![University of Central Lancashire UCLan logo]	**UCLan Coursework Assessment Brief**		2021-2022
School of Psychology and Computer Science	Module Title: Programming		
	Module Code: CO1404 (CO1409)		Level 4
	UCLan Pizza Ordering Application	This assessment is worth **50%** of the overall module mark	

ASSESSMENT BRIEF

About

This is an Individual coursework project, and no group work is permitted. You must implement your solution in Visual Studio using the C++ programming language. You will be assessed via a piece of coursework consisting of two components:

- The **Implementation** aspect will constitute up-to **60%** of your mark.
- The **Report** aspect will constitute up-to **40%** of your marks.

Learning Outcomes

This assessment has been designed to assess the following learning outcomes:

- Develop a structured solution to a simple problem.
- Explain the importance of code readability and maintainability.
- Check the robustness of the code using an appropriate test strategy.

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Implementation (60% Weighting)

You have been tasked with developing a pizza ordering machine for the new Student Centre café. You are required to implement a proof-of-concept console-based pizza ordering application to demonstrate to the café managers.

The pizza ordering application requires the **size** of the pizza to be selected as well as **at least one topping**.
A list of available sizes and toppings is available in the table below.
The **total price** of the pizza is the **size price + the price of all toppings added**.

Pizza Size	Cost (credits)
7 inch	3.0
9 inch	5.50
14 inch	7.25

Toppings	Cost (credits)
Ham	0.80
Mushrooms	0.50
Pepperoni	1.0
Olives	0.30
Pineapple	0.60
Extra Cheese	1.20

Features

As the developer, you have total control regarding the menu, interactions, flow of the application and messages displayed the user. Use the examples included in *Appendix A: Example Outputs* for inspiration. However, you must attempt to implement the logic for following features defined in the table that follows.

Feature	Description
Add Credits	The application will require a user to input a number of credits into the pizza ordering application. The credits will represent the currency.
Order Pizza	The user should be able to select the size of the pizza and **at least one topping.** The application should calculate the total cost of the pizza based on the size and the topping(s) the user has selected.
Checkout	If there are sufficient credits available, the user should be able to then purchase the pizza selected deducting the amount from the available credit and return the remaining credits back to the user. They should then be given the choice to purchase another pizza. If there are insufficient credits available, the user should not be able to purchase the items and will be prompted with a message requesting that additional credits are needed.

Expectations
You are expected to use and implement the programming concepts you have learned throughout this module to complete the implementation aspect of this coursework. You will also be assessed on the readability and appropriate use of programming concepts to implement features of the application defined above. This involves:

- Indenting your code blocks correctly.
- Choosing suitable data types.
- Choosing suitable names for variables
- Choose a suitable name for programming project.
- Appropriate use of programming concepts.
- Appropriate use of comments within your code that describe key or complicated aspects.

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Report (40% Weighting)

To accompany the application, you will also produce a small report using the coursework template provided on Blackboard. The template will provide all the formatting requirements, such as tables. Using the template populate the following sections described in the table below.

	Description
Front Matter	Replace Name and email text on the front page with your own full name and UCLan email address.
Questions & Answers	In your own words, answer the questions included in this section. Take note of the marks associated to each question as this indicates the level of detail required in your answer.
Documentation	In this section of the report, you should produce a user guide document all variables, methods and functions you have implemented into your solution. All documentation should be explicit, meaning descriptions and instructions are clear and unambiguous. You should document the following: • **Variables**: Document the attributes type, name and description. The description should provide details of how it is used in your application. • **Methods**: method-name, description, any parameters (including description) it has, and return-type should be documented. • **User Guide** - The user guide should provide details on how to use your application. You should include screenshots and text to assist the end-user.
Testing	In this section you should include evidence (screen shots and description) of testing your application against the use-case defined in the coursework template.
Reflection	The final aspect of the report you should include a brief self-reflection. It should include details surrounding your programming accomplishments, some of the programming challenges you encountered as well as any improvements you would make to your application. You should conclude this section with establishing some short- and long-term programming goals that you would like to achieve.

