ISBS202- Programming Concepts- AT3 Group Project and Presentation (30%)

Semester 3, 2022

Description: In groups of 3 or 4, you will develop a program design using several methodologies. The project report worth 20 percent is based on addressing issues with a traditional business problem. Your team will design a program based on the business problem and ensure that it is modularised and tested to meet the initial requirements. As part of the assessment your group will have to present your prototype to the class. The presentation will be worth 10 percent of the assessment.

Due date: 11.55pm Friday: Week 11

Business Problem:

A company has hired you to design an inventory management system. You are required to **design** an inventory system, particularly focusing on the following tasks:

• Inventory management system should help in managing the Purchase Order, billing, Stock rise, Sales order, Invoice, Inventory Drops, Stock re-order and report generation to streamline the process. **In here, you should specially focus on Purchase Order, Sales order and relevant warehouse processing in your pseudocode.** In addition to that, your solution should be able to update a list of products available in the warehouse if necessary. The list contains total number of products with following descriptions. Your solution should be able to calculate a list of products available in the warehouse as well. The list contains total number of products with following descriptions.

➢ Products have a product ID, name, barcode, Date of Manufacture, and price

It should also contain the details of the staff who are working in the warehouse as well with the following descriptions.

➢ Employees have an employee ID, name, salary, and department

• The inventory management should keep track of all the products which are being sold online or in-store. If any items sold, then the total number of items in warehouse should decrease accordingly.

• The inventory management system should keep track of total number of products sold per day and total revenue generated per day due to the sales.

• The company also want to identify the product which has high sales volume and most profitable product in the warehouse. The product having high sales might not be the most profitable items in the warehouse.

• The company also wants to keep track of employees versus sale volume record to identify the employees who are very efficient in their work during workhour.
• Regarding the customers, the company wants to see the customers who made the high volume of the purchase and want to award them free vouchers and discounts on purchase.
• To keep records of the customers, Inventory management system has the following details of the customers.

➢Customers have a customer ID, name, age, city and state.

You are required to play the role as a Software Designer, analysing the inventory system and creating a program design particularly focussing on the above tasks.

Task1:

Use Procedural design approach to answer questions in TASK1:

1. Use the top-down design approach to **design** your program to identify how the Inventory system can be divided into different modules by focussing on the tasks mentioned above. Identify the modules and present the modules graphically using a **hierarchy chart** or Structure chart to illustrate the modules and their relationship to each other. [2]

2. Establish the logic of the mainline using pseudocode. [2]

3. Develop the pseudocode for each successive module in the hierarchy chart by focussing on the tasks mentioned above. [3]

4. Desk check the solution algorithm for each module. [3]

Task 2:
Use Procedural design approach to create the prototype of the system. The prototype should be executed in your presentation.

1. In your application, you should show the number of products available in your store. For that you can read the total numbers of product from your file. [2]
2. You should also show the number of employees working in that warehouse. For that you can also read the total numbers of employee from your file. Find the total salary paid to all the employees. [2]
3. You should show the number of product sold and find the total revenue generated. [2]
4. In your application, you should be able to find the oldest customer and youngest customer. [2]

5. In your main program, you should provide the option to perform above mentioned task. If you select option 1, then it will show the number of products available in your store. [2]

Task 3:

For the presentation: [10]

- You will present to the class at an allocated time during the lecture.
- You must submit any slides or graphics at the same time as your report.

Submission requirements:

- For the project report: Use 12 pt. font
- Double-space your document to allow room for feedback
- State your name and student number in the document header
- Your report should Indicate the role of each team member
- State the word count in the document header
- Include a bibliography
- Comply with the APA referencing style
- Complete and submit a peer and self-evaluation form
- Need to submit the code of your developed prototype.

Submission format:

- PDF file (.pdf) or Word (.doc) only for the project report
- PDF file (.pdf) or Word (.doc) only for the peer and self-evaluation form
- PDF file (.pdf) or PowerPoint (.ppt) only for the presentation
- Compressed ZIP folder for the pseudocode

Submission method: Via the Turnitin dropbox on the Course Hub (The original files must be submitted in a compressed ZIP folder and uploaded to the Course Hub for marking). Each student must identify their particular role in the report by which they will be assessed.

