
# UNIVERSITI TEKNOLOGI MALAYSIA

## ASSIGNMENT 2 (INDIVIDUAL)

## SEMESTER II 2020/2021

**SUBJECT CODE : SECJ2154**
**SUBJECT NAME : OBJECT ORIENTED PROGRAMMING**
**YEAR/COURSE : 2 (SCSJ / SCSV / SCSB / SCSR)**

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**SUBMISSION PROCEDURE:**

1. Submit the following via the **UTM's e-learning system**.
   - source code (*i.e.* the file with the extension **.java**)
   - input file
   - MS Word or PDF - source code & output screenshot

2. Submission due date : 17 May 2021

## PROBLEM SOLVING (70 Marks)

Write **three (3**) complete Java programs named, DailyReport.java, Person.java and CaseList.java. Use the instructions given in (a), (b) and (c).

a) Define class Person with the following information: (12 Marks)

(i) Class Person has 4 attributes: gender, age, background and status

(ii) Write a constructor for class Person that initializes Person attributes through parameter passing.

(iii) Write suitable code for the getter (accessor) methods.

b) Write a class CaseList with the following information: (12 Marks)

(i) The class uses enum data type. The enum class has a fixed set of constants as listed in Table 1. Define the enum data type based on **all cases** listed in Table 1.

(ii) Class CaseList has 2 attributes: background and status.

(iii) Write a constructor for class CaseList that initializes CaseList attributes through parameter passing.

(iv) Write suitable code for the getter (accessor) methods.

**Table 1:** Set of constant and values for CaseList enum class

| CASE | BACKGROUND | STATUS |
|---|---|---|
| CASE1 | TRAVEL ABROAD | QUARANTINE |
| CASE2 | CLOSE CONTACT | QUARANTINE |
| CASE3 | COVID SYMPTOM | WARDED |
| CASE4 | CRITICAL | ICU |
| CASE5 | RECOVER | DISCHARGED |

c) Write class DailyReport that only has main() method with the following codes: (36 Marks)

(i) Read an input file named InputSB.txt with a list of gender, age and Person's Case.

(ii) Create an arraylist of objects from class Person to store the value that read in c(i).

(iii) Print all cases in the CaseList enum class to produce the output as in Figure 2.

(iv) Count how many cases for Quarantine, Warded, Recover, in ICU. (Use enum value to count the different cases).

(v) Count the number of all cases. (You may use static variable to count the total cases)

(vi) The program should produce the output as shown in Figure 2. You need to use appropriate formatting for the output.

(vii) In your program, you need to identify the suitable variables, instance declarations, and arraylist declaration where appropriate.

d) Proper documentation and indentation. (4 Marks)

e) **Error free program** and work as required. (6 Marks)

```
M       67      CASE1
M       76      CASE2
M       50      CASE3
F       55      CASE3
M       60      CASE4
M       32      CASE2
F       45      CASE1
F       58      CASE3
M       24      CASE1
F       59      CASE2
M       78      CASE4
M       48      CASE5
F       62      CASE5
M       65      CASE5
```

**Figure 1.** Content of InputSB.txt

```
Covid-19 Cases and Action Required
CASE1: TRAVEL ABROAD      QUARANTINE
CASE2: CLOSE CONTACT      QUARANTINE
CASE3: COVID SYMPTOM      WARDED
CASE4: CRITICAL           ICU
CASE5: RECOVER            DISCHARGED
```

*Output produced from question c(iii)*

```
                COVID-19 DAILY REPORT
Case    Gender      Age     Background      Status
1       Male        67      TRAVEL ABROAD   QUARANTINE
2       Male        76      CLOSE CONTACT   QUARANTINE
3       Male        50      COVID SYMPTOM   WARDED
4       Female      55      COVID SYMPTOM   WARDED
5       Male        60      CRITICAL        ICU
6       Male        32      CLOSE CONTACT   QUARANTINE
7       Female      45      TRAVEL ABROAD   QUARANTINE
8       Female      58      COVID SYMPTOM   WARDED
9       Male        24      TRAVEL ABROAD   QUARANTINE
10      Female      59      CLOSE CONTACT   QUARANTINE
11      Male        78      CRITICAL        ICU
12      Male        48      DISCHARGED      RECOVERED
13      Female      62      DISCHARGED      RECOVERED
14      Male        65      DISCHARGED      RECOVERED

Total In Quarantine = 6
Total In ICU = 2
Total Warded = 3
Total Recovered = 3
Total Cases = 14

Press any key to continue . . .
```

**Figure 2:** Expected Output of the program