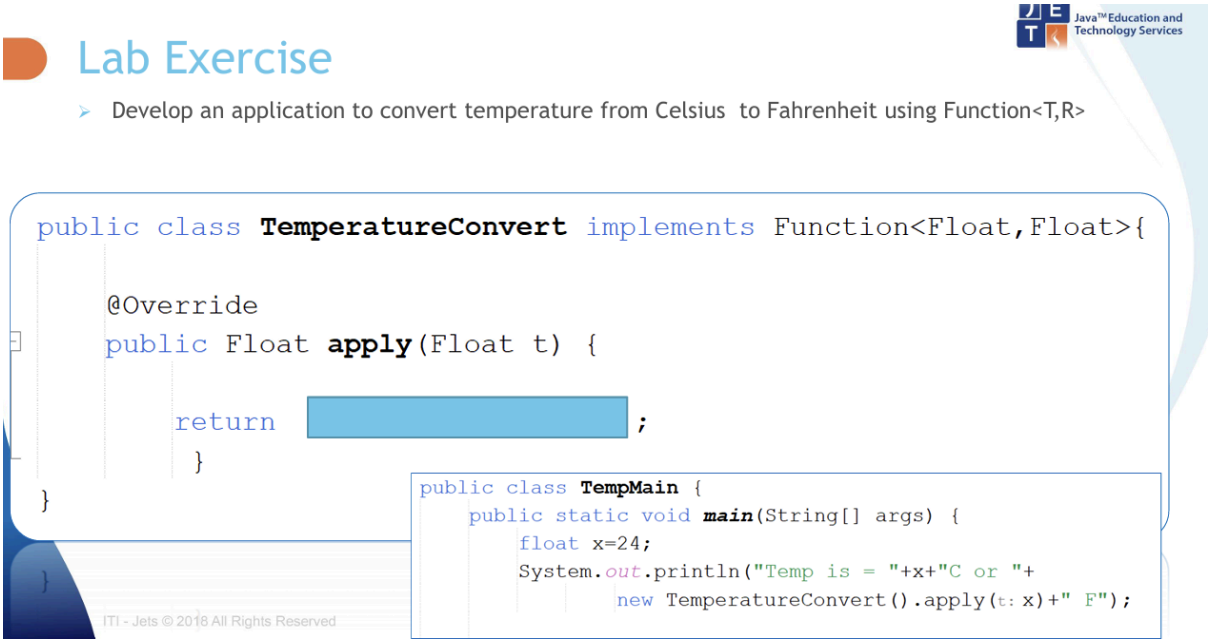
Java lab 3

Lab Exercises

lab1:

Develop an application to convert temperature from Celsius to Fahrenheit using Function

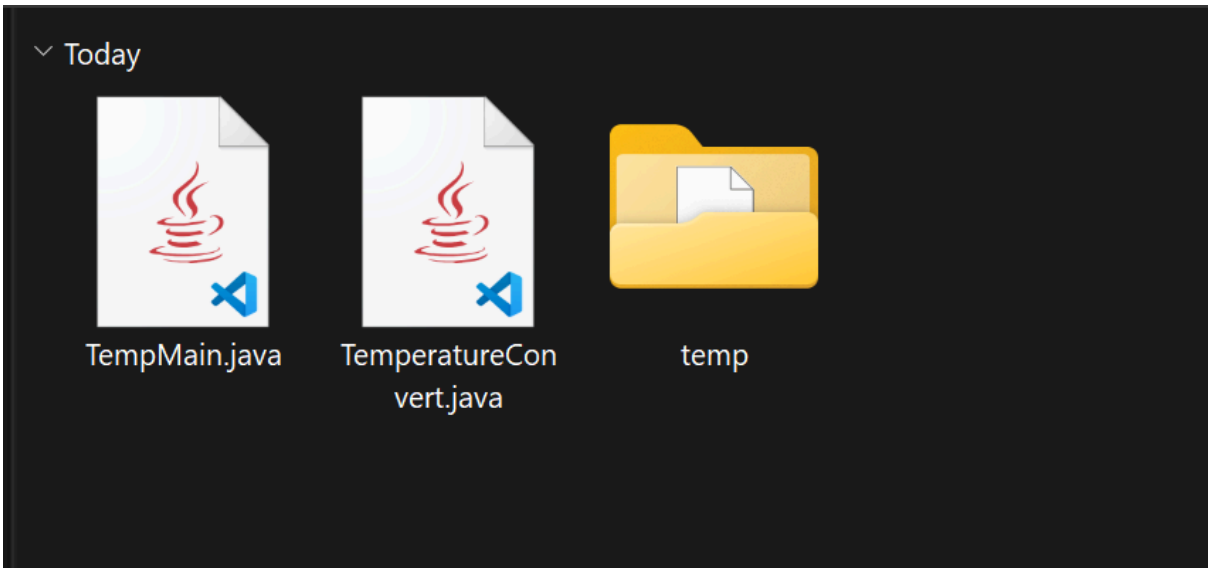


Open notepad write this
in TemperatureConvert.java:

