MODULE O ROBUST PROGRAMS · O2

Input validation

Original practice questions · 22 marks · ~25 minutes · OCR J277 spec 2.3.1

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 **22 marks**. All code on this sheet is written in OCR Exam Reference Language.

1

Total: 3 marks

(a) Tick (✓) **one** box in each row to show whether each statement about input validation is true or false. **[3]**

Statement	True	False
Input validation automatically checks that data entered is sensible and follows set rules before the program accepts it.		
If an input passes validation, it must be correct.		
A type check could reject the input `six` when a whole number is expected.		

2

Total: 6 marks

A community tool library lends garden and DIY tools to its adult members. Members use a program on a kiosk to borrow tools. The program validates each input before it is accepted.

(a) Complete the table by identifying the most suitable validation check for each rule. **[4]**

Input	Rule	Validation check
Member number	Two capital letters followed by four digits, for example `TL4827`	
Number of days to borrow the tool	A whole number from 1 to 14 inclusive	
Contact phone number	Exactly 11 characters	
Name of the tool to search for	Must not be left blank	

(b) A member enters 20 as the number of days to borrow a tool. **[2]**
Describe how the program should deal with this input.

3

Total: 4 marks

An escape room takes bookings for teams of 2 to 6 players. This program is meant to keep asking for the number of players until a value from 2 to 6 is entered. It contains a logic error.

```
01 players = int(input("How many players? (2 to 6)"))
02 while players < 2 AND players > 6
03     print("Team size must be 2 to 6")
04     players = int(input("How many players? (2 to 6)"))
05 endwhile
06 print("Booking for " + str(players) + " players")
```

(a) Identify the line number that contains the logic error. **[1]**

(b) A user enters 9 the first time they are asked. State what the program, as written above, outputs. **[1]**

(c) Write a corrected version of the line you identified in part (a). **[1]**

(d) Explain why the input on line 04 is inside the loop. **[1]**

4

Total: 3 marks

A gym locker lets an adult member choose their own code. The program checks the length of the code.

```
01 do
02     code = input("Enter locker code")
03     if code.length != 4 then
04         print("Code must be 4 characters")
05     endif
06 until code.length == 4
07 print("Locker set")
```

(a) A member enters these three codes, one each time the program asks: `73`, then `73915`, then `7391`. Complete the table to show what the program outputs after each code is entered. Write **nothing** in a box if there is no output. **[3]**

Code entered	Output
73	
73915	
7391	

5 **Total: 6 marks**

A community radio station has an online message board. Each listener chooses a username when they join. A username is valid only if it:

- is not left blank
- has no more than 12 characters.

(a) Write a program that: **[6]**

- asks the user to enter a username
- validates the username using the two rules above
- outputs an error message and asks for the username again each time the username is invalid
- outputs `Welcome` followed by the username once a valid username has been entered.

You must use either: OCR Exam Reference Language, or a high-level programming language that you have studied.

Total for this worksheet: 22 marks