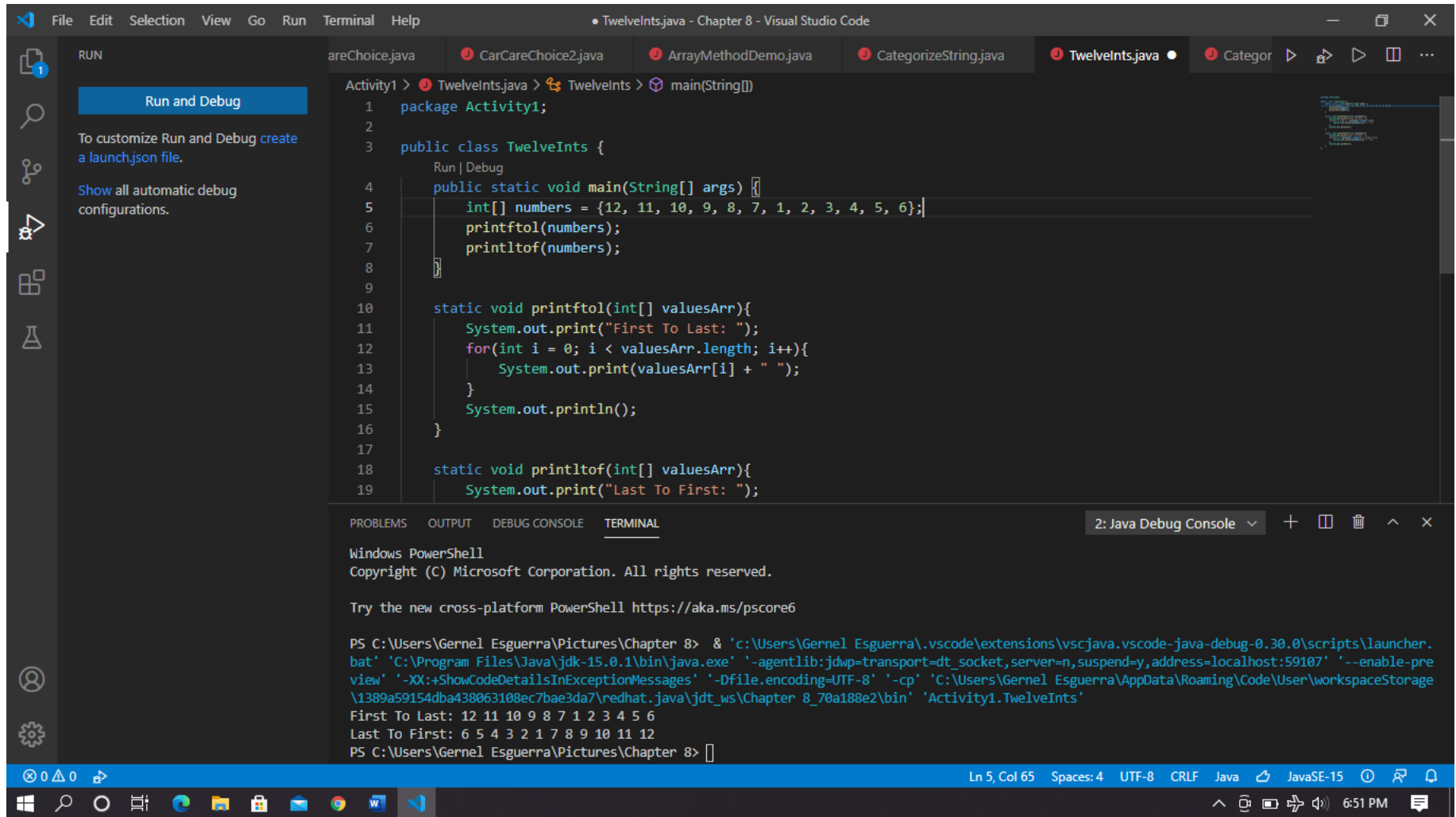
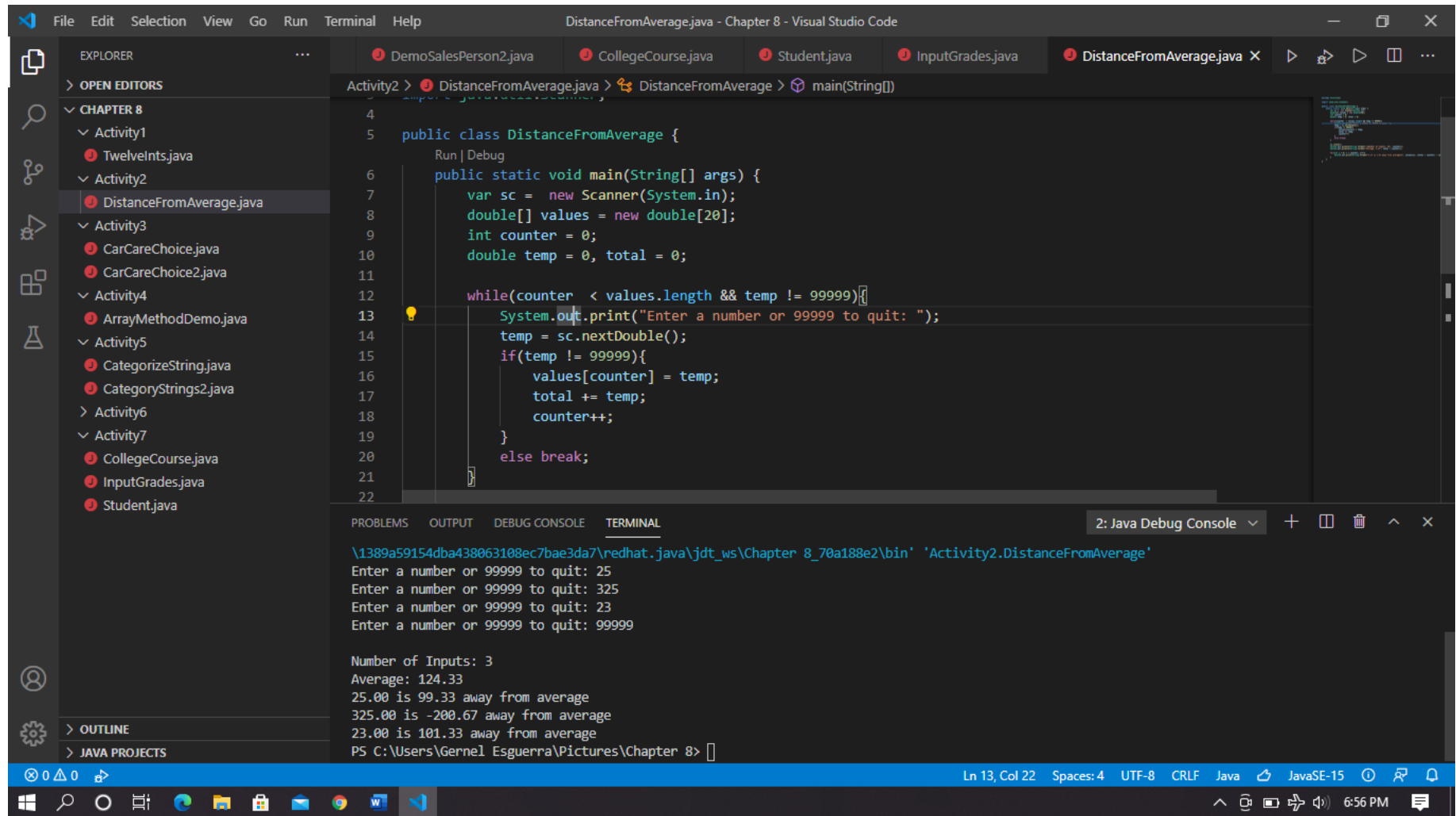


