("Enter initial velocity - ");  
8         u = in.nextDouble();  
9         System.out.println("Enter acceleration - ");  
10        a = in.nextDouble();  
11        System.out.println("Enter time duration - ");  
12        t = in.nextDouble();  
13        v = u + a*t;  
14        System.out.printf("The final velocity is %.2f",v);  
15    }  
16 }  
17 }
```

Run: ramyaa\_lab\_1

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.exe" "-java  
Code by Ramyaa - 2019503547  
Enter initial velocity -  
20.0  
Enter acceleration -  
10  
Enter time duration -  
2  
The final velocity is 50.00  
Process finished with exit code 0
```

JAVA LAB 1

3. WRITE A PROGRAM THAT TAKES AS INPUT THREE NUMBERS, U, A, AND T. HERE U STANDS FOR THE INITIAL VELOCITY, A STANDS FOR THE ACCELERATION, AND T STANDS FOR THE TIME DURATION. THE PROGRAM PRINTS THE DISPLACEMENT COVERED (D) IN TIME T. RECALL THAT U AND A CAN TAKE ANY REAL VALUE AS VELOCITY AND ACCELERATION ARE CONTINUOUS VECTORS (IN PHYSICS). TIME T CAN TAKE NON-NEGATIVE REAL VALUES ONLY, I.E.,  $0 \leq T$ . NOTE: ROUND YOUR ANSWER TO UP TO TWO DECIMAL PLACES.

---

CODE

```
import java.util.*;

public class ramyaa_lab_1 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        System.out.println("Code by Ramyaa - 2019503547");

        double u,a,t,d;

        System.out.println("Enter initial velocity - ");

        u = in.nextDouble();

        System.out.println("Enter acceleration - ");

        a = in.nextDouble();

        System.out.println("Enter time duration - ");

        t = in.nextDouble();

        d = u*t + 0.5*a*t*t;

        System.out.printf("The displacement is %.2f",d);

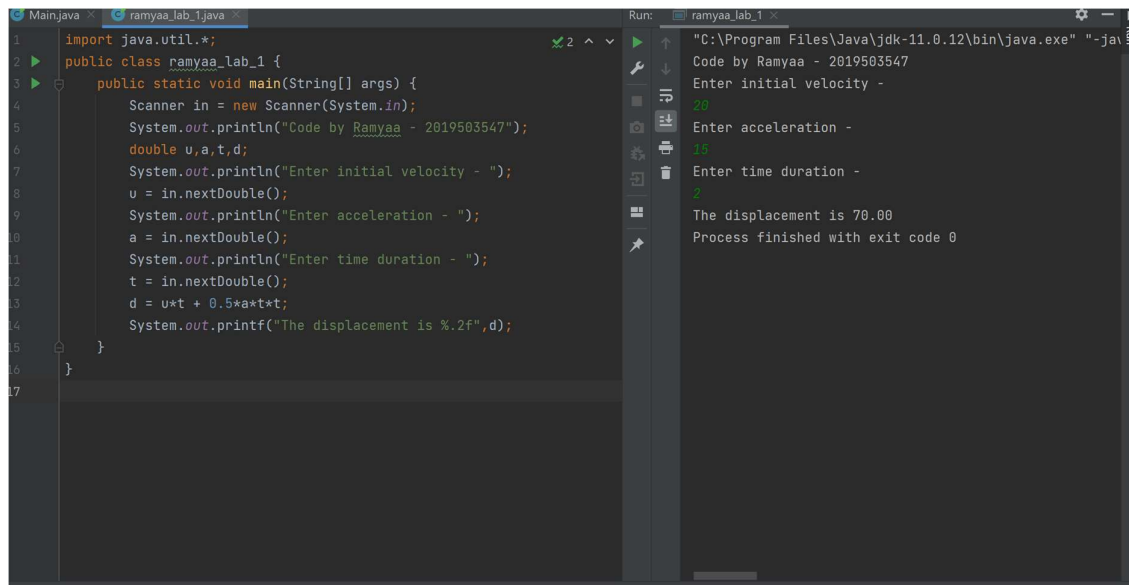
    }

}
```

---

OUTPUT

## JAVA LAB 1



```
1 import java.util.*;
2 public class ramyaa_lab_1 {
3     public static void main(String[] args) {
4         Scanner in = new Scanner(System.in);
5         System.out.println("Code by Ramyaa - 2019503547");
6         double u,a,t,d;
7         System.out.println("Enter initial velocity - ");
8         u = in.nextDouble();
9         System.out.println("Enter acceleration - ");
10        a = in.nextDouble();
11        System.out.println("Enter time duration - ");
12        t = in.nextDouble();
13        d = u*t + 0.5*a*t*t;
14        System.out.printf("The displacement is %.2f",d);
15    }
16 }
17
```

Run: ramyaa\_lab\_1

"C:\Program Files\Java\jdk-11.0.12\bin\java.exe" "-ja  
Code by Ramyaa - 2019503547  
Enter initial velocity -  
20  
Enter acceleration -  
15  
Enter time duration -  
2  
The displacement is 70.00  
Process finished with exit code 0

4. WRITE A PROGRAM THAT TAKES AS INPUT AN INTEGER S, THE NUMBER OF SECONDS ELAPSED FOR A CERTAIN EVENT. THE PROGRAM CONVERTS S TO HOURS (HH), MINUTES (MM), AND SECONDS (SS) AND PRINTS THE OUTPUT AS HH:MM:SS.

