**Assignment**

**Student Management System**

The goal of an Assignment to develop a Console application named Student management system (SMS). This system contains three main functions: Add a new student/ a new subject and enter marks of subject for a given students.

# Files used by SMS Application:

All information about students, subjects, and marks are stored in files students.txt, subjects.txt, and marks.txt respectively.

All contents of these files are described below:

1) Students.txt file:

HE123457;Nguyen Van B;20

HE123456;Nguyen Van A;21

HE123458;Nguyen Van C;20

Each line contains information of a student, including student ID, student name, and age. Each data field is separated by a character ‘;’.

2) Subjects.txt file:

PRF192;Programming Fundamentals

PRO192;Object-Oriented Programming using Java

Each line contains information of a subject, including subject ID, subject name. Each data field is separated by a character ‘;’.

5) Marks file:

HE123456;PRF192;5.5

HE123457;PRF192;7.5

HE123458;PRF192;6.5

Each line contains information of an subject’s marks for a student, including student ID, subject ID, and marks. Each data filed is separated by a character ‘;’.

# Functions of SMS Application:

Your program output may be look like:

Assignment: A1605, Group 1

MENU

1. Add a new subject
2. Add a new student
3. Enter a subject’s marks for the given student
4. Exit

Please enter 1, 2, 3, or 4:

## Add a new subject (when the user enters 1)

The program will allow the user to add a new subject.

With above files, your program output may be look like as below:

List of subjects:

ID Name

PRF192 Programming Fundamentals

PRO192 Object-Oriented Programming using Java

Enter subject ID (not empty):

Enter subject ID (not empty): DBI202

Enter subject name (not empty): Database systems

List of subjects:

ID Name

PRF192 Programming Fundamentals

PRO192 Object-Oriented Programming using Java

DBI202 Database systems

Press enter key to continue

After pressing enter key, those subjects will be saved into file subjects.txt.

Requirement:

+ Subject ID must not be empty and unique, otherwise you must enter again.

+ Subject name must not be empty, otherwise you must enter again.

## Add a new student (when the user enters 2)

The program will allow the user add a new student.

With above files, program output may be look like as below:

## List of students:

ID Name Age

## HE123457 Nguyen Van B 20

## HE123456 Nguyen Van A 21

## HE123458 Nguyen Van C 20

## Enter student ID (not empty):

## Enter student ID (not empty): HE123456

## Enter student ID (not empty): HE012345

## Enter student name (not empty): Nguyen Thi Lan

## Enter age (18 – 25): 16

## Enter age (18 – 25): 18

## List of students:

ID Name Age

## HE123457 Nguyen Van B 20

## HE123456 Nguyen Van A 21

## HE123458 Nguyen Van C 22

## HE012345 Nguyen Thi Lan 18

Press enter key to continue!

After pressing enter key, those students will be saved into file students.txt.

## 

Requirement:

+ Student ID must not be empty and unique, otherwise the user must enter again.

+ Student name must not be empty, otherwise you must enter again.

+ Age must not be from 18 to 25, otherwise you must enter again.

## Enter subject’s marks for the given student (when the user enters 2)

## List of students:

ID Name

## HE123457 Nguyen Van B

## HE123456 Nguyen Van A

## HE123458 Nguyen Van C

## HE012345 Nguyen Thi Lan

## Enter student ID in the list: HE123459

## Enter student ID in the list: HE123456

List marks of student HE012345:

Subject Marks

PRF192 5.50

PRO192 7.50

DBI202 0.00

## Enter subject ID in the list: PRN292

## Enter subject ID in the list: PRF192

## Enter marks (0 – 10): -1

## Enter marks (0 – 10): 8.5

List marks of student HE123456:

Subject Marks

PRF192 8.50

PRO192 7.50

DBI202 0.00

Press enter key to continue!

After pressing enter key, those marks will be saved into file marks.txt.

Requirement:

+ Student ID must be in the list, otherwise you must enter again.

+ Display all subjects in the file “subjects.txt” and marks of the given student (marks = 0 if that subject’s marks is not existed in file “marks.txt”)

+ Subject ID must be in the list, otherwise you must enter again.

+ Marks must be a double from 0 to 10, otherwise you must enter again.