1. Chapter 8 – TwelveInts.java



2. Chapter 8 - DistanceFromAverage.java



The screenshot displays the Visual Studio Code interface with the `DistanceFromAverage.java` file open. The Explorer sidebar on the left shows a project structure for Chapter 8, including various activities and Java files. The main editor shows the code for `DistanceFromAverage.java`, which implements a program to calculate the distance of input numbers from their average. The code includes a `main` method that uses a `Scanner` to read input, a `while` loop to process numbers, and a final calculation of the average and distances.

```
1 import java.util.Scanner;
2
3
4
5 public class DistanceFromAverage {
6     Run | Debug
7     public static void main(String[] args) {
8         var sc = new Scanner(System.in);
9         double[] values = new double[20];
10        int counter = 0;
11        double temp = 0, total = 0;
12
13        while(counter < values.length && temp != 99999){
14            System.out.print("Enter a number or 99999 to quit: ");
15            temp = sc.nextDouble();
16            if(temp != 99999){
17                values[counter] = temp;
18                total += temp;
19                counter++;
20            }
21            else break;
22        }
23    }
24 }
```

The terminal at the bottom shows the execution of the program. It prompts the user to enter numbers, and the user enters 25, 325, and 23. When the user enters 99999 to quit, the program calculates the average (124.33) and the distance of each input from the average.

```
\1389a59154dba438063108ec7bae3da7\redhat.java\jdt_ws\Chapter 8_70a188e2\bin' 'Activity2.DistanceFromAverage'
Enter a number or 99999 to quit: 25
Enter a number or 99999 to quit: 325
Enter a number or 99999 to quit: 23
Enter a number or 99999 to quit: 99999

Number of Inputs: 3
Average: 124.33
25.00 is 99.33 away from average
325.00 is -200.67 away from average
23.00 is 101.33 away from average
PS C:\Users\Gernel Esguerra\Pictures\Chapter 8> |
```

3. Chapter 8 – CarCareChoice.java

The screenshot displays the Visual Studio Code interface with the following components:

- EXPLORER:** Shows the project structure with 'CHAPTER 8' expanded, listing activities 1 through 7. 'Activity3' is selected, containing 'CarCareChoice.java'.
- EDITOR:** Displays the code for 'CarCareChoice.java' in the 'main(String[])' method. The code includes a scanner, a list of services, and a loop that prompts the user for a service and calculates its price.
- TERMINAL:** Shows the execution output, including the list of services and the user's input 'oil change', resulting in a price of \$25.00.

```
8 float total = 0;
9 Scanner sc = new Scanner(System.in);
10 System.out.println("List of Services: \"oil change\", \"tire rotation\", \"battery check\", \"break insp");
11
12 String s = "oil change";
13
14 while(true)
15 {
16     System.out.print("\nEnter Service: ");
17     s = sc.nextLine();
18     if(s.equalsIgnoreCase("oil change")){
19         total = prices[0];
20         break;
21     }
22     else if(s.equalsIgnoreCase("tire rotation")){
23         total = prices[1];
24         break;
25     }
26     else if(s.equalsIgnoreCase("battery check")){
27         total = prices[2];
```