Marking Scheme

A summary of the marking criteria for each component is defined below. Full details surrounding the grade boundaries can be found in the University's Assessment Handbook located here. For a detailed breakdown of the individual criteria please see the Marking Scheme on Blackboard.

Implementation (60 Marks)	
C.1 Implementation of Application and Features	20
C.2 Use of Programming Concepts	20
C.3 User Interface and Interaction	10
C.4 Application of Good Coding Practices and Code Quality	10
Report (40 Marks)	
C.5 Questions and Answers	10
C.6 Documentation	15
C.7 Testing	5
C.8 Reflection	10
Total Marks	**100**

PREPARATION FOR THE ASSESSMENT

Before attempting this assessment, it is highly recommended that you revisit the "**Four L's**":

- **Lectures** – This includes the slides, notes and recording.
- **Lecture notes** – Any notes you took during the lectures.
- **Lab worksheets** – Read over all lab worksheets.
- **Lab projects** – Ensure all projects have at least stage one implemented.

Combined these provide all the necessary information for you to successfully complete this assessment. All resources are available on the CO1404 Blackboard area under *Module Materials*.

RELEASE DATES AND HAND IN DEADLINE

Assessment Release date: **06 / 12 / 2021** | Assessment Deadline Date and time: **21 / 01 / 2022 by 23:59:59**

Please note that this is the <u>final</u> time you can submit – not <u>the</u> time to submit!

Your feedback/feed forward and mark for this assessment will be provided on **11 / 02 / 2022**

SUBMISSION DETAILS

Please take your time when reading this section, as this contains specific information on how you should submit your coursework. Where you see <Student-Name> you should replace this with your full name. Please ensure that you follow the submission requirements defined below.

Coursework Constraints

- **You must use C++** and developed your solution using Visual Studio.
- Only use the products and credit values listed in the products table.
- You must use the Report template provided.

File Structure

A zip folder should be named <Student-name>_CO1401_CW_2021.zip and should contain the following files and folders listed below:

- Folder named Implementation containing your project.
- Your Report named <Student-Name>_CO1404_Report.docx.
- A completed Assignment coversheet found on blackboard.

Submission

You must submit your coursework submit a .zip file online through the appropriate link on Blackboard, by the hand in date stated at the beginning of this document. Please ensure you check the contents of your zip folder before uploading!

- **You must use C++ to develop your solution.**

- You should submit your **entire** project folder as a zip folder.

- Ensure your name and Student ID number (located on the back of your UCLan card) is stated at the top of your code.

- **Do not only submit the .sln file as your code will not be included in your submission.**

- You may be asked to demonstrate and explain your submission as part of an interview.

- **Late submissions**: Except where an extension of the hand-in deadline date has been approved, work that is handed in within 5 working days late will receive a maximum mark of 40%. Work handed in later than this will receive 0%.

- **Academic Malpractice**: The consequences of academic malpractice in assessments are serious. This includes plagiarism, collusion and allowing other students to access your work. This will not be tolerated. Details surrounding the coursework regulations can be found in the University's "Assessment Handbook" located here.

Below are tips that you may find useful when working on this assessment:

- Do not leave this assessment to the last minute.
- If you have any questions regarding this coursework, ask the module leader or module tutors.
- Give yourself plenty of time to submit prior to the submission deadline.
- Use pen/cil and paper to work out the flow of your application.

