

CS6308 – JAVA PROGRAMMING

LAB EXPERIMENT – 1

NAME: HEMANTH N
REG NO: 2019503519

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. Round your answer to up to two decimal places.

CODE:

```
import java.util.Scanner;

public class hems_lab_1 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        System.out.println("By HEMANTH N | 2019503519");

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

        double c,f;

        f = in.nextDouble();

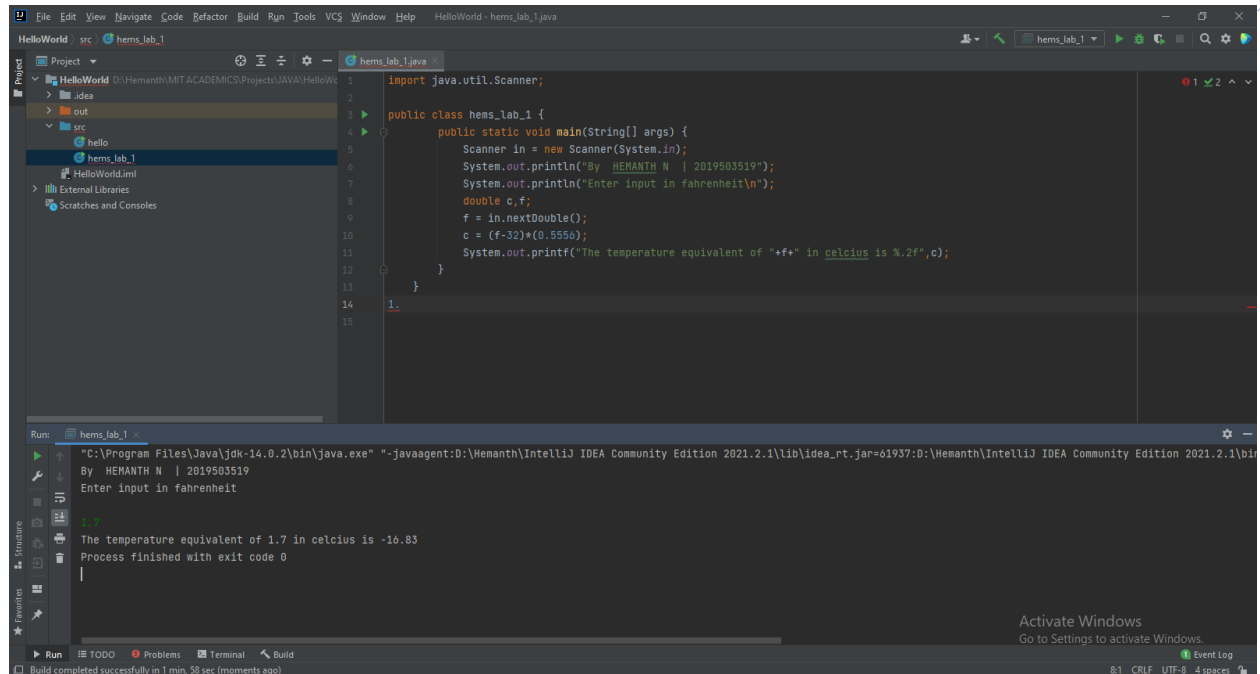
        c = (f-32)*(0.5556);

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

    }

}
```

OUTPUT:



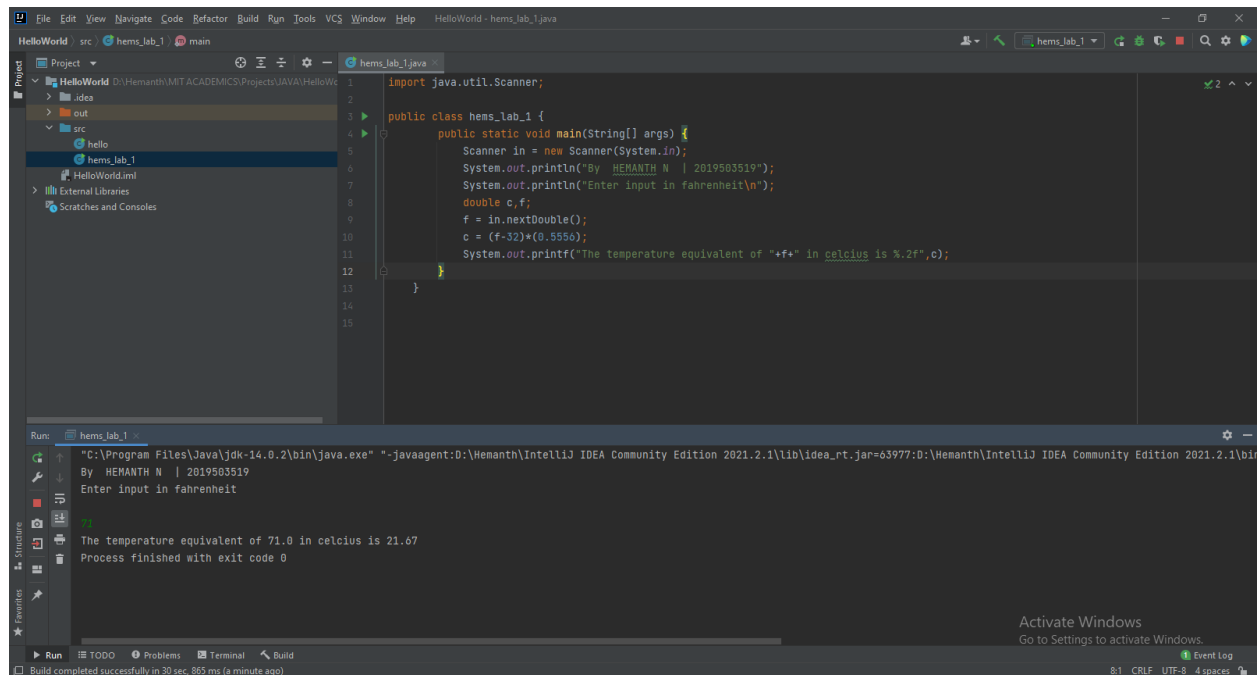
The screenshot shows the IntelliJ IDEA IDE with a project named 'HelloWorld'. The source file 'hems_lab_1.java' is open, displaying the following code:

```
1 import java.util.Scanner;
2
3
4 public class hems_lab_1 {
5     public static void main(String[] args) {
6         Scanner in = new Scanner(System.in);
7         System.out.println("By HEMANTH N | 2019503519");
8         System.out.println("Enter input in fahrenheit(n)");
9         double c,f;
10        f = in.nextDouble();
11        c = (f-32)*(0.5556);
12        System.out.printf("The temperature equivalent of "+f+" in celcius is %.2f",c);
13    }
14 }
15
```