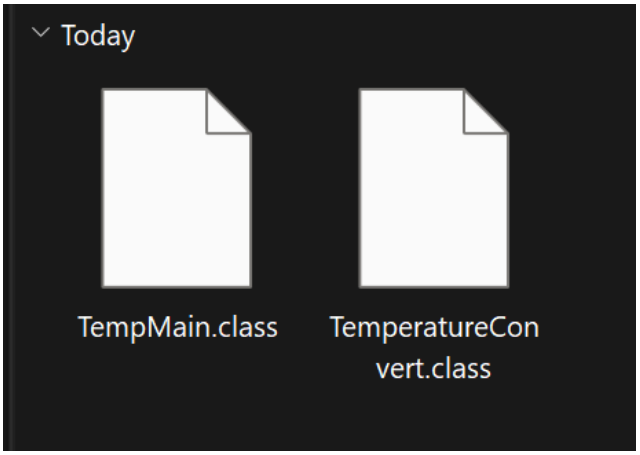
```
package temp;
import java.util.function.Function;

public class TemperatureConvert implements Function<Float,Float>{
	@Override
	public Float apply (Float t){
		return ((t - 32) * (5.0f/9));
	}
}
```

in TempMain.java:

```
package temp;
import java.util.function.Function;

public class TempMain {
	public static void main(String[] args){
		float x = 98.6;
		System.out.println("Temp is "+x+" F or "+ new
TemperatureConvert().apply(x)+" F");
	}
}
```



And Inside the temp package:

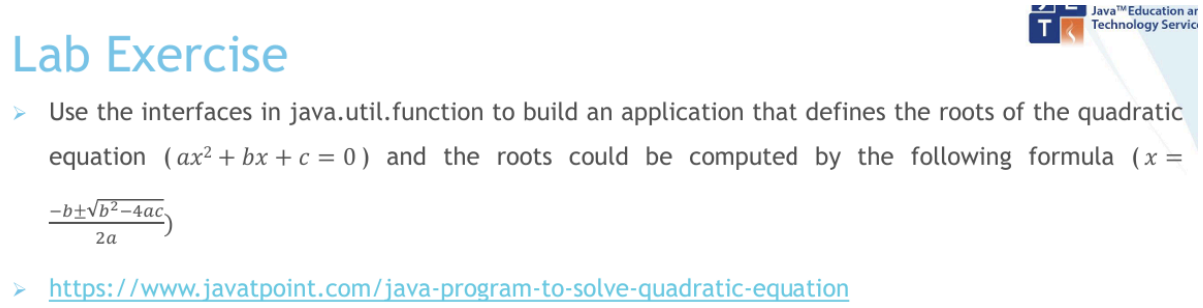


```
C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.1>javac -d . TemperatureConvert.java

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.1>javac -d . TempMain.java

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.1>java temp.TempMain
Temp is 98.6 F or 37.0 F

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.1>
```

lab2:

➢ **Use the interfaces in java.util.function to build an application that defines the roots of the quadratic equation (**ax**2+**bx **+**c **= 0) and the roots could be computed by the following formula (**x **= −**b**±** b**2−4**ac **2**a **)**

[Java Program to Solve Quadratic Equation - Javatpoint]



Open notepad write this
in QuadraticEquation **.java:**

```
package quadratic;


import java.util.function.Function;

public class QuadraticEquation implements Function<Float[], String> {
	@Override
	public String apply(Float[] coe) {
	float a = coe[0];
	float b = coe[1];
	float c = coe[2];


	if (a == 0) {
			return "This is a linear equation, not quadratic.";
	}


	float d = b * b - 4 * a * c;
```

```
        if (d > 0) {
                        float r1 = (-b + (float) Math.sqrt(d)) / (2 * a);
                        float r2 = (-b - (float) Math.sqrt(d)) / (2 * a);
                        return "The roots are real : Root 1 = " + r1 + ", Root 2 =
" + r2;
        } else if (d == 0) {
                        float r = -b / (2 * a);
                        return "The roots are real and equal: Root = " + r;
        } else {
                        float realPart = -b / (2 * a);
                        float imaginaryPart = (float) Math.sqrt(-d) / (2 * a);
                        return "The roots are complex: Root 1 = " + realPart + "
+ " + imaginaryPart + "i, Root 2 = " + realPart + " - " + imaginaryPart +
"i";
        }
    }
}
```

in QuadraticMain **.java:**

```
package quadratic;
import java.util.function.Function;
public class QuadraticMain  {
        public static void main(String[] args){
                float a=1;
                float b=5;
                float c=6;

                System.out.println("the the roots of the quadratic equation
are :-\n "+ new QuadraticEquation().apply(new Float[]{a, b, c}));

        }
}
```

```
C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.2>javac -d . QuadraticEquation.java

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.2>javac -d . QuadraticMain.java

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.2>java quadratic.QuadraticMain
the the roots of the quadratic equation are :-
 The roots are real : Root 1 = -2.0, Root 2 = -3.0

C:\Users\nadam\Downloads\open source\Java\day3\lab\lab3.2>
```