325.00 is -200.67 away from average
23.00 is 101.33 away from average
PS C:\Users\Gernel Esguerra\Pictures\Chapter 8> c:: cd 'c:\Users\Gernel Esguerra\Pictures\Chapter 8'; & 'c:\Users\Gernel Esguerra\.vscode\extensions\vscjava.vscode-java-debug-0.30.0\scripts\launcher.bat' 'C:\Program Files\Java\jdk-15.0.1\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:59205' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\Gernel Esguerra\AppData\Roaming\Code\User\workspaceStorage\1389a59154dba438063108ec7bae3da7\redhat.java\jdt_ws\Chapter_8_70a188e2\bin' 'Activity3.CarCareChoice'
List of Services: "oil change", "tire rotation", "battery check", "break inspection".
Enter Service: oil change
Service Price is: \$25.00
PS C:\Users\Gernel Esguerra\Pictures\Chapter 8>

Chapter 8 – CarCareChoice.java

File Edit Selection View Go Run Terminal Help CarCareChoice2.java - Chapter 8 - Visual Studio Code

EXPLORER

OPEN EDITORS

CHAPTER 8

- Activity1
- TwelveInts.java
- Activity2
- DistanceFromAverage.java
- Activity3
 - CarCareChoice.java
 - CarCareChoice2.java**
- Activity4
 - ArrayMethodDemo.java
- Activity5
 - CategorizeString.java
 - CategoryStrings2.java
- Activity6
- Activity7
 - CollegeCourse.java
 - InputGrades.java
 - Student.java