The Run window at the bottom shows the execution output:

```
Run: hems_lab_1
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=61937:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\bin"
By HEMANTH N | 2019503519
Enter input in fahrenheit
1.7
The temperature equivalent of 1.7 in celcius is -16.83
Process finished with exit code 0
```

The status bar at the bottom indicates 'Build completed successfully in 1 min 58 sec (moments ago)'.



The screenshot shows the IntelliJ IDEA IDE with the same project 'HelloWorld' and source file 'hems_lab_1.java'. The code is identical to the previous screenshot:

```
1 import java.util.Scanner;
2
3
4 public class hems_lab_1 {
5     public static void main(String[] args) {
6         Scanner in = new Scanner(System.in);
7         System.out.println("By HEMANTH N | 2019503519");
8         System.out.println("Enter input in fahrenheit(n)");
9         double c,f;
10        f = in.nextDouble();
11        c = (f-32)*(0.5556);
12        System.out.printf("The temperature equivalent of "+f+" in celcius is %.2f",c);
13    }
14 }
15
```

The Run window shows the execution output for a different input:

```
Run: hems_lab_1
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=63977:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\bin"
By HEMANTH N | 2019503519
Enter input in fahrenheit
71.0
The temperature equivalent of 71.0 in celcius is 21.67
Process finished with exit code 0
```

The status bar at the bottom indicates 'Build completed successfully in 30 sec, 865 ms (a minute ago)'.

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 hems_lab_1_2 {

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.println("BY HEMANTH N 2019503519");
        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:

```

1  import java.util.*;
2  public class hems_lab_1_2 {
3
4      public static void main(String[] args) {
5          Scanner in = new Scanner(System.in);
6          System.out.println("BY HEMANTH N 2019503519");
7          double u,a,t,v;
8          System.out.println("Enter initial velocity - ");
9          u = in.nextDouble();
10         System.out.println("Enter acceleration - ");
11         a = in.nextDouble();
12         System.out.println("Enter time duration - ");
13         t = in.nextDouble();
14         v = u + a*t;
15         System.out.printf("The final velocity is %.2f",v);
16     }
17 }

```

Run: hems_lab_1_2

```

"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=60916:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\bin"
BY HEMANTH N 2019503519
Enter initial velocity -
40
Enter acceleration -
1
Enter time duration -
1
The final velocity is 49.25
Process finished with exit code 0

```

Build completed successfully in 10 sec, 73 ms (2 minutes ago)

- 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 hems_lab_1_3 {

    public static void main(String[] args)

    {

        Scanner in = new Scanner(System.in);

        System.out.println("BY HEMANTH N | 2019503519");

        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:

```
import java.util.*;  
public class hems_lab_1_3 {  
    public static void main(String[] args)  
    {  
        Scanner in = new Scanner(System.in);  
        System.out.println("BY HEMANTH N | 2019503519");  
        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);  
    }  
}
```

Run: hems_lab_1_3

"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=65515:0:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\bin\java.exe" D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\workspace\HelloWorld\src\hems_lab_1_3.java

BY HEMANTH N | 2019503519

Enter initial velocity -

Enter acceleration -

Enter time duration -

The displacement is 1737.25

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 hems_lab_1_4 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);

        System.out.println("By HEMANTH N 2019503519");

        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;

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

    }

}
```

OUTPUT:

```

import java.util.*;
public class hems_lab_1_4 {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        System.out.println("By HEMANTH N 2019503519");
        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;
        System.out.printf("Output: %d:%d:%d", hh, mm, ss);
    }
}

```

Run: hems_lab_1_4

```

"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\lib\idea_rt.jar=56149:D:\Hemanth\IntelliJ IDEA Community Edition 2021.2.1\bin"
By HEMANTH N 2019503519
Enter number of seconds elapsed -
Output: 0:0:25
Process finished with exit code 0

```

```

Run: hems_lab_1_4
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-j
By HEMANTH N 2019503519
Enter number of seconds elapsed -
241
Output: 0:4:1
Process finished with exit code 0

```

```

"C:\Program Files\Java\jdk-14.0.2\bin\java.exe"
By HEMANTH N 2019503519
Enter number of seconds elapsed -
66522
Output: 18:28:42
Process finished with exit code 0

```
