

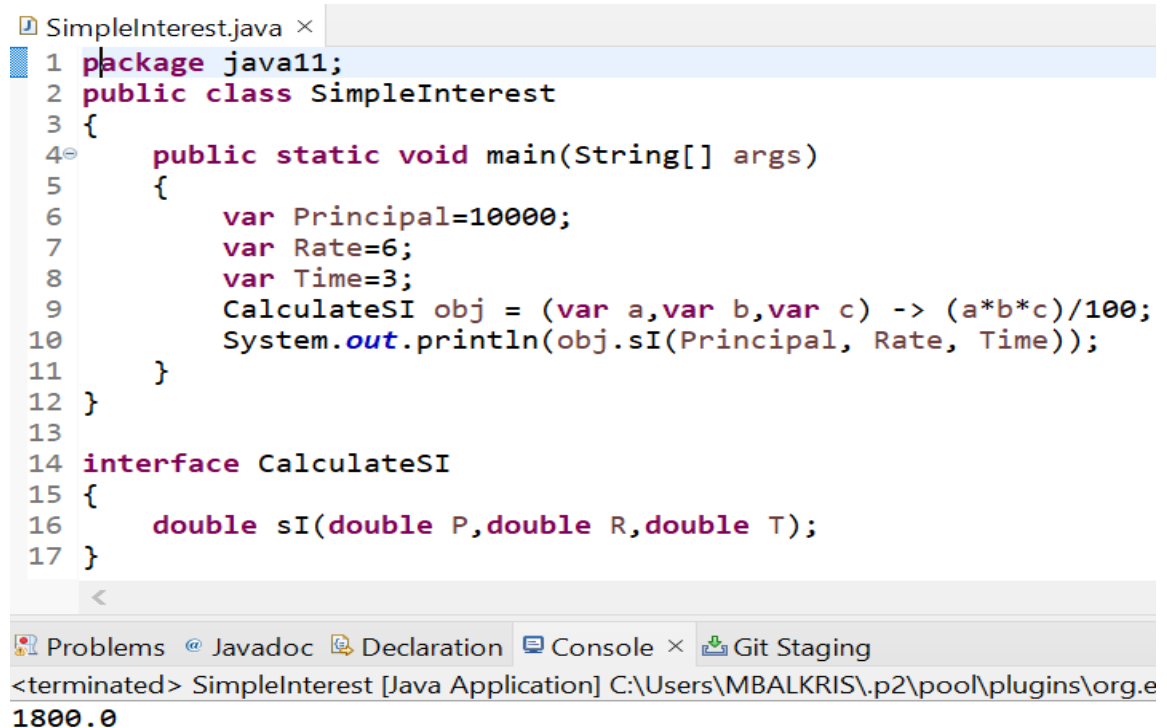
CORE JAVA

JAVA11 ASSIGNMENT

1. Write a Java program to calculate Simple Interest with minimal code using features of Java 11.

Hint:- use the concept of functional interface and local variable syntax for lambda parameters.

Code: -



```
SimpleInterest.java ×
1 package java11;
2 public class SimpleInterest
3 {
4     public static void main(String[] args)
5     {
6         var Principal=10000;
7         var Rate=6;
8         var Time=3;
9         CalculateSI obj = (var a,var b,var c) -> (a*b*c)/100;
10        System.out.println(obj.sI(Principal, Rate, Time));
11    }
12 }
13
14 interface CalculateSI
15 {
16     double sI(double P,double R,double T);
17 }
```

< Problems @ Javadoc Declaration Console × Git Staging

<terminated> SimpleInterest [Java Application] C:\Users\MBALKRIS\.p2\pool\plugins\org.e
1800.0

2. Java 11 supports var keyword for variable declarations. List the scenarios where var keyword cannot be used for such variable declarations. Give reason in support of your answer for each scenario.