Activity3 > CarCareChoice2.java > CarCareChoice2 > main(String[])

```
13 String s = "oil change";
14
15 while(true)
16 {
17     System.out.print("\nEnter Service: ");
18     s = sc.nextLine();
19     if(s.equalsIgnoreCase("oil change") || s.equalsIgnoreCase("oil")){
20         total = prices[0];
21         break;
22     }
23     else if(s.equalsIgnoreCase("tire rotation") || s.equalsIgnoreCase("tir")){
24         total = prices[1];
25         break;
26     }
27     else if(s.equalsIgnoreCase("battery check") || s.equalsIgnoreCase("bat")){
28         total = prices[2];
29         break;
30     }
31     else if(s.equalsIgnoreCase("break inspection") || s.equalsIgnoreCase("bre")){
32         total = prices[3];
33     }
34 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

2: Java Debug Console

Service Price is: \$25.00

PS C:\Users\Gernel Esguerra\Pictures\Chapter 8> c:: cd 'c:\Users\Gernel Esguerra\Pictures\Chapter 8'; & 'c:\Users\Gernel Esguerra\.vscode\extensions\vscjava.vscode-java-debug-0.30.0\scripts\launcher.bat' 'C:\Program Files\Java\jdk-15.0.1\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:59225' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\Gernel Esguerra\AppData\Roaming\Code\User\workspaceStorage\1389a59154dba438063108ec7bae3da7\redhat.java\jdt_ws\Chapter_8_70a188e2\bin' 'Activity3.CarCareChoice2'

List of Services: "oil change", "tire rotation", "battery check", "break inspection".

First three[3] letters of the option is valid.

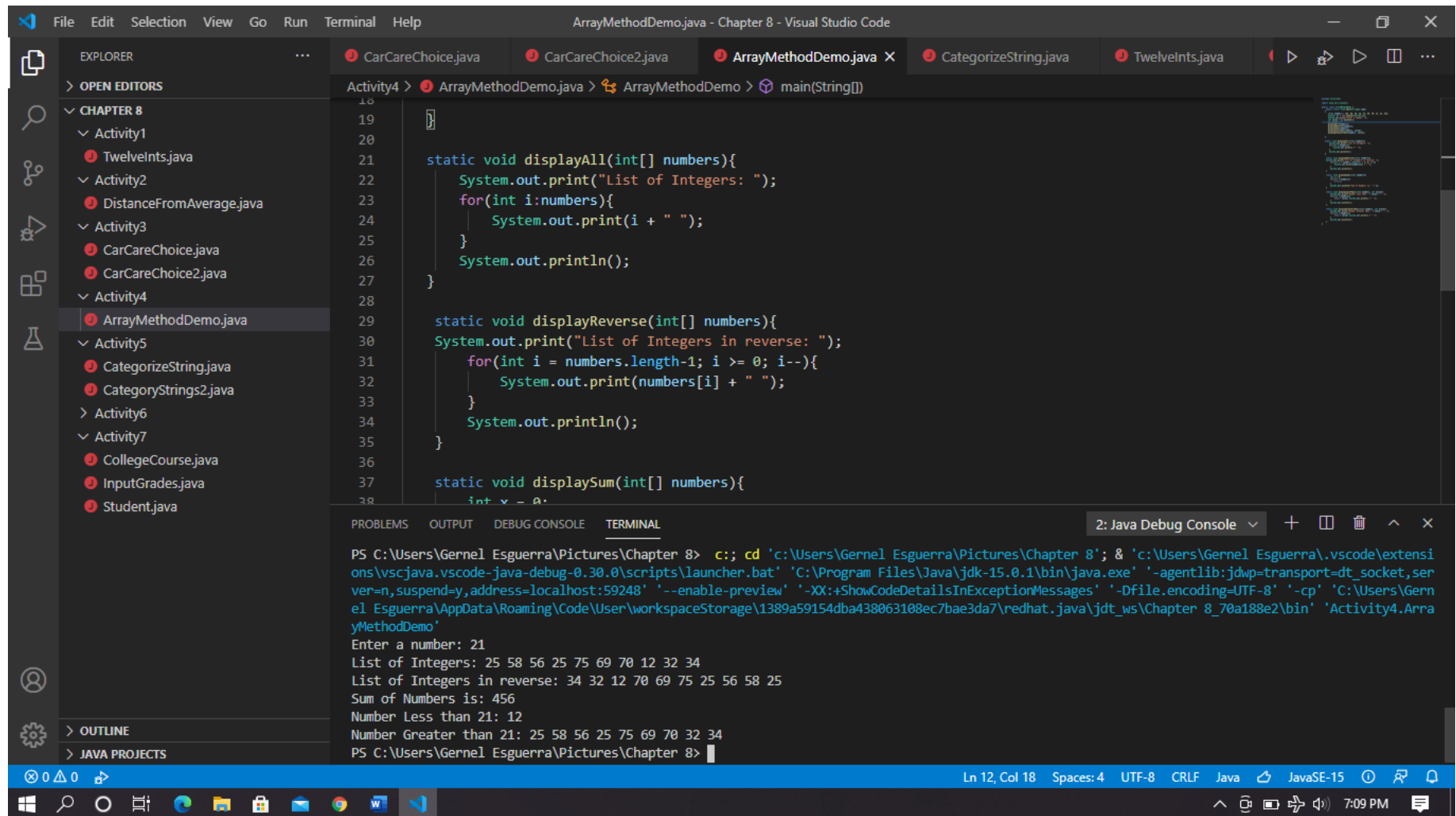
Enter Service: bat

Service Price is: \$15.00

PS C:\Users\Gernel Esguerra\Pictures\Chapter 8>

Ln 17, Col 23 Spaces: 4 UTF-8 CRLF Java JavaSE-15 7:06 PM

4. Chapter 8 – Array MethodDemo.java

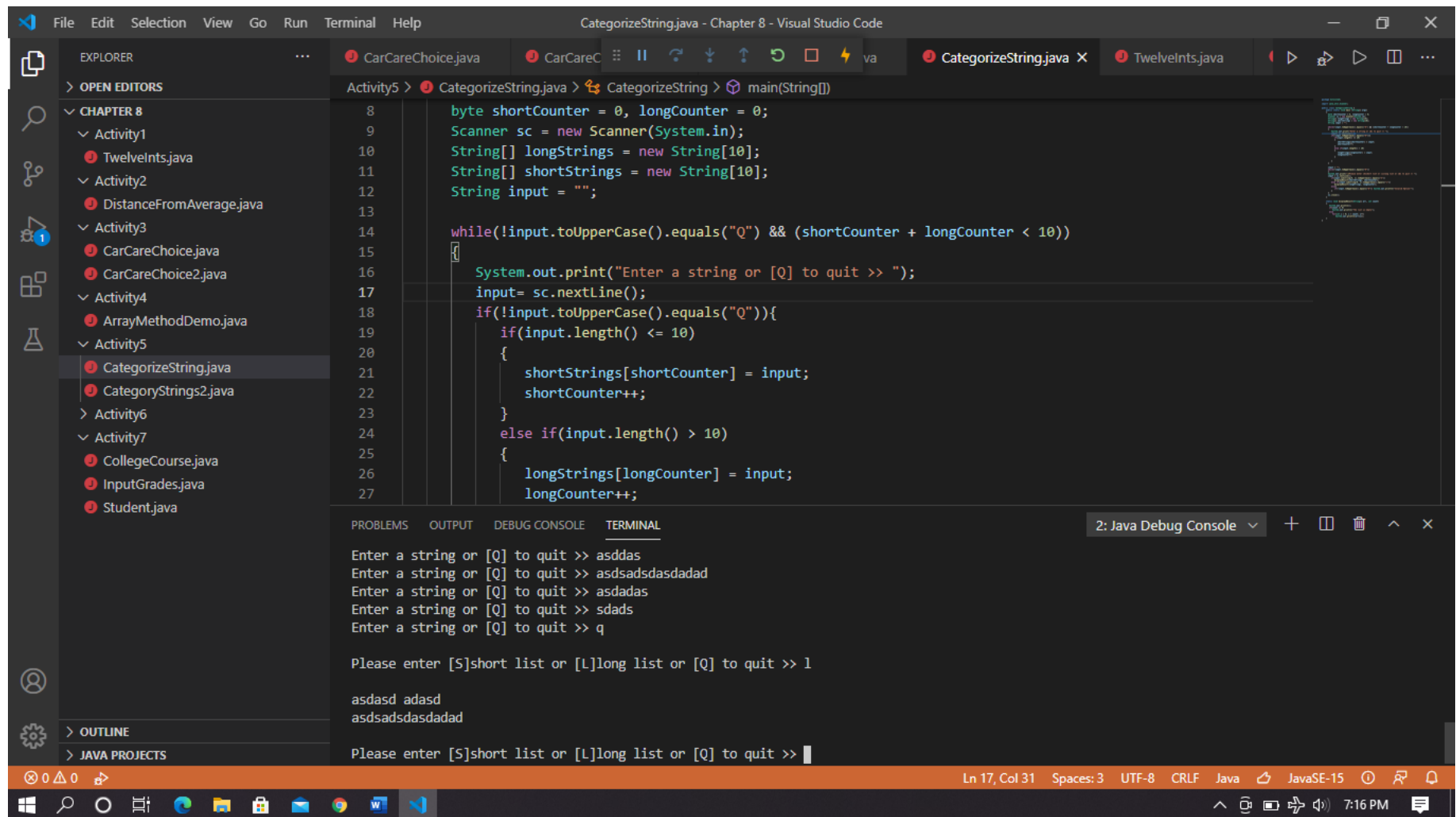


The screenshot displays the Visual Studio Code interface with the `ArrayMethodDemo.java` file open. The Explorer sidebar on the left shows the project structure, including `CHAPTER 8` and various activities. The main editor area shows the code for `ArrayMethodDemo.java`, which includes three static methods: `displayAll`, `displayReverse`, and `displaySum`. The terminal at the bottom shows the command to run the program and its output, which includes the list of integers, the reverse list, the sum, and the number less than 21.

