Cambridge IGCSE™

COMPUTER SCIENCE **0478/23**

Paper 2 Problem-solving and Programming **October/November 2021**

PRE-RELEASE MATERIAL
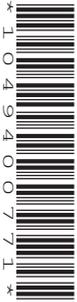
No additional materials are needed.

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.

Your preparation for the examination should include attempting the following practical tasks by **writing and testing a program or programs**.

A cruise ship has a speciality restaurant where tables can be booked for any of the three sessions: lunch, early dinner or late dinner. A booking for a table can only be made on the day. There are twenty tables available to book in the restaurant. Today's date and how many tables are available for lunch, early dinner and late dinner are displayed on a screen at the entrance to the restaurant.

Only one table can be booked at a time. When a booking is made, the name of the passenger making the booking is recorded, together with their cabin number and any special dietary requirements.

Write and test a program or programs for a computer system to manage the daily restaurant bookings.

- Your program or programs must include appropriate prompts for the entry of data; data must be validated on entry.
- 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 **three** tasks. Each task must be fully tested.

Task 1 – at the start of the day

Write a program to set up the screen display at the start of the day showing the date and how many tables are available for lunch, early dinner and late dinner. Bookings are to be stored in three separate arrays: lunch, early dinner and late dinner. Initialise further arrays to record for each table booked: the name of the passenger making the booking, their cabin number and any special dietary requirements.

Task 2 – making a table booking at the restaurant

Check if there is a table available for the session requested. If a table is available, record the passenger's name, cabin number and any special dietary requirements. Mark the table as booked for that session. Display the name and cabin number for the passenger to check. Update the screen display and mark a session as fully booked if all the tables are now booked.

Task 3 – special dietary requirements

The recording of special dietary requirements is confusing the restaurant staff. It has been decided to use fixed options instead of a description. Only one option can be chosen for each booking.

The options are:
- gluten-free
- vegetarian
- vegan
- diabetic
- none.

Update **Task 2** to allow for this.

Update **Task 2** to count and display how many tables have vegetarian or vegan diners during the day.