



NEW YORK CITY COLLEGE OF TECHNOLOGY THE CITY UNIVERSITY OF NEW YORK
Department of Computer Engineering Technology 300 Jay Street, Brooklyn, NY 11201-1909

LAB REPORT

CET 3640 – OL30

**(SOFTWARE FOR COMPUTER
CONTROL)**

**FINAL PART 2
JAVA PROGRAMS 1 & 2**

Name: Puja Roy

Date: 5/21/22

Due Date: 5/21/22

DESCRIPTION OF PROGRAM ONE:

For program#1 of the final, I wrote a Java program in Eclipse that assigns various classes including CruiseShip, Ship and CargoShip objects to the array elements. Then, the program scans the information through the array and calls each object toString method. I also wrote loops in the TestShips file for the loop to run through the array and print the objects information of the ships.

```
1 //NAME: Pujja Roy
2 //DATE: 5/21/22
3
4 public class TestShips
5 {
6 {
7
8 /** Driver method to create objects of all three ships
9
10 * and print their details
11
12 */
13
14 public static void main(String[] args)
15 {
16 {
17
18 /** Create an array of type Ship, to hold Ship objects */
19
20 Ship ShipArray[] = new Ship[3];
21
22 /** Create an object of super class Ship */
23
24 Ship ship1 = new Ship("Lolipop","1960");
25
26 /** Create an object of subclass CruiseShip and assign the object
27 to Ship reference variable */
28
29
```

Console ×

<terminated> TestShips [Java Application] C:\Users\pujar\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.fu

Ship@3d012ddd

CruiseShip
Name: null
Passenger Capacity: 2400 persons

CargoShip
Name: null
Cargo Capacity: 50000 tons

```
1 //NAME: Puja Roy
2 //DATE: 5/21/22
3
4 // Ship class
5
6 public class Ship
7 {
8 {
9
10 // private member variables
11
12 /** Constructor */
13
14 public Ship(String nam, String year)
15 {
16 {
17
18 }
19
20
21 /** Setter methods */
22
23 public void setName(String nam)//setter method for name
24 {
25 {
26
27 }
28
29
```

Console ×

<terminated> TestShips [Java Application] C:\Users\pujar\p2\pool\plugins\org.eclipse.justj
Ship@3d012ddd

CruiseShip

Name: null

Passenger Capacity: 2400 persons

CargoShip

Name: null

Cargo Capacity: 50000 tons

```

1 //NAME: Pujar Roy
2 //DATE: 5/21/22
3 /** Definition of subclass CargoShip from superclass Ship */
4
5 public class CargoShip extends Ship
6
7 {
8
9 /** private member variable */
10
11 private int tonnage;
12
13 /** Constructor */
14
15 public CargoShip(String nam, String year, int weight)
16
17 {
18
19 /** super() keyword is used to call the constructor of
20
21 * the superclass before initializing the member variables of
22
23 * subclass
24
25 */
26
27 super(nam,year);
28
29 tonnage = weight;

```

Console ×

<terminated> TestShips [Java Application] C:\Users\pujar\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full\jre\bin\java.exe
 Ship@3d012ddd

CruiseShip
 Name: null
 Passenger Capacity: 2400 persons

CargoShip
 Name: null
 Cargo Capacity: 50000 tons

```

1 //NAME: Pujia Roy
2 //DATE: 5/21/22
3
4 /** Definition of subclass CruiseShip from superclass Ship */
5
6 public class CruiseShip extends Ship
7
8 {
9
10 /** private member variable */
11
12 private int passengerCapacity;
13
14 /** Constructor */
15
16 public CruiseShip(String nam, String year, int capacity)
17
18 {
19
20 /** super() keyword is used to call the constructor of
21
22 * the superclass before initializing the member variables of
23
24 * subclass
25
26 */
27
28 super(nam,year);
29

```

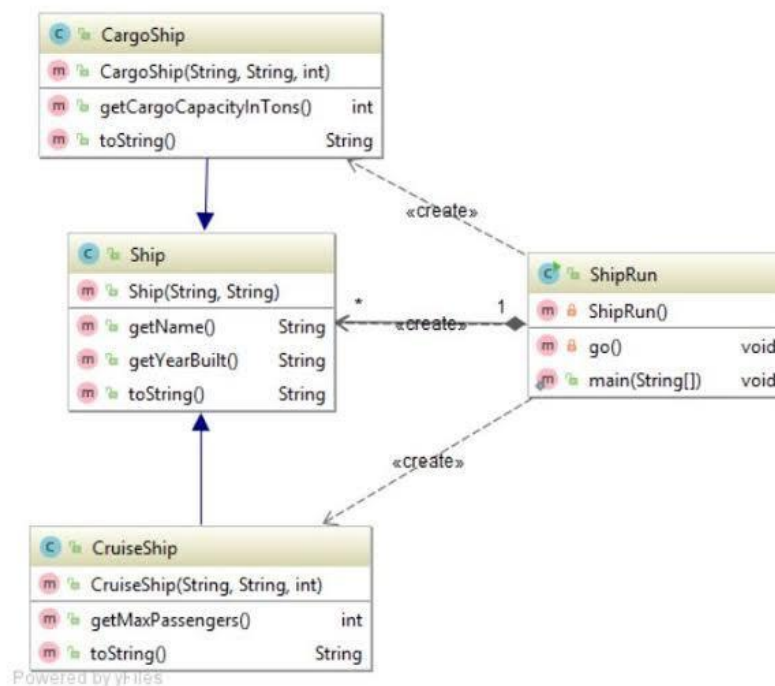
Console ×

<terminated> TestShips [Java Application] C:\Users\pujar\p2\pool\plugins\org.eclipse.justj.openjdk.hotsp
Ship@3d012ddd

CruiseShip
Name: null
Passenger Capacity: 2400 persons

CargoShip
Name: null
Cargo Capacity: 50000 tons

UML Diagram:



DESCRIPTION OF PROGRAM TWO:

For program#2 of the final, I wrote a Java program in Eclipse that reads the gas prices of a text file in the Java program. I created a class called GasPrice and wrote a program that includes java methods that read the data from the text file and stores it into an arraylist. Then, the program iterates through the list and calculates the lowest and highest average prices each month. The program also allows the user to input which month they want the average of gas prices.

```
1 //NAME: Puja Roy
2 //DATE: 5/21/22
3
4 import java.util.*;
5 import java.io.*;
6
7 public class GasPrice {
8
9     // This method will be used to read the data from the file and store it in an arraylist
10    public void readData(String fileName, ArrayList<Double> list) {
11        File file = new File(fileName);
12        try {
13            Scanner sc = new Scanner(file);
14            while (sc.hasNextLine()) {
15                String s = sc.nextLine();
16                list.add(Double.parseDouble(s));
17            }
18        } catch (FileNotFoundException ex) {
19            ex.printStackTrace();
20        }
21    }
22
23 }
```

Console ×

GasPrice [Java Application] C:\Users\pujar.p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.1.v20211116-1657\jre\bin\

The lowest average price was 0.992 in week 1. The month was January
The highest average price was 1.165 in week 34. The month was August
For which month do you want the average price?
May
The average Gas Price in the month of May is 1.0524
For which month do you want the average price?
December
The average Gas Price in the month of December is 1.13
For which month do you want the average price?
February
The average Gas Price in the month of February is 1.009
For which month do you want the average price?
June
The average Gas Price in the month of June is 1.0859999999999999
For which month do you want the average price?