PRE-RELEASE MATERIAL 2210/22 MJ-2020

O-Level Computer Science May/June 2210 2020

Exam Style Questions:

Explain what `DATA STRUCTURES / ARRAYS` you have used in your program.

Array1: maxparking [ ] = {8, 2, 2, 2, 2, 2, 4} `CONSTANT array with fixed values`
Data Type: `INTEGER`
Purpose: To store the maximum allowed parking hours in the week as per day selected.
Array 2: hourprice [ ] = {2, 10, 10, 10, 10, 10, 3} `CONSTANT array with fixed values`
Data Type: `INTEGER`
Purpose: To store the hour price of parking as per week day.

Name **three** variables that you have used in **Task 1, Task2 or Task 3** and state the purpose of each one.

Variable 1: `arrivaltime`
Data Type: `INTEGER`
Purpose: To input the arrival time in parking

Variable 2: `Choice`
Data Type: `BOOLEAN`
Purpose: To input choice of customer, whether he has Frequent Parking number or not?

Variable 3: `frequentparknum`
Data Type: `INTEGER`
Purpose: To store the calculated Frequent Parking number.

Name **two** constant you used for **Task 1, Task2 or Task 3** and state the purpose of each one.

Constant 1: `morninghour = 8`
Data Type: `INTEGER`
Value = 8
Purpose: Constant is used to store the morning parking time

Constant 2: `eveninghour = 16`
Data Type: `INTEGER`
Value = 16
Purpose: Constant is used to store the evening parking time

Constant 3: `midnighthour = 24`
Data Type: `INTEGER`
Value = 24
Purpose: Constant is used to store the midnight parking time

Q2(a) Explain how your program in Task 1 calculates the **checkdigit** of Frequent Parking Number.

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..... [2]

Answer:

```
INPUT digit1, digit2, digit3, digit4, digit5

      frequentparknum = (5 * digit1) + (4 * digit2) + (3 * digit3) + (2 * digit4)

      checkdigit = 11 - (frequentparknum Mod 11)
```

Q2(b) Explain how your program in Task 1 verifies that **checkdigit** entered is correct or not? And explain how discount is calculated for correct **Frequent Parking Number**

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Answer:

```
OUTPUT("Do you have frequent parking number? True for yes, False for No")
INPUT choice
   If choice = True Then
      OUTPUT("enter your 5 digit frequent Parking number,  one digit at a time")
      INPUT digit1, digit2, digit3, digit4, digit5
       frequentparknum = (5 * digit1) + (4 * digit2) + (3 * digit3) + (2 * digit4)
       checkdigit = 11 - (frequentparknum Mod 11)
          If checkdigit = digit5 Then        //if checkdigit mathes digit5 entered
                 If arrivaltime >= afternoonhour Then
                    discount = parkingprice / 2 //50% discount applied
                 Else
                    discount = (parkingprice / 100) * 10 //10% discount applied
                 End If
          Else
              discount = 0    //if checkdigit <> digit5 then no discount
          End If
   Else
       discount = 0  //if user does not have FPN then no discount
 End If
```

Q2(b) Explain how your program works in Task 1. You may include PSEUDOCODE, FLOWCHART or Program statements as your explanation.

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