```
File Edit Selection View Go Run Terminal Help
ArrayMethodDemo.java - Chapter 8 - Visual Studio Code

EXPLORER
> OPEN EDITORS
  Activity4 > ArrayMethodDemo.java > ArrayMethodDemo > main(String[])
  18
  19
  20
  21 static void displayAll(int[] numbers){
  22     System.out.print("List of Integers: ");
  23     for(int i:numbers){
  24         System.out.print(i + " ");
  25     }
  26     System.out.println();
  27 }
  28
  29 static void displayReverse(int[] numbers){
  30     System.out.print("List of Integers in reverse: ");
  31     for(int i = numbers.length-1; i >= 0; i--){
  32         System.out.print(numbers[i] + " ");
  33     }
  34     System.out.println();
  35 }
  36
  37 static void displaySum(int[] numbers){
  38     int sum = 0;
  39     for(int i:numbers){
  40         sum += i;
  41     }
  42     System.out.println("Sum of Numbers is: " + sum);
  43 }
  44
  45 public static void main(String[] args) {
  46     int[] numbers = {25, 58, 56, 25, 75, 69, 70, 12, 32, 34};
  47     displayAll(numbers);
  48     displayReverse(numbers);
  49     displaySum(numbers);
  50     int n = 21;
  51     if (n < 21) {
  52         System.out.println("Number Less than 21: " + n);
  53     } else {
  54         System.out.println("Number Greater than 21: " + n);
  55     }
  56 }
  57
  58 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
  2: Java Debug Console
  PS C:\Users\Gernel Esguerra\Pictures\Chapter 8> c:: cd 'c:\Users\Gernel Esguerra\Pictures\Chapter 8'; & 'c:\Users\Gernel Esguerra\.vscode\extensions\vscjava.vscode-java-debug-0.30.0\scripts\launcher.bat' 'C:\Program Files\Java\jdk-15.0.1\bin\java.exe' '-agentlib:jdwp=transport=dt_socket,server=n,suspend=y,address=localhost:59248' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.encoding=UTF-8' '-cp' 'C:\Users\Gernel Esguerra\AppData\Roaming\Code\User\workspaceStorage\1389a59154dba438063108ec7bae3da7\redhat.java\jdt_ws\Chapter_8_70a188e2\bin' 'Activity4.ArrayMethodDemo'
  Enter a number: 21
  List of Integers: 25 58 56 25 75 69 70 12 32 34
  List of Integers in reverse: 34 32 12 70 69 75 25 56 58 25
  Sum of Numbers is: 456
  Number Less than 21: 12
  Number Greater than 21: 25 58 56 25 75 69 70 32 34
  PS C:\Users\Gernel Esguerra\Pictures\Chapter 8>
```

5. Chapter 8 – CategorizedString.java



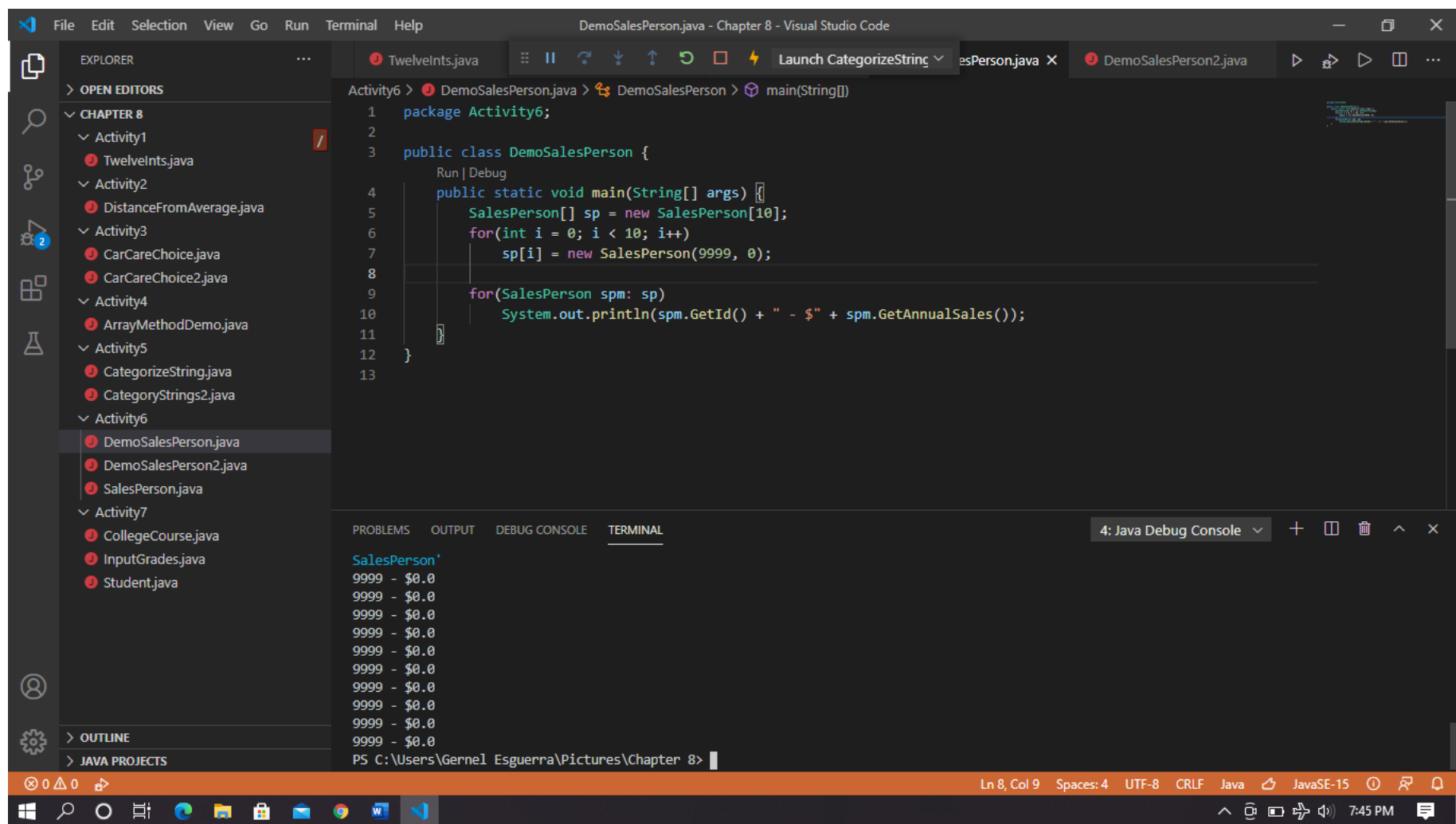
CategorizedString2.java

The screenshot shows the Visual Studio Code interface with the following components:

- EXPLORER:** A tree view on the left showing a project structure with folders 'CHAPTER 8' and 'Activity5'. Under 'CHAPTER 8', there are files 'TwelveInts.java', 'DistanceFromAverage.java', 'CarCareChoice.java', 'CarCareChoice2.java', 'ArrayMethodDemo.java', 'CategorizeString.java', and 'CategoryStrings2.java'. Under 'Activity5', there are files 'CategorizeString.java', 'CategoryStrings2.java', 'Activity6', 'Activity7', 'CollegeCourse.java', 'InputGrades.java', and 'Student.java'. 'CategoryStrings2.java' is selected.
- EDITOR:** The main workspace shows the code for 'CategoryStrings2.java'. The code is as follows:

