



# Cambridge IGCSE™

---

## COMPUTER SCIENCE

0478/22

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.

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

A program is needed to allow a Wildlife Park to sell tickets. A booking consists of one or more tickets for the same day(s) and can be made up to a week in advance. A booking can be made for a visit of one day or two consecutive days. A booking can have extra attractions included. A booking will be valid for the day(s) chosen only.

Ticket type	Cost for one day	Cost for two days
one adult	\$20.00	\$30.00
one child (an adult may bring up to two children)	\$12.00	\$18.00
one senior	\$16.00	\$24.00
family ticket (up to two adults or seniors, and three children)	\$60.00	\$90.00
groups of six people or more, price per person	\$15.00	\$22.50

Extra attraction	Cost per person
lion feeding	\$2.50
penguin feeding	\$2.00
evening barbecue (two-day tickets only)	\$5.00

Write and test a program or programs for the Wildlife Park:

- 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** – displaying the ticket options and the extra attractions available

Set up your program to:

- display the options, attractions and prices for one-day tickets
- display the options, attractions and prices for two-day tickets
- show the days available for booking; assume that there are tickets available for any valid day.

**Task 2** – process a booking

Extend your program for **Task 1** to:

- input the tickets and extra attractions required, then calculate the total cost of the booking
- allocate a unique booking number
- display the booking details, including the total cost and the unique booking number
- repeat as required.

**Task 3** – ensuring each booking is the best value

Check that the total for each booking gives the best value and offer an alternative if this is **not** the case. For example, buying two family tickets is better than a group ticket for a group of 10 that includes four adults and six children.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cambridgeinternational.org](http://www.cambridgeinternational.org) after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.