CS-224 Object Oriented Programming and Design Methodologies

Assignment 03

June 12, 2018

1 Guidelines

You need to submit this assignment on 19th of June at 12 pm (Noon) as the next assignment will be given on the same day. Some important guidelines about the assignment are as following:

- You need to do all the assignments alone
- If a TA has not been assigned to you, get one assigned
- You will submit your assignment to the TA
- You can ask the TA for help, but not for solution. They will guide you towards the answer but not give you the answer.
- You need to follow the best programming practices as given in the accompanying document. Failure in doing so will have your marks deducted
- Submit assignment on time; late submissions will not be accepted
- Some assignments will require you to submit multiple files. Always Zip and send them
- It is better to submit incomplete assignment than none at all.
- It is better to submit the work that you have done yourself than what you have plagiarized.
- It is strongly advised that you start working on the assignment the day you get it. Assignments WILL take time.

- Every assignment you submit should be a single zipped file containing all the other files. Suppose your name is John Doe and your id is 0022 so the name of the submitted file should be JohnDoe0022.zip
- DO NOT send your assignment to your instructor, if you do I will just mark your assignment as ZERO for not following clear instructions.
- You can be called in for Viva for any assignment that you submit

2 Task

For this exercise, you will be creating a package delivery system. You need to think in terms of objects. The first object is the delivery truck that can store 50 liters of petrol. The cost per liter of petrol is 2.73$. You will be using the sample file, Drivers.txt for this assignment. Your code should however take into account that if an entry is increased or reduced (5 lines per entry) it reads all the entries in the file. For example, if there is just one entry, it should give the following lines as output:

- Elton John
- 34
- 218
- 9
- 7

Based on this entry, the drivers name is Elton John, his truck has 34 liters already, his total funds are 218$. His truck covers 9 km per liter if empty and 7 km per liter when loaded. The trucks can carry 12 to 20 packages with random dimensions. The length, width and height of every package can range from 5 to 30 inches. This means that you will need to declare a dynamic array of boxes for each truck and every box will have a different dimension.
Calculate the total cost it will take the loaded truck to travel 60 km, drop the cargo and return empty based on the fuel consumption when the tank was full. This means that the drivers need to fill the tank first before making the journey. Based on the amount of money they have, calculate if everyone can do the journey. This means that you will need to declare a dynamic array of Trucks as well. When unloading the boxes show the volume of all the boxes and then deallocate the array of boxes. Once the trucks return, deallocate the array of all trucks after calculating the cost for the trip.