```
38  
39     input = "";  
40     while(!input.toUpperCase().equals("Q"))  
41     {  
42         System.out.print("\nPlease enter [O]One word list(s), [T]Two word list(s), [L]Long word list(s) or [Q]  
43         input = sc.nextLine();  
44         if(input.substring(0, 1).toUpperCase().equals("O"))  
45             displayResult(one_word, one_word_counter);  
46         else if(input.substring(0, 1).toUpperCase().equals("T"))  
47             displayResult(two_word, two_word_counter);  
48         else if(input.substring(0, 1).toUpperCase().equals("L"))  
49             displayResult(long_word, long_word_counter);  
50         else{  
51             if(!input.toUpperCase().equals("Q")) System.out.println("Invalid Option!");  
52         }  
53     }  
54     sc.close();  
55 }  
57 static void displayResult(String[] arr, int count)
```
- TERMINAL:** The bottom panel shows the output of the program. It displays the prompt 'Enter a string or [Q] to quit >> q', followed by the prompt 'Please enter [O]One word list(s), [T]Two word list(s), [L]Long word list(s) or [Q] to quit >> o'. The user has entered 'fgdf' and 'jkhkhk', and the prompt has been repeated. The user has then entered 'l' and 'ggjhgjg hggjgh jg', and the prompt has been repeated again.

6. Chapter 8 – DemoSalesPerson.java



DemoSalesPerson2.java

Visual Studio Code interface showing a Java project named "DemoSalesPerson2.java - Chapter 8".

EXPLORER

- CHAPTER 8
 - Activity1
 - TwelveInts.java
 - Activity2
 - DistanceFromAverage.java
 - Activity3
 - CarCareChoice.java
 - CarCareChoice2.java
 - Activity4
 - ArrayMethodDemo.java
 - Activity5
 - CategorizeString.java
 - CategoryStrings2.java
 - Activity6
 - DemoSalesPerson.java
 - DemoSalesPerson2.java**
 - SalesPerson.java
 - Activity7
 - CollegeCourse.java
 - InputGrades.java
 - Student.java
- OUTLINE
- JAVA PROJECTS

Activity6 > DemoSalesPerson2.java > DemoSalesPerson2 > main(String[])

```
1 package Activity6;
2
3 public class DemoSalesPerson2 {
4     public static void main(String[] args) {
5         int def_id = 111;
6         double def_sales = 20000;
7         SalesPerson[] sp = new SalesPerson[10];
8         for(int i = 0; i < 10; i++)
9             sp[i] = new SalesPerson(def_id++, def_sales+=5000);
10
11         for(SalesPerson spm: sp)
12             System.out.println(spm.GetId() + " - $" + spm.GetAnnualSales());
13     }
14 }
15
```

PROBLEMS **OUTPUT** **DEBUG CONSOLE** **TERMINAL**

4: Java Debug Console