Code: -

```
SimpleInterest.java  ArrayList.java  Student.java  PriceDisplay.java  HttpClientAPI.java
1 package java11;
2 public class Variable
3 {
4 public static void main(String[] args)
5 {
6     long countNumberOfFiles(var fileList);
7     //var count=null;
8     //var z=() -> {};
9 }
10 }
```

Problems @ Javadoc Declaration Console × Git Staging
<terminated> Variable [Java Application] C:\Users\MBALKRIS\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full\jre\bin\java.exe
Exception in thread "main" java.lang.Error: Unresolved compilation problems:
Syntax error on token "long", record expected
Syntax error, insert "RecordBody" to complete BlockStatements

at java11/java11.Variable.main([Variable.java:6](#))

```
SimpleInterest.java  ArrayList.java  Student.java  PriceDisplay.java  HttpClientAPI.java
1 package java11;
2 public class Variable
3 {
4 public static void main(String[] args)
5 {
6     //long countNumberOfFiles(var fileList);
7     var count=null;
8     //var z=() -> {};
9 }
10 }
```

Problems @ Javadoc Declaration Console × Git Staging
<terminated> Variable [Java Application] C:\Users\MBALKRIS\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full\jre\bin\java.exe
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Cannot infer type for local variable initialized to 'null'

at java11/java11.Variable.main([Variable.java:7](#))

```

1 package java11;
2 public class Variable
3 {
4 public static void main(String[] args)
5 {
6     //long countNumberOfFiles(var fileList);
7     //var count=null;
8     var z=() -> {};
9 }
10 }

```

Problems @ Javadoc Declaration Console × Git Staging

<terminated> Variable [Java Application] C:\Users\MBALKRIS\.p2\pool\plugins\org.eclipse.justj.openjdk.h
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
Lambda expression needs an explicit target-type
at java11/java11.Variable.main(Variable.java:8)

3. “A quick brown fox jumps over the lazy dog”. Create an ArrayList from the given String. Such an ArrayList should include each word from the given sentence. Finally convert such List to an array using Java11 methods and print the output.

Code:-

```

1 package java11;
2
3 import java.util.Arrays;
4 import java.util.List;
5
6 public class ArrayList
7 {
8 public static void main(String[] args)
9 {
10 List<String> str = Arrays.asList("A","quick","brown","fox","jumps","over","the","lazy","dog.");
11 System.out.println(str);
12 str.toArray();
13 str.forEach(l -> System.out.print(l + " "));
14 }
15 }

```

Problems @ Javadoc Declaration Console × Git Staging

<terminated> ArrayList [Java Application] C:\Users\MBALKRIS\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.
[A, quick, brown, fox, jumps, over, the, lazy, dog.]
A quick brown fox jumps over the lazy dog.

4. Using features of Java11, read the data from a text file (File name:StudentList.txt). Calculate the count of students and print the names as well as the total count of students on the screen. (If any line in file doesn't contain a name, for such a record blank space should not be printed in the output).

Hint:- Use Java11 features of files and String methods to reduce the lines of code to be written.

Code:-

```

SimpleInterest.java  ArrayList.java  *Student.java ×
3 import java.nio.file.Files;
4 import java.nio.file.Path;
5 import java.util.List;
6 import java.util.stream.Collectors;
7
8 public class Student
9 {
10 public static void main(String[] args) throws IOException
11 {
12     var path = "C:\\Users\\MBALKRIS\\Downloads\\Java11Assignments_StudentList.txt";
13     List<String> str = Files.readAllLines(Path.of(path));
14     long count = str.stream().filter(l -> !l.isBlank()).count();
15     System.out.println(str.stream().filter(l -> !l.isBlank()).map(l-> l.strip())
16         .collect(Collectors.toList()) + "\nThere are " +count + " Students");
17 }
18 }

```

Problems Javadoc Declaration Console Git Staging

<terminated> Student [Java Application] C:\Users\MBALKRIS\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64
[John, Mathew, Sheeren, George, Peeter, Steven, Michel, Andrew]
There are 8 Students

- Write a program with menu to accept the price of certain items and display their total. When user selects Option 1: should accept the prices of different products and insert these prices into first file (each amount to be inserted in a newline in the file). Next, total of these values should be saved in a new file. Option 2: should allow the user to view the total of these prices from the second file.

Hint: - Use java11 features of files and String methods to reduce the line of code.