Rubric for AT3 Group Project & Presentation

	Fail	Pass	Credit	Distinction	High Distinction

Depth and credibility of research	You have not demonstrated that you have conducted sufficient research (e.g., insufficient references to credible research or peer-reviewed academic literature), and/or you have relied on doubtful sources	You have demonstrated that you have conducted enough research (e.g. based on the number of references to credible research and/or peer-reviewed academic literature), and you have relied on credible sources	The depth and credibility of your research is **above average** (based on the number and quality of your sources)	The depth and credibility of your research is **very good** (based on the number and quality of your sources)	The depth and credibility of your research is **exceptional** (based on the number and quality of your sources)
Understanding of the challenge in terms of theories and concepts studied in this course	You have not adequately understood the challenge in terms of the theories and concepts studied (e.g., because you have used terminology incorrectly or your design/prototype is based on theoretically/conceptually incorrect assumptions, or you have misconceived the issue/problem)	You have understood the challenge in terms of the theories and concepts studied (e.g., because you have correctly used terminology and your design/prototype is based on theoretically/conceptually correct assumptions)	You have understood the challenge in terms of the theories and concepts studied to an **above average** standard	You have understood the challenge in terms of the theories and concepts studied to a **very good** standard	You have understood the challenge in terms of the theories and concepts studied to an **exceptional** standard
Coherence of analysis justifying design/prototype	The rationale for your design/prototype is illogical and/or poorly reasoned (e.g., because it relies on unfounded assumptions or misunderstands the theories and concepts applied)	The rationale for your design/prototype is mostly logical and well-reasoned	The rationale for your design/prototype is logical and well- reasoned to an **above average** standard	The rationale for your design/prototype is logical and well- reasoned to a **very good** standard	The rationale for your design/prototype is logical and well- reasoned to an **exceptional** standard
Support for design/prototype	Your design/prototype is insufficiently supported by theory and/or evidence	Your design/prototype is supported by theory and/or evidence	Your design/prototype is supported by theory and/or evidence to an **above average** standard	Your design/prototype is supported by theory and/or evidence to a **very good** standard	Your design/prototype is supported by theory and/or evidence to an **exceptional** standard
Creativity	Your design/prototype lacks creativity	Your design/prototype is appropriately creative, whether in substance or format	Y our design/prototype is appropriately creative to an **above average** standard	Y our design/prototype is appropriately creative to a **very good** standard	Y our design/prototype is appropriately creative to an **exceptional** standard
(for supporting document) Use of a commercially appropriate document structure (e.g., 'design challenge', 'proposed solution',	Your supporting document is not structured in a commercially appropriate manner (e.g. lacking relevant headings)	Y our supporting document is well structured in a commercially appropriate manner (e.g., relevant headings)	Y our supporting document is well structured in a commercially appropriate manner to an **above average** standard	Y our supporting document is well structured in a commercially appropriate manner to a **very high** standard	Y our supporting document is well structured in a commercially appropriate manner to an **exceptional** standard

'justification for design/prototype')					
Use of academically appropriate document style, writing style and referencing system	You have not used an academically appropriate writing style and/or referencing system (e.g., you have used colloquialisms or overly formal language or failed to use a recognised referencing system e.g., APA or Harvard)	You have used an academically appropriate writing style and referencing system	You have used an academically appropriate writing style and referencing system to an **above average** standard	You have used an academically appropriate writing style and referencing system to a **very high** standard	You have used an academically appropriate writing style and referencing system to an **exceptionally high** standard
Effectiveness of communication	Your written communication is poor	Your written communication is easy to follow	Your written communication is clear and succinct to an **above average** standard	Your written communication is clear and succinct to a **very high** standard	Your written communication is clear and succinct to an **exceptionally high** standard
Clarity of presentation	Y our presentation was not clear (eg because it was difficult to follow your argument, your props or diagrams were unnecessary or difficult to follow, or you did not pronounce your words well)	Y our presentation was not clear (eg because it was difficult to follow your argument, your props or diagrams were unnecessary or difficult to follow, or you did not pronounce your words well)	Y our presentation was clear to an **above average** standard	Y our presentation was clear to an **above average** standard	Y our presentation was clear to an **exceptional** standard
Depth of knowledge of presenter	Y ou did not demonstrate that you possessed enough knowledge of the subject matter of the presentation (eg because of the language you used, because of your answers to unrehearsed questions or because of the examples you gave)	You demonstrated enough depth of knowledge of the subject matter of the presentation (eg because of the language you used, your answers to unrehearsed questions or the examples you gave)	You demonstrated knowledge of the subject matter of the presentation to an **above average** standard	You demonstrated knowledge of the subject matter of the presentation to a **very high** standard	You demonstrated knowledge of the subject matter of the presentation to a **very high** standard
Level of audience engagement	You failed to engage your audience (eg because you failed to create opportunities for audience engagement, dressed inappropriately or started/finished the presentation late)	You sufficiently engaged your audience (eg because you created opportunities for audience engagement, dressed appropriately and started/finished on time)	You sufficiently engaged your audience to an **above average** standard	You sufficiently engaged your audience to a **very high** standard	You sufficiently engaged your audience to an **exceptional** standard

Completion of formal peer and self-evaluation	You failed to complete the formal peer and self-evaluation form or failed to complete it adequately (eg because your comments were brief or genuine)	You completed the formal and self-evaluation form to a satisfactory standard (eg because your comments were thoughtful and genuine)	You completed the formal peer and self-evaluation to an **above average** standard	You completed the formal peer and self-evaluation to a **very high** standard	You completed the formal peer and self-evaluation to an **exceptional** standard
Your contribution to the group assessment task (as assessed by reference to peer and self-evaluation and your lecture's observation)	Your contribution to the group task was below the expected standard (eg in terms of time on task, academic rigour of contribution, cooperation with others or keeping to agreed deadlines etc)	Your contribution to the group task was below the expected standard (eg in terms of time on task, academic rigour of contribution, cooperation with others or keeping to agreed deadlines etc)	You contributed to the group task to an **above average** standard	You contributed to the group task to a **very high** standard	You contributed to the group task to an **exceptionally high** standard