```
SalesPerson2'
111 - $25000.0
112 - $30000.0
113 - $35000.0
114 - $40000.0
115 - $45000.0
116 - $50000.0
117 - $55000.0
118 - $60000.0
119 - $65000.0
120 - $70000.0
PS C:\Users\Gernel Esguerra\Pictures\Chapter 8>
```

Ln 7, Col 44 Spaces: 4 UTF-8 CRLF Java JavaSE-15 7:47 PM

SalesPerson.java

The screenshot shows the Visual Studio Code editor interface. The Explorer panel on the left displays a project structure with a 'CHAPTER 8' folder containing several Java files, including 'SalesPerson.java'. The main editor window shows the code for 'SalesPerson.java', which defines a 'SalesPerson' class with attributes 'Id' and 'AnnualSales', and methods 'SalesPerson()', 'SalesPerson(int id, double annualseales)', 'GetId()', and 'GetAnnualSales()'. The bottom panel shows the 'TERMINAL' output, which displays a list of sales amounts from \$25,000.0 to \$70,000.0. The status bar at the bottom indicates the current line and column (Ln 15, Col 2) and the file encoding (UTF-8, CRLF).

```
package Activity6;

public class SalesPerson {
    int Id;
    double AnnualSales;

    SalesPerson(){

    }

    SalesPerson(int id, double annualseales){
        this.Id = id;
        this.AnnualSales = annualseales;
    }