HELP AND SUPPORT

- Support will be provided via Microsoft Teams (CO1404 channel), Email and you will also have the opportunity to ask questions during lectures / labs.
- If you having difficulties with understanding the language used in this assignment brief please refer to the Technical Glossary on Blackboard or speak to the student coach - jhrycak1@uclan.ac.uk
- You will find information links to all our Library resources in the Library area of the Student Hub. For support with using these resources, please contact your subject librarian at SubjectLibrarians@uclan.ac.uk.
- You can get support with your academic skills (academic writing, critical thinking and referencing) through WISER. For details of the WISER support services go to the Study Skills section of the Student Hub.
- If you have not yet made the university aware of any disability, specific learning difficulty, long-term health or mental health condition, please complete a Disclosure Form. The Inclusive Support team will then contact to discuss reasonable adjustments and support relating to any disability. For more information, visit the Inclusive Support page of the Student Hub.
- To access mental health and wellbeing support, please complete our online referral form. Alternatively, you can email wellbeing@uclan.ac.uk, call 01772 893020, attend a drop-in, or visit our UCLan Wellbeing Service pages for more information.
- If you have any other query or require further support you can contact Student Support via studentsupport@uclan.ac.uk. Speak with us for advice on accessing all the University services as well as the Library services. Whatever your query, our expert staff will be able to help and support you. For more information please visit the Student Hub.
- If you have any valid mitigating circumstances that mean you cannot meet an assessment submission deadline and you wish to request an extension, you will need to apply online prior to the deadline.

APPENDICIES

Appendix A – Example Outputs

The examples below represent potential interactions and console outputs between the user and vending machine application:

Main Menu Example

```
-------------------------------
UCLan PIZZA
-------------------------------
MAIN MENU
  1. Add Credits (current credits = 0.00)
  2. Order Pizza
  0. Exit

Please enter a number: 2
```

Order Pizza – Select Size

```
ORDER PIZZA – Select Size    [Current Balance = 10.00 credits]

Please choose from the following options:

  1. 7 inch  [3.0 credits]
  2. 9 inch  [5.50 credits]
  3. 14 inch [7.25 credits]
  0. Return to Main Menu
......................................
Please enter a number : 2
You have selected a 9 inch pizza.
......................................
```

Order Pizza – Select Toppings

```
You have selected a 9 inch pizza.

Please choose from the following toppings:

  1. Ham          [0.80 credits]
  2. Mushrooms    [0.50 credits]
  3. Pepperoni    [1.00 credits]
  4. Olives       [0.30 credits]
  5. Pineapple    [0.60 credits]
  6. Extra Cheese [1.20 credits]
  0. Return to Main Menu
......................................
Please enter a number : 3
You have added pepperoni to your pizza. Your current price is: 6.50 credits.
Would you like to add additional toppings?
Please input 'Y' for yes and 'N' for no : N
......................................
```

Purchase (sufficient credits) Example

```
......................................
Please enter a number : 3
You have added pepperoni to your pizza. Your current price is: 6.50 credits.
Would you like to add additional toppings?
Please input 'Y' for yes and 'N' for no : N
......................................
Available Balance:   10.00 credits
Pizza price:          6.50 credits
----------------------------------------
Your new Balance  = 3.50 credits
----------------------------------------
Would you like to order another pizza?
Please input 'Y' for yes and 'N' for no : N
Thank you, goodbye!
```

Purchase (insufficient credits) Example

```
......................................
Please enter a number : 3
You have added pepperoni to your pizza. Your current price is: 6.50 credits.
Would you like to add additional toppings?
Please input 'Y' for yes and 'N' for no : N
......................................
Available Balance:    0.00 credits
Pizza price:          6.50 credits
----------------------------------------
You have insufficient credits available. You require "6.50" credits.
Would you like to add more credits?
Please enter 'Y' for yes and 'N' for no : Y
......................................
Please enter how many credits you would like to add to your balance: 7.00
----------------------------------------
Your new Balance  = 7.00 credits
Would you like to continue processing your order?
  Please enter 'Y' for yes and 'N' : Y
......................................
Available Balance:    7.00 credits
Pizza price:          6.50 credits
----------------------------------------
Your new Balance  = 0.50 credits
----------------------------------------
Thank you, goodbye!
```