### CODE

```
import java.util.*;

public class ramyaa_lab_1 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        System.out.println("Code by Ramyaa - 2019503547");

        int s,hh,mm,ss;

        System.out.println("Enter number of seconds elapsed - ");

        s = in.nextInt();

        ss = s % 60;

        hh = s / 60;

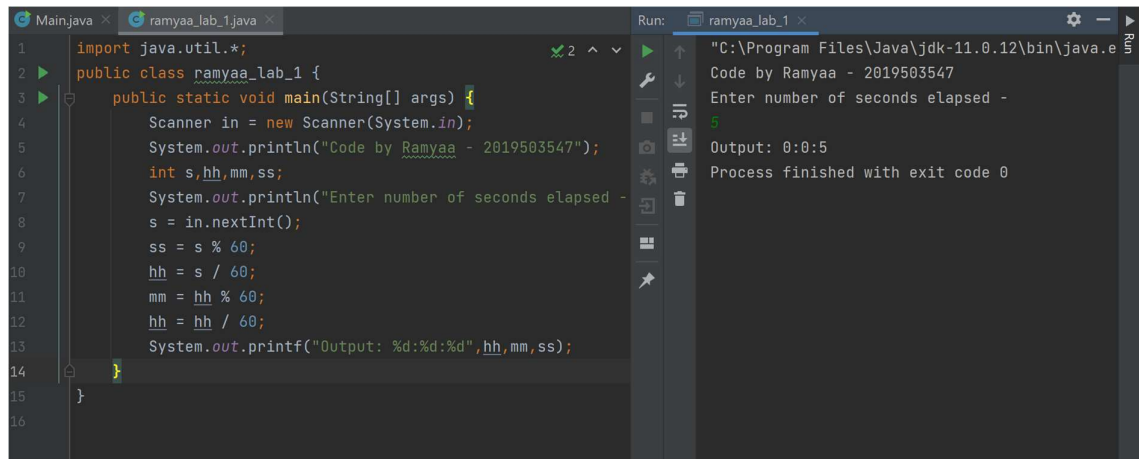
        mm = hh % 60;

        hh = hh / 60;
```

## JAVA LAB 1

```
System.out.printf("Output: %d:%d:%d",hh,mm,ss);  
  
}  
  
}
```

### OUTPUT

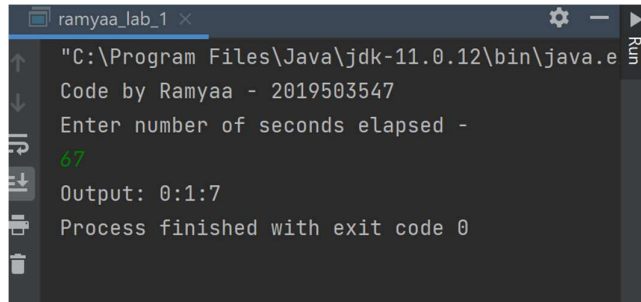


The screenshot shows an IDE with two windows. The left window, titled 'Main.java' and 'ramyaa\_lab\_1.java', displays the following code:

```
1 import java.util.*;  
2 public class ramyaa_lab_1 {  
3     public static void main(String[] args) {  
4         Scanner in = new Scanner(System.in);  
5         System.out.println("Code by Ramyaa - 2019503547");  
6         int s, hh, mm, ss;  
7         System.out.println("Enter number of seconds elapsed -");  
8         s = in.nextInt();  
9         ss = s % 60;  
10        hh = s / 60;  
11        mm = hh % 60;  
12        hh = hh / 60;  
13        System.out.printf("Output: %d:%d:%d", hh, mm, ss);  
14    }  
15 }  
16 }
```

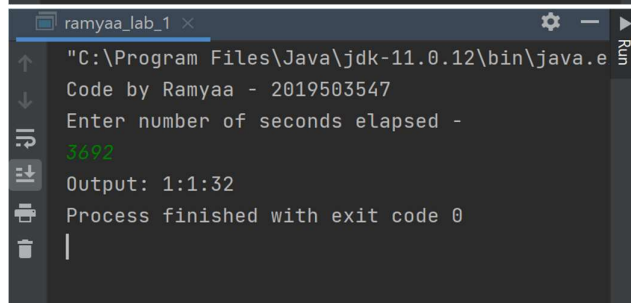
The right window, titled 'Run: ramyaa\_lab\_1', shows the output of the program:

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.e  
Code by Ramyaa - 2019503547  
Enter number of seconds elapsed -  
5  
Output: 0:0:5  
Process finished with exit code 0
```



The screenshot shows the output of the Java program when 67 seconds are entered:

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.e  
Code by Ramyaa - 2019503547  
Enter number of seconds elapsed -  
67  
Output: 0:1:7  
Process finished with exit code 0
```



The screenshot shows the output of the Java program when 3692 seconds are entered:

```
"C:\Program Files\Java\jdk-11.0.12\bin\java.e  
Code by Ramyaa - 2019503547  
Enter number of seconds elapsed -  
3692  
Output: 1:1:32  
Process finished with exit code 0  
|
```