Code:-

```

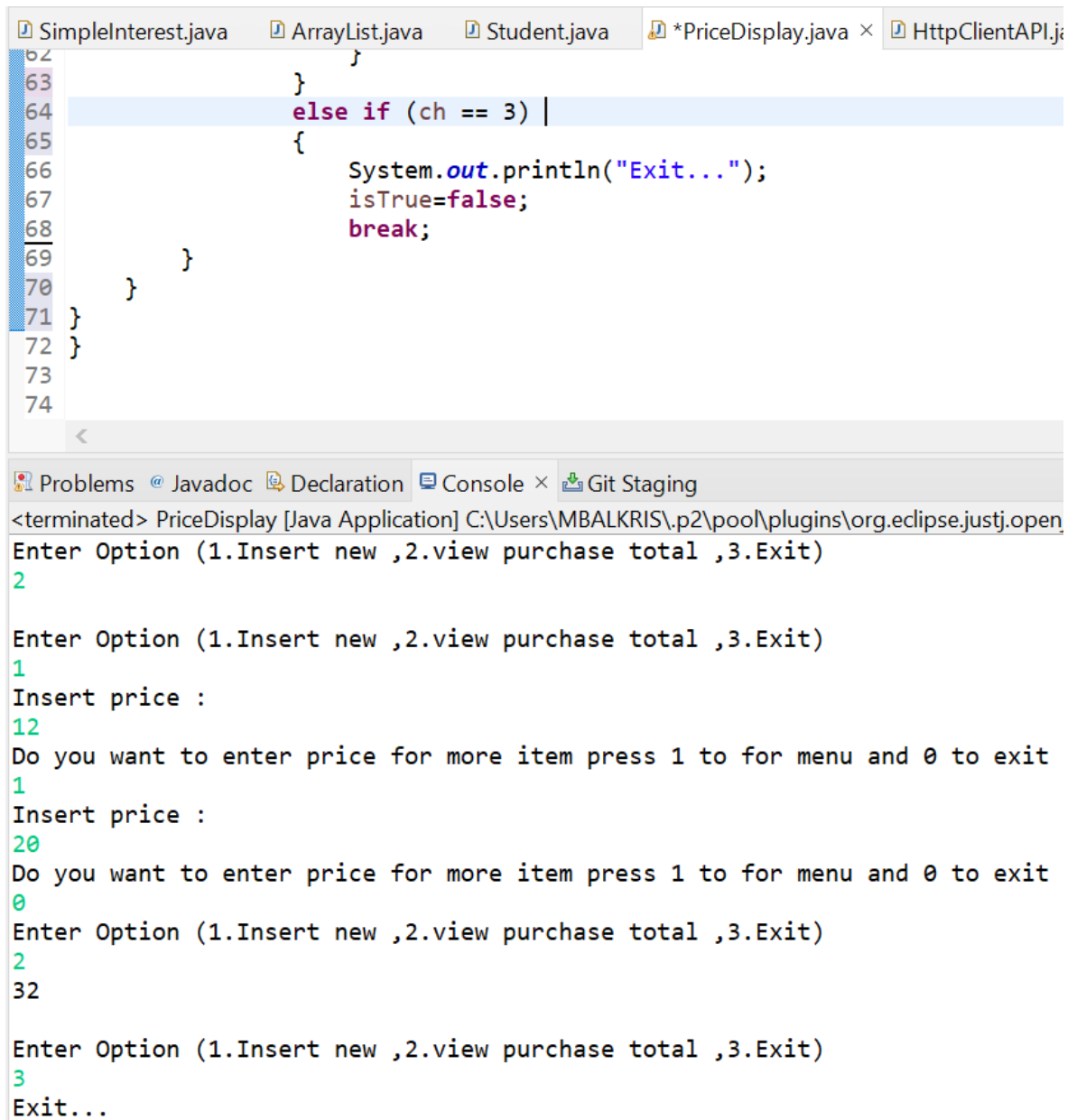
SimpleInterest.java  ArrayList.java  Student.java  *PriceDisplay.java ×  HttpClientAPI.java
1 package java11;
2 import java.io.IOException;
3 import java.nio.file.Files;
4 import java.nio.file.Path;
5 import java.nio.file.StandardOpenOption;
6 import java.util.Scanner;
7
8 public class PriceDisplay
9 {
10 public static void main(String[] args)
11 {
12     var path1="C:\\Users\\MBALKRIS\\Downloads\\File1.txt";
13     var path2="C:\\Users\\MBALKRIS\\Downloads\\File2.txt";
14     int ch,price,totalPrice=0;
15     boolean isTrue=true;
16     Scanner sc=new Scanner(System.in);
17     Boolean selected = true;
18     while(isTrue)
19     {
20         System.out.println("Enter Option (1.Insert new ,2.view purchase total ,3.Exit)");
21         ch=sc.nextInt();
22
23         if(ch == 1)
24         {
25             int yN;
26             while (selected)
27             {
28                 try
29                 {
30                     System.out.println("Insert price :");
31                     price=sc.nextInt();
32

