MODULE O ROBUST PROGRAMS · O5

Why we test, and iterative vs final testing

Original practice questions · 20 marks · ~25 minutes · OCR J277 spec 2.3.2

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. The total for this worksheet is **20 marks**. All code on this sheet is written in OCR Exam Reference Language.

A small museum asks a programmer to write a program for its ticket kiosk. The program is made of separate modules: one works out the cost of the tickets, one takes the payment and one prints a receipt. All the questions on this worksheet are about this program.

1

Total: 4 marks

(a) The table describes four tests that the programmer carries out. Tick (✓) **one** box in each row to show whether each test is iterative testing or final/terminal testing. **[4]**

Test	Iterative	Final/terminal
The cost module is tested as soon as it has been written, before the payment module is started.		
The finished program is run on the kiosk to check that it does everything the museum asked for.		
The receipt module is tested again after an error in it has been corrected.		
Just before the kiosk opens to the public, the programmer checks that all three modules work together.		

2

Total: 2 marks

(a) State **two** purposes of testing the kiosk program. **[2]**

1

2

3 **Total: 4 marks**

(a) Describe what is meant by **iterative** testing. **[2]**

(b) Describe what is meant by **final/terminal** testing. **[2]**

4 **Total: 6 marks**

The museum's rule for group tickets is:

- groups of 10 or more people pay £9 per person
- smaller groups pay £12 per person.

The programmer writes this function for the cost module. The parameter `people` is always a whole number of 1 or more.

```
01 function groupCost(people)
02     if people > 10 then
03         cost = people * 9
04     else
05         cost = people * 12
06     endif
07     return cost
08 endfunction
```

As soon as the function is written, the programmer tests it on its own. The table shows the tests.

Test	Value of `people`	Expected result (£)	Actual result (£)
1	4	48	48
2	10		120
3	25		225

(a) Complete the table by writing the expected result for Test 2 and Test 3. **[2]**

(b) Identify the test that shows there is an error in the function. **[1]**

(c) Identify the line number that contains the error and write the corrected line of code. **[2]**

Line number .....

Corrected line

(d) State what the programmer should do after correcting the error. **[1]**

5 **Total: 4 marks**

Every module of the kiosk program has passed iterative testing. The museum manager says that final/terminal testing is therefore not needed.

(a) Explain **two** reasons why the programmer should still carry out final/terminal testing on the kiosk program. **[4]**

1

2

Total for this worksheet: 20 marks