CCT College Dublin Continuous Assessment

Programme Title:	*BSc in Computing Y3*		
Cohort:	*Y3 Sept 2019*		
Module Title(s):	*OODP*		
Assignment Type:	*Individual*	**Weighting(s)**:	*30%*
Assignment Title:	*OODP_Lcl7_CA2_v2*		
Lecturer(s):	*David McQuaid*		
Issue Date:	*29th March 2022*		
Submission Deadline Date:	*22nd April 2022*		
Late Submission Penalty:	Late submissions will be accepted up to **5** calendar days after the deadline. All late submissions are subject to a penalty of **10%** of the mark awarded. Submissions received more than 5 calendar days after the deadline above **will not** be accepted and a mark of 0% will be awarded.		
Method of Submission:	**Moodle**		
Instructions for Submission:	*Assessment must be submitted before 11.55pm 22nd April 2022 as a NetBeans project (JDK 8) and Word Document* ● *The zipped NetBeans 12.x project (JDK 8) Must be saved as "YourName_OODP_CA2.zip"* ● *Word Document detailing rationale "YourName_OODP_CA2.docx"*		
Feedback Method:	**Results released on Moodle**		
Feedback Date:	*2 weeks after final submission Inc PMC*		

Learning Outcomes:
Please note this is not the assessment task. The task to be completed is detailed on the next page.
This CA will assess student attainment of the following minimum intended learning outcomes:

1. Assess application design requirements and improve existing application designs by applying a custom implementation of object orientated design patterns (Linked to PLO 5)
2. Determine which design pattern should be used and how design patterns can be tailored for custom use (Linked to PLO 4)
3. Understand how design patterns are used in industry code to aid the design process on larger projects (Linked to PLO 2)

Attainment of the learning outcomes is the minimum requirement to achieve a Pass mark (40%). Higher marks are awarded where there is evidence of achievement beyond this, in accordance with QQI *Assessment and Standards, Revised 2013*, and summarised in the following table:

Percentage Range	**CCT Performance Description**	**QQI Description of Attainment**
		Level 6, 7 & 8 awards
90% +	Exceptional	Achievement includes that required for a Pass and in **most** respects is significantly and consistently beyond this
80 – 89%	Outstanding	
70 – 79%	Excellent	
60 – 69%	Very Good	Achievement includes that required for a Pass and in **many** respects is significantly beyond this
50 – 59%	Good	Achievement includes that required for a Pass and in **some** respects is significantly beyond this
40 – 49%	Acceptable	Attains all the minimum intended programme learning outcomes
35 – 39%	Fail	Nearly (but not quite) attains the relevant minimum intended learning outcomes
0 – 34%	Fail	Does not attain some or all of the minimum intended learning outcomes

Assessment Task
Students are advised to review and adhere to the submission requirements documented after the assessment task.

Assignment Introduction

You have been asked to design and implement a program that simulates sales of products between three companies.

- BIG-Alpha produces: widgets
- BIG-Beta produces : braces
- BIG-Cappa produces: crates

Each of the companies produces one product and must trade with the other two to buy products. Company BIG-Alpha is a supplier of widgets and buys braces 's and crates, while company BIG-Beta is a supplier of braces and buys widgets and crates, and company BIG-Cappa is a supplier of crates and buys widgets and braces.

Each company has 40 depots, each containing a varying number of native products and external products. The minimum stock of native products for each depot is 15, and the maximum stock is 40. The same way, each depot can hold a minimum of 2 and a maximum of 30 of the external product.

Specific requirements

You are required to implement the following program specification.

To do this, you must implement/customise **at least TWO Object Oriented Design Patterns**. You also must use best practice in Object Oriented software development and demonstrate knowledge of Object-Oriented programming principles.

When the program starts running the simulation should start, adhering to the following rules: [0-40]

- Companies and depots most be created in memory with random values of allowance, stock (native and external produce) and prices (products and delivery).
- Each depot must have its own product price and delivery price. These should be random numbers between 1 and 10
- Every depot has a random initial cash allowance between 50 and 100
- Each depot from one company should try to trade with all depots from the other companies
- A depot cannot go below its minimum stock of its native product
- A depot cannot store above its maximum stock of its native product
- A depot cannot go below its minimum stock of its purchase products
- A depot cannot store above its maximum stock of its purchase products

Once the simulation is complete the user should be presented with a menu that allows them to see detailed information about the whole trading simulation: [0-20]

- See all transactions
- See all transactions for a particular company
- For a given company, detailed information about each of the depots:
  - Own product stock
  - Foreign products stock
  - Cash balance

All this information must also be saved to a text file so it can be retrieved from the file system at a later stage. [0-10]

Along with your source code, you must also produce a one-page document that includes: [0-20]

- Justification of the design patterns used.

All code to be commented [0-10]

Total [40 + 20 + 10 + 20 +10] = 100

Notes

- Try to keep it simple. Planning your program before start coding is part of your assessment.
- Comment your code!!
- Plagiarism will not be tolerated. All work must be your own. If you used some snippet of code from an external source, make sure that you reference it correctly inside your code.
- In any situation, the lecturer is entitled to call you in for further explanation of your code.
- **Your code must run as no debugging will be done.**
- **You Must use JDK 8 and NETBEANS 12.x**

Submission Requirements

All assessment submissions must meet the minimum requirements listed below. Failure to do so may have implications for the mark awarded.
All assessment submissions must:

- Be submitted before **11.55pm** *22nd April 2022 as a Zipped NetBeans project (JDK 8) and Word Document*
- Word Document with report detailing rationale, including visualisations "YourName_OODP_CA2.docx"
- Be submitted by the deadline date specified or be subject to late submission penalties
- Be submitted via Moodle upload
- Use Harvard Referencing when citing third party material
- Be the student's own work.
- Include the CCT assessment cover page.

Additional Information

- Lecturers are not required to review draft assessment submissions.
- In accordance with CCT policy, feedback to learners may be provided in written, audio or video format and can be provided as individual learner feedback, small group feedback or whole class feedback.
- Results and feedback will only be issued when assessments have been marked and moderated / reviewed by a second examiner.
- Additional feedback may be requested by contacting the Lecturer, Additional feedback may be provided as individual, small group or whole class feedback. Lecturers are not obliged to respond to email requests for additional feedback where this is not the specified process or to respond to further requests for feedback following the additional feedback.
- Following receipt of feedback, where a student believes there has been an error in the marks or feedback received, they should avail of the recheck and review process and should not attempt to get a revised mark / feedback by directly approaching the lecturer. Lecturers are not authorised to amend published marks outside of the recheck and review process or the Board of Examiners process.
- Students are advised that disagreement with an academic judgement is not grounds for review.
- For additional support with academic writing and referencing students are advised to contact the CCT Library Service or access the CCT Learning Space.
- For additional support with subject matter content students are advised to contact the CCT Student Mentoring Academy
- For additional support with IT subject content, students are advised to access the CCT Support Hub.