```

```

SimpleInterest.java  ArrayList.java  Student.java  *PriceDisplay.java ×  HttpClientAPI.java
33         Files.writeString(Path.of(path1),Integer.toString(price)+"\n", StandardOpenOption.APPEND);
34         totalPrice +=price;
35         Files.writeString(Path.of(path2),Integer.toString(totalPrice)+"\n", StandardOpenOption.CREATE);
36
37     }
38     catch(IOException e)
39     {
40         e.printStackTrace();
41     }
42     System.out.println("Do you want to enter price for more item press 1 to for menu and 0 to exit");
43     yN = sc.nextInt();
44     sc.nextLine();
45     if (yN == 0)
46     {
47         selected = false;
48     }
49     }
50 }
51 else if (ch==2)
52 {
53     try
54     {
55         String data=Files.readString(Path.of(path2));
56         System.out.println(data);
57     }
58     catch(IOException e)
59     {
60         e.printStackTrace();
61     }
62 }
63 }
64 else if (ch == 3)

```



The screenshot shows an IDE with several tabs: SimpleInterest.java, ArrayList.java, Student.java, *PriceDisplay.java (active), and HttpClientAPI.java. The active tab displays the following Java code:

```
62     }
63     }
64     else if (ch == 3) |
65     {
66         System.out.println("Exit...");
67         isTrue=false;
68         break;
69     }
70 }
71 }
72 }
73
74
```

Below the code editor, the 'Console' tab is active, showing the execution output:

```
<terminated> PriceDisplay [Java Application] C:\Users\MBALKRIS\p2\pool\plugins\org.eclipse.justj.open
Enter Option (1.Insert new ,2.view purchase total ,3.Exit)
2

Enter Option (1.Insert new ,2.view purchase total ,3.Exit)
1
Insert price :
12
Do you want to enter price for more item press 1 to for menu and 0 to exit
1
Insert price :
20
Do you want to enter price for more item press 1 to for menu and 0 to exit
0
Enter Option (1.Insert new ,2.view purchase total ,3.Exit)
2
32

Enter Option (1.Insert new ,2.view purchase total ,3.Exit)
3
Exit...
```

6. Write a code using HttpClientAPI which sends a GET request to <https://httpbin.org/get>, and print out the response header, status code and body for the given URL.
Code: -

```

SimpleInterest.java  ArrayList.java  Student.java  PriceDisplay.java  *HttpClientAPI.java x
1 package java11;
2 import java.io.IOException;
3 import java.net.URI;
4 import java.net.http.HttpClient;
5 import java.net.http.HttpRequest;
6 import java.net.http.HttpResponse;
7
8 public class HttpClientAPI
9 {
10 public static void main(String[] args) throws IOException, InterruptedException
11 {
12     String url = "http://httpbin.org/get";
13     var request = HttpRequest.newBuilder()
14         .uri(URI.create(url))
15         .GET()
16         .build();
17     var client = HttpClient.newHttpClient();
18     HttpResponse<String> response = client.send(request, HttpResponse.BodyHandlers.ofString());
19     System.out.println("Status Code: " + response.statusCode());
20     System.out.println("Response: " + response.body());
21 }
22 }

```

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<terminated> HttpClientAPI [Java Application] C:\Users\MBALKRIS\.p2\pool\plugins\org.ecl

Status Code: 200

```

Response: {
  "args": {},
  "headers": {
    "Content-Length": "0",
    "Host": "httpbin.org",
    "Http2-Settings": "AAEAAEAAAAIAAAABAAMAAABkAAQBAAAAAAUAAEAA",
    "Upgrade": "h2c",
    "User-Agent": "Java-http-client/17",
    "X-Amzn-Trace-Id": "Root=1-6188282b-475d0fbf08088c4b34f83a0f"
  },
  "origin": "103.216.171.162",
  "url": "http://httpbin.org/get"
}

```