    public int GetId(){
        return this.Id;
    }

    public double GetAnnualSales(){
```

4: Java Debug Console

SalesPerson2'

111 - \$25000.0

112 - \$30000.0

113 - \$35000.0

114 - \$40000.0

115 - \$45000.0

116 - \$50000.0

117 - \$55000.0

118 - \$60000.0

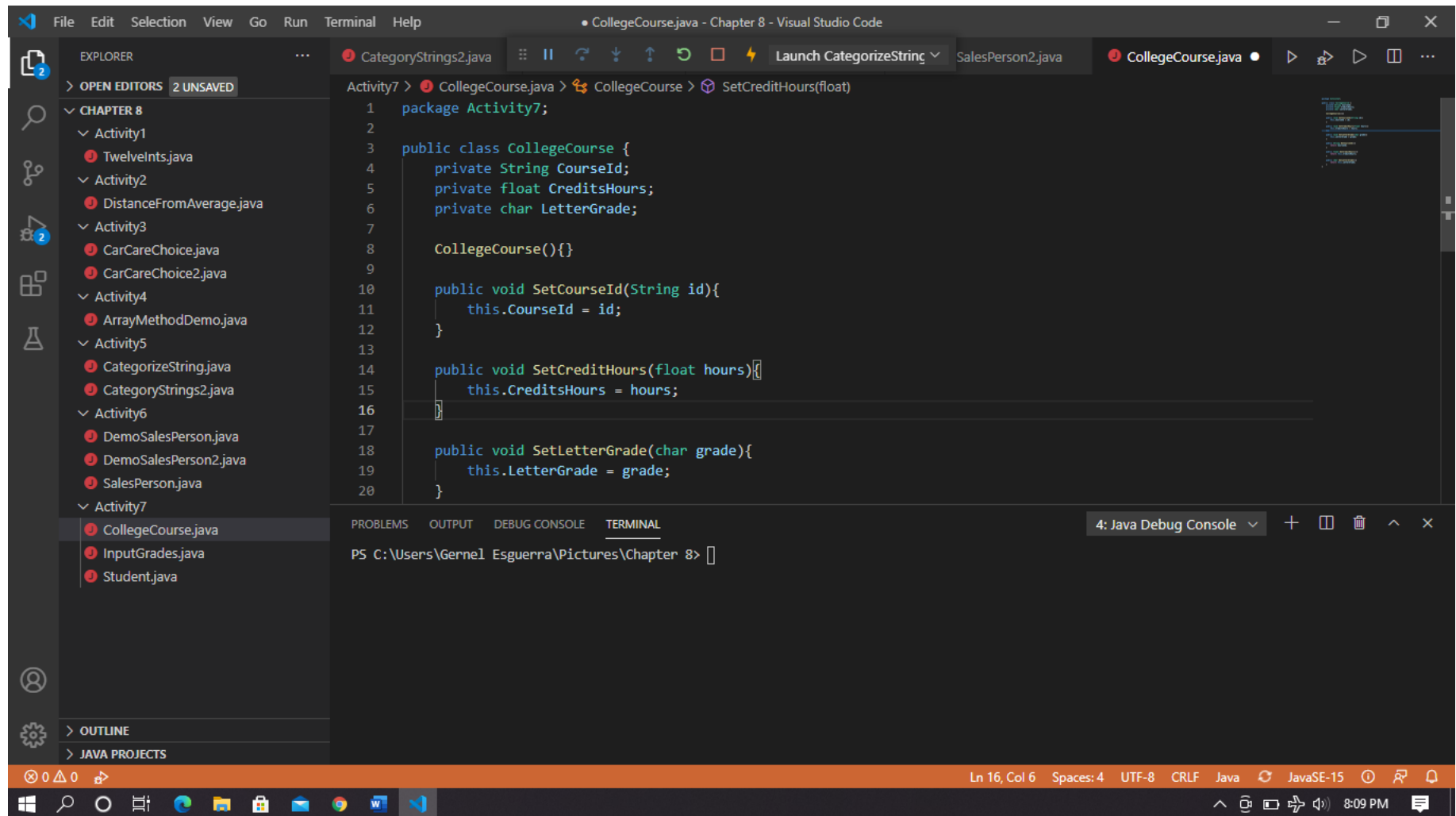
119 - \$65000.0

120 - \$70000.0

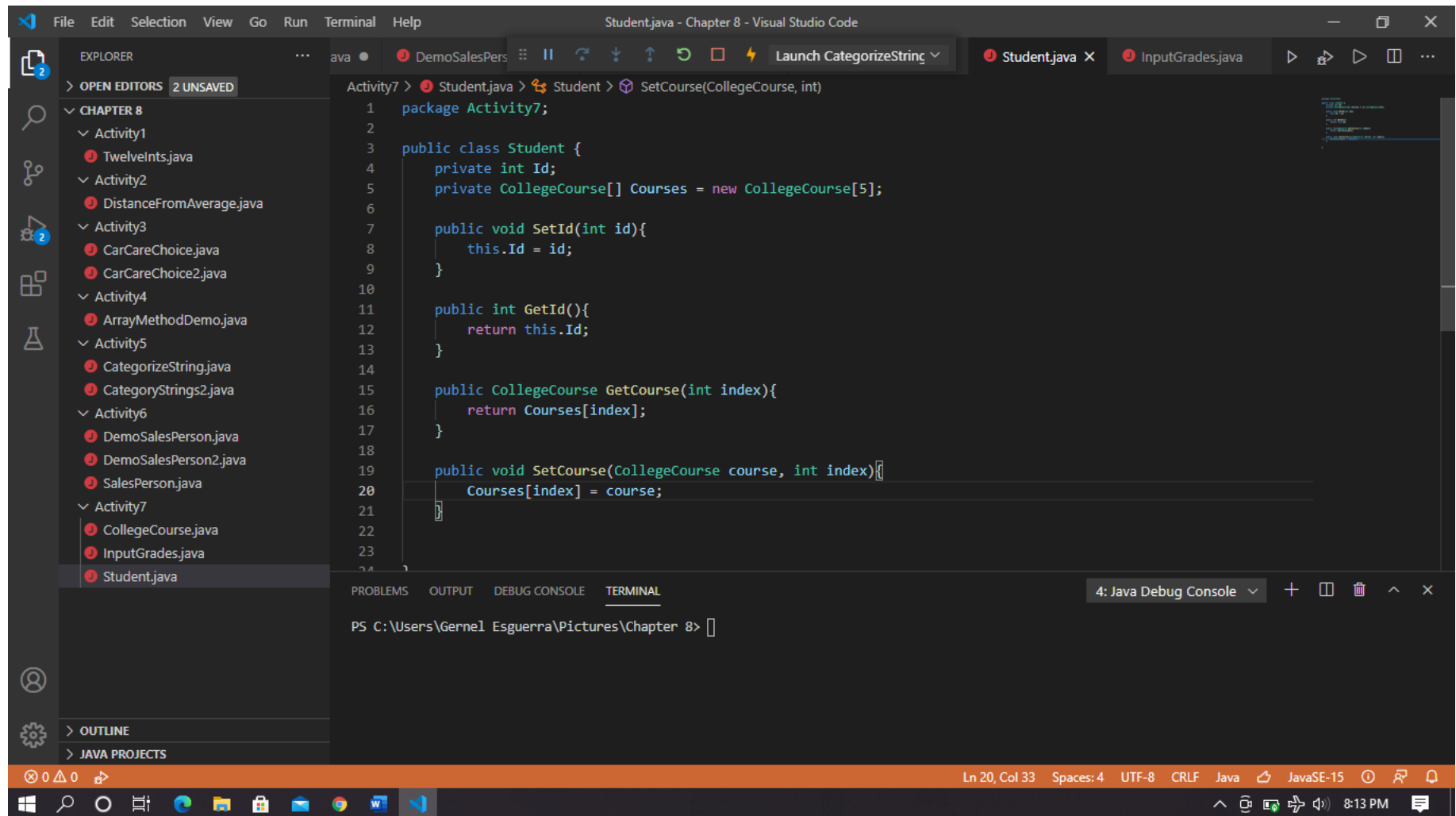
PS C:\Users\Gernel Esguerra\Pictures\Chapter 8>

Ln 15, Col 2 Spaces: 4 UTF-8 CRLF Java JavaSE-15 7:49 PM

7. Chapter 8 – CollegeCourse.java



Student.java



InputGrades.java

The screenshot displays the Visual Studio Code interface with the `InputGrades.java` file open. The Explorer sidebar on the left shows a project structure with 'CHAPTER 8' containing various activities. The main editor shows the code for `InputGrades.java`, which includes a `main` method that initializes a `Scanner`, declares variables for `id`, `courseId`, `credHours`, `grade`, and an array of `Student` objects. It then enters a loop to prompt for student entries, including course ID, student ID, credit hours, and grade.

```
4 import java.util.Scanner;
5 public class InputGrades {
6     public static void main(String[] args) {
7         var sc = new Scanner(System.in);
8         int id = 0;
9         String courseId;
10        float credHours;
11        char grade = 'E';
12        Student[] students = new Student[10];
13        CollegeCourse course = new CollegeCourse();
14        for(int i = 0; i < 10; i++){
15            System.out.println(String.format("Student Entry No: %d", i+1));
16            System.out.print("Student ID: ");
17            id = sc.nextInt();
18
19            students[i] = new Student();
20            students[i].SetId(id);
21            sc.nextLine();
22            System.out.println();
23
24            for(int j = 0; j < 5; j++){
25                System.out.print(String.format("Student Course # %d ID: ", j+1));
```

The bottom panel shows the 'TERMINAL' output, which displays the results of the program's execution, including student course information and prompts for entry.

```
Student Course #5 ID: 5849
Student Credit Hour(s): 58.6
Student Grade: D

Student Entry No: 2
Student ID: 2535

Student Course #1 ID: 
```