



Cambridge IGCSE™

COMPUTER SCIENCE

0478/23

Paper 2 Problem-solving and Programming

May/June 2022

PRE-RELEASE MATERIAL



No additional materials are needed.

This material should be given to the relevant teachers and candidates as soon as it has been received at the centre.

INSTRUCTIONS

- You should use this material in preparation for the examination.
- You should attempt the practical programming tasks using your chosen high-level, procedural programming language.

This document has **2** pages.

In preparation for the examination candidates should attempt the following practical tasks by **writing and testing a program or programs**.

Seaview Castle Visitor Centre is open seven days a week. It offers a range of facilities and activities including meeting rooms, a permanent fossil exhibition, supervised walks along the cliff tops and an old stone quarry.

There are three meeting rooms, which can each be booked separately. There is one large room that can be used for a variety of activities such as showing films, holding presentations, displaying exhibitions or wedding receptions. There are also two smaller meeting rooms. Each room can be booked by the day according to the following tariff:

Room	Cost per day
large	\$295
small 1	\$175
small 2	\$150

Write and test a program or programs to arrange meeting room bookings:

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

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

Task 1 – setting up a booking system structure for the meeting rooms

Set up suitable data structures for each of the three meeting rooms to store:

- when it is booked during a fixed eight-week period
- the client's name (the person making the booking)
- a unique booking code
- the cost of the booking.

Task 2 – booking a meeting room

Extend the program in **Task 1** to enable bookings to be made so that the client enters their name, the meeting room required and the day of the booking. After the data has been entered, the program should check if the requested day is available for the required meeting room and if **not**, the client should be allowed to enter an alternative day or exit the program.

If the requested day is available, the booking details and cost of the booking should be output for the client to confirm. Once confirmed, a unique booking code should be generated and stored in both the appropriate meeting room data structure and the unique booking code data structure. The client's name and cost of the booking should be stored in the appropriate data structures set up in **Task 1**.

Bookings of more than one day must be entered as separate single day bookings.

Task 3 – using the booking data

Extend the program in **Task 1** and **Task 2** to make use of the data that is available, to:

- select a meeting room and output the days when it is free
- total and output the amount of money currently taken for all three meeting rooms
- check the bookings for a specific client.

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