FINAL PROJECT

Problem Statement:

A computer shop will build a computer from components to meet a customer's requirements. For each request for a computer to be built, an estimate of the cost is produced. The shop will check if the price is within the client's budget and suggest a way to make it within the budget.

Write and test a program for the computer shop owner.

- Your program or programs must include appropriate prompts for the entry of data.
- Error messages and other output need to be set out clearly and understandably.
- All variables, constants and other identifiers must have meaningful names.

You will need to complete these **two** tasks. Each task must be fully tested.

TASK 1 – Produce an estimate.

Write a program for TASK 1 to calculate the cost of building a computer using these components:

Component	**Choices**	**Prices in $**
Processor	p3 / p5 / p7	100 / 120 / 200
RAM	16 GB / 32 GB	75 / 150
Storage	1 TB / 2 TB	50 / 100
Screen	19" / 23"	65 / 120
Case	Mini Tower / Midi Tower	40 / 70
USB ports	2 ports / 4 ports	10 / 20

The customer makes a choice for each component and an estimate is produced. The estimate must show a unique estimate number, the components chosen and the price of each component. The estimate must also show the total cost of the computer, which is calculated as the sum of the cost of the components chosen plus 20%.

TASK 2 – Place an order.
Using your estimate from TASK 1, check if the price is within the customer's budget using a separate function. If not you then need to give recommendation for the customer to reduce the cost. Finally, you need to place the order, add the customer's details and today's date to the estimate details to finalize the order.

Deliverables:

1) A fully detailed report that will include the following sections
    - Introduction
    - Flowchart
    - Explanation of your approach
    - Your full code
    - Two different testing cases.

2) Presentation.

Script that contains your code for testing purpose (M-file for Matlab, Dev-C++/repl.it for C++ Language).

Course project general rubric

(1) Student Name: _____ Student ID: _____
(2) Student Name: _____ Student ID: _____
(3) Student Name: _____ Student ID: _____

- Each student should present for at least 2-minutes.
- All presentations must be recorded for quality check.
- During/ after presentation examiner will ask two types of questions.
- Interactive timed questions, Oral questions.
- At least one question per learning outcome will be asked.

Part I: Presentation and discussion

No	Aspect	Max mark	Student # 1	Student # 2	Student # 3
1.	Students' ability to present his/her project in scientific way.	4			
2.	Interactive timed questions.	4			
3.	Oral questions and discussion.	3			
4.	Proper use of course terminologies.	3			

Part II: Report evaluation

No	Aspect	Max mark	Grade
1.	Introduction/ Objective.	1	
2.	Calculations /Codes/ Theory.	1	
3.	Diagrams / Charts / Figures and Plots with proper captions	1	
4.	Results / Analysis & Discussion	1	
5.	Conclusions/ Summary /self-reflection	1	
6.	Quality of work performed including quality of lab report, neatness etc.	1	

Total Grade of each student (Part I + Part II)

Max mark	Student # 1	Student # 2	Student # 3
20			