DATA STRUCTURE

Type	Basic OOP	**LAB PERFORMENCE**
Deadline	**IN CLASS**	
Weighting	TBA	**2**

OBJECTIVES

This assessment item is designed to test your skills on basic OOP (struct, class, object, encapsulation, memory allocation and layout etc.)

ASSESSMENT TASK

1. Declare and define a structure called "Product" with following properties given in the table:

Fields	**Data types**
ID	int
Name	char[32]
UnitPrice	float
Quantity	int
Status	bool

   (a) Declare three objects of Product structure
   (b) Set some data on the objects
   (c) Print all the objects detail

2. Declare and define a structure called "Person" with following properties given in the table:

Fields	**Data types**
ID	int
Name	char[32]
Age	int
Status	bool

   (a) Declare an objects of Person structure
   (b) Set some data on the objects
   (c) Print the object

3. Follow the following instructions:

   (a) Define a structure called **Customer** with id, name, and email as its attributes.
   (b) Define another one called **Product** with id, name, unitPrice, and quantity as its attributes.
   (c) Now define a structure called **Order** with id (int), customer (Customer), product (Product).
   (d) Declare an **Order** object and perform set and get operation.

4. Declare and Define a Class called "**Person**" with following properties given in the table:

Fields	**Data types**
id	int
name	char[32]
age	int
status	bool

(a) Add a function to the class to **set** some data on the objects
(b) Add a function to the class to **print** all the object's detail
(c) Provide appropriate **Encapsulation** to the class
(d) Declare some objects of **Person** Class **dynamically**
(e) Perform some set and get operations with the objects
(f) Finally de-allocate all the memory occupied by your program

5. Declare and Define a Class called "CellPhone" with following properties given in the table:

FIELDS	DATA TYPES	SAMPLE DATA
brand	Character array	Samsung/ iPhone etc.
familyName	Character array	Galaxy / Galaxy Core etc.
modelNo	Character array	J1 / S4 / 5S etc.
keyboardType	Boolean (Type / Touch)	0 / 1
simType	Boolean (Mini / Micro)	0 / 1
battery	Integer (in mAh)	1850 / 2100 / 3000 etc.
isAvailable	Boolean	0 / 1

(a) Add a function to the class to **set** some data on the objects
(b) Add a function to the class to **print** all the object's detail
(c) Add a destructor to the class
(d) Provide appropriate **Encapsulation** to the class
(e) Declare some objects of **CellPhone** Class **dynamically**
(f) Perform some set and get operations with the objects
(g) Finally de-allocate all the memory occupied by your program

WHAT & HOW TO SUBMIT

You need to upload through your **VUES** account. You can find the upload link under "*Courses/ DATA STRUCTURE/Lab Performance/"*

SUBMISSION STEPS:

1. Create a Directory/Folder as following format:

   <Your ID>_PERFORMENCE-< Performence Number>

   Ex: 14-10380-1_PERFORMENCE-1
2. If you update your code then the format should be following:

   <Your ID>_PERFORMENCE-< Performence Number>_UPDATE-<Update Number>

   Ex: 14-10380-1_PERFORMENCE-1_UPDATE-1
3. Put all the files into that Folder and upload the **zipped** format of that Folder

NOTES

- Your submission will be rejected if uploaded in wrong format
- Only ".zip" file will be accepted.