



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.

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