



Faculty of Engineering and Technology
Electrical and Computer Engineering Department
Linux Laboratory, ENCS3103
Python Project

Project Description

The covid-19 pandemic enforces the education system to adopt virtual and blended teaching/learning modes. In these modes, instructors use special software and platforms to deliver lecture such as Zoom and Big Blue Button (BBB). However, it is challenging for instructors to keep track of attendance sheets and participation of students during online sessions. In this project you will be designing and implementing a python script that investigates and combines attendance and participation information of students attending several lectures of a specific course. **Your script will process the input information and provide a clear and well formatted output files.**

Input Sheets/Reports:

- 1- **Student List Sheet:** a .csv file that includes a **list of students in a course** such as “ENCS3130-StudentList.csv”.
- 2- **Meeting Attendance Reports:** a folder with several attendance reports
 - a. The name of the meeting attendance reports will be according to the following convention: **Course Code-MM-DD-YYYY-AR.csv** such as “ENCS3103-03-25-2021-AR.csv”
 - b. The content of each attendance report will include names of attendees and **total attendance duration** as shown below. The names of students could be of different formats and might include student IDs.

Name (Original Name),Total Duration (Minutes)
1180955-Emil Abulail,159
Aseel Saleh,157
mahmoud rawagba-1180560,153
Rawan Salama,152
Shahd Muhareb,154
1190114-Aseel Sabri,151

- 3- **Meeting Participation Reports:** a folder with several Meeting Participation Reports.
 - a. The name of Meeting Participation Reports will be according to the following convention: **Course Code-MM-DD-YYYY-PR.txt** such as “ENCS3103-03-25-2021-PR.txt”
 - b. The content of each Meeting Participation Report will include messages posted by participants as shown below. Each post consists of the following:
 - i. Time of the post
 - ii. The sender of the post
 - iii. