2.

1. Write the program to read the content of one.txt file and write the content to the two.text file using BufferInputStream and BufferOutputStream.

```
import java.io.BufferedInputStream;
                                                                                                                                                         [nathan@archlinux Java]$ ls
-
                 import java.io.BufferedOutputStream;
import java.io.FileInputStream;
                                                                                                                                                         Main.class Main.java one.txt two.txt
[nathan@archlinux Java]$ cat one.txt
                                                                                                                                                        This Is Some Random Text
[nathan@archlinux Java]$
                 import java.io.FileOutputStream;
                      public static void main(String[] args) {
                            try {
    BufferedInputStream in = new BufferedInputStream(new FileInputStream("one.txt"));
    BufferedOutputStream out = new BufferedOutputStream(new FileOutputStream("two."));
                 txt"));
                                  int byteData;
                                  while ((byteData = in.read()) != -1){
   out.write(byteData);
                                  in.close();
                            out.close();
} catch (Exception ex){
    System.out.println(ex);
                                                                                                                                                         [nathan@archlinux Java]$ cat two.txt
                                                                                                                                                         This Is Some Random Text
                                                                                                                                                          [nathan@archlinux Java]$
                                                                                                                              java 1:1 Top
         NORMAL Main.java
         [0] 0:bash* 1:nvim-
```

3. Rewrite the program from Question no 5 using BufferReader and BufferWriter.

```
import java.io.FileReader;
                                                                                                                                                       [nathan@archlinux Java]$ ls
11 import java.io.FileWriter;
10 import java.io.BufferedReader;
                                                                                                                                                       Main.class Main.java one.txt
[nathan@archlinux Java]$ ls
                                                                                                                                                       Main.class Main.java one.txt two.txt
[nathan@archlinux Java]$ cat one.txt
                 import java.io.BufferedWriter;
                 public class Main {
   public static void main(String[] args) {
                                                                                                                                                       This Is Some Random Text
[nathan@archlinux Java]$
                            try {
    BufferedReader in = new BufferedReader(new FileReader("one.txt"));
                                 BufferedWriter out = new BufferedWriter(new FileWriter("two.txt"));
int charData;
while ((charData = in.read()) != -1){
                                      out.write(charData);
                                  in.close();
                                 out.close();
                           } catch (Exception ex){
   System.out.println(ex);
                                                                                                                                                        [nathan@archlinux Java]$ cat two.txt
                                                                                                                                                        This Is Some Random Text
                                                                                                                                                        [nathan@archlinux Java]$
         NORMAL Main.java
"Main.java" 22L, 618B written
                                                                                                                            java 13:34 <mark>59%</mark>
```

- 4. You have the text file with the given number range from 1 to 10. Each number is separated by space in between. Write the program to read the number from the text file then write the odd number into odd.txt file and even number into even.txt file. The program should have the following methods.
 - a. public List<Integer> read(String filePath);
 - b. public List<Integer> getEven(List<Integer> numbers);

- c. public List<Integer> getOdd(List<Integer> numbers);
- d. public void write(List<Integer> numbers, String filePath);

```
[nathan@archlinux Java]$ grep -H "" input.txt even.txt odd.txt input.txt:1 2 3 4 5 6 7 8 9 10
              31 import java.io.FileReader;
30 import java.io.FileWriter;
\blacksquare
              29 import java.io.BufferedReader;
28 import java.io.BufferedWriter;
                                                                                                                                                                              even.txt:2
even.txt:4
              27 import java.io.IOException;
                                                                                                                                                                              even.txt:6
                                                                                                                                                                              even.txt:8
                 public class Main {
   public static void main(String[] args) {
                                                                                                                                                                              odd.txt:1
odd.txt:3
                              try (

BufferedReader in = new BufferedReader(new FileReader("input.txt"));

BufferedWriter odd = new BufferedWriter(new FileWriter("odd.txt"));

BufferedWriter even = new BufferedWriter(new FileWriter("even.txt"))

// Try-With-Resource syntax apparantly, resources are written in the try, and are
                                                                                                                                                                              odd.txt:5
odd.txt:7
                                                                                                                                                                               odd.txt:9
[nathan@archlinux Java]$ y
                 } catch (Exception e) {
   System.out.println(e);
                              } catch (Exception ex) {
    System.out.println("error " + ex);
        NORMAL Main.java
                                                                                                                                                java 32:46 88%
        [0] 0:bash* 1:bash-
```

5. Write a program that reads a text file and counts the number of words in it. Display the total count at the end.

```
import java.io.BufferedReader;
-
                                                                                                                                 [nathan@archlinux Java]$ javac Main.java && java Main
           14 import java.io.FileReader;
13 import java.io.IOException;
                                                                                                                                 Word count: 10
[nathan@archlinux Java]$ cat input.txt
                                                                                                                                 1 2 3 4 5 6 7 8 9 10
[nathan@archlinux Java]$
            11 public class Main {
                   public static void main(String[] args) {
                       int wordCount = 0; try (BufferedReader br = new BufferedReader(new FileReader("input.txt"))) {
                             String line;
while ((line = br.readLine()) != null) {
                                  wordCount += line.split("\\s+").length; // regex split based of one or more
                       } catch (Exception e) {
   System.out.println(e);
                         System.out.println("Word count: " + wordCount);
                                                                                                          java 16:26 84%
        NORMAL Main.java
        [0] 0:bash* 1:bash-
```

- 6. Write a program to take the student information from the user and write the content to the csv file. The student class should have the following attributes.
 - a. firstName, lastName, address, contactNumber, semester

- 7. You have a text file which contains the information about the Electronic and Computing product separated by ; (semicolon). The text file has the following attributes.
 - a. product(String), price(Double)

Write a program to read the content from the text file, find the average sales of the product and export it to the csv file.

Make sure you have the multiple products in the text file. For example

product; price
Laptop; 40,000.0
SmartPhone; 50,000.0
SmartPhone; 60,000.0
Laptop; 80,000

```
Map<String, ProductData> productDataMap = new HashMap<>();
try (BufferedReader br = new BufferedReader(new FileReader("input.txt"))) {
   String line;
                                                                                                                                                                                                                                                                                            [nathan@archlinux Java]$ cat prices.csv
#
                                                                                                                                                                                                                                                                                            Laptop,66666.67
[nathan@archlinux Java]$
                                    // Skip header line
br.readLine();
                                    while ((line = br.readLine()) != null) {
    line = line.trim();
    if (line.isEmpty()) {
                                                 continue:
                                          }
String[] parts = line.split(";");
if (parts.length == 2) {
   String productName = parts[0].trim();
   double price = Double.parseDouble(parts[1].trim().replace(",", "")); // remove the commas from the input eg, 40,000
                                                ProductData data = productDataMap.getOrDefault(productName, new ProductData()); // if found return product data, else get an empty data struct. data.totalPrice += price;
                                                data.count++;
productDataMap.put(productName, data);
                                    System.out.println["Error : " + e];
                                     fw.write("Product,AveragePrice\n");
for (Map.Entry<String, ProductData> entry : productDataMap.entrySet()) {
   String productName = entry.getKey();
                                          ProductData data = entry.getValue();
double averagePrice = data.totalPrice / data.count;
                                          fw.write(String.format("%s,%.2f\n", productName, averagePrice));
                              } catch (Exception e) {
   System.out.println("Error" + e);
                        static class ProductData {
                              double totalPrice = 0.0;
int count = 0;
          NORMAL Main.java
                                                                                                                                                                                                                                                               java 33:46 <mark>61%</mark>
          [0] 0:bash* 1:bash-
```

8. With the reference of Question 5. Read the content from the csv file and export it to the text file. Here, the name of the text file should be the name of the header in the csv file and the content of the text file should be the value in the header.

For Example:-

CSV File

FIRST_NAME, LAST_NAME, ADDRESS, CONTACT_NUMBER, SEMESTER

John, Doe, 123 Main St, Anytown USA, 555-1234, Fall 2023

Jane, Smith, 456 Oak Rd, Somecity NY, 555-5678, Spring 2024

Michael, Johnson, 789 Elm Blvd, Othertown CA, 555-9012, Summer 2023

Emily, Williams, 321 Maple Ave, Somewhere FL, 555-3456, Fall 2024

David, Brown, 654 Pine St, Anycity TX, 555-7890, Spring 2023

FIRST_NAME.txt file

John

Jane

Michael

Emily

David

LAST_NAME.txt file

Doe

Smith

Johnson

Williams

Brown

and so on.

Note: Make sure to create your own text file and content.

```
15 import java.io.BufferedReader
14 import java.io.FileReader;
                                                                                                                                                                                                                             [nathan@archlinux Java]$ ls
'ADDRESS.txt' 'CONTACT_NUMBER.txt' FIRST_NAME.txt input.csv 'LAST_NAME.txt' Main.class Main.java
[nathan@archlinux Java]$ grep -H "" *.txt
\blacksquare
                   3 import java.io.FileWriter
                      import java.util.HashMap
import java.util.Map;
                                                                                                                                                                                                                               ADDRESS.txt:123 Main St
ADDRESS.txt:456 Oak Rd
                                                                                                                                                                                                                               ADDRESS.txt:789 Elm Blvd
ADDRESS.txt:321 Maple Ave
                              public static void main(String[] args) {
                                                                                                                                                                                                                               ADDRESS.txt:654 Pine St
                                                                                                                                                                                                                              ADDRESS.TXT:SS4 PINE ST
CONTACT_NUMBER.TXT: Anytown USA
CONTACT_NUMBER.TXT: Somecity NY
CONTACT_NUMBER.TXT: Othertown CA
CONTACT_NUMBER.TXT: Somewhere FL
                                             BufferedReader in = new BufferedReader( new FileReader("input.csv"));
                                            String[] headers = in.readLine().trim().split(",");
                                           Stringl | Readers = Intreductive() := null){
String[] parts = line.trim().split(",");
for(int i = 0; i < headers.length -1; i++){
   FileWriter out = new FileWriter(headers[i]+".txt",true);
   out.write(parts[i]+"\n");
   out close().</pre>
                                                                                                                                                                                                                             CONTACT_NUMBER.txt: Anycity TX
FIRST_NAME.txt:John
                                                                                                                                                                                                                             FIRST_NAME.txt:Jane
FIRST_NAME.txt:Michael
FIRST_NAME.txt:Emily
                                                                                                                                                                                                                              FIRST_NAME.txt:David
LAST_NAME.txt:Doe
                                                                                                                                                                                                                              LAST_NAME.txt:Smith
LAST_NAME.txt:Johnso
                                                                                                                                                                                                                              LAST_NAME.txt:Williams
LAST_NAME.txt:Brown
[nathan@archlinux Java]$
                                            System.out.println(e)
           NORMAL Main.java
                                                                                                                                                                                          java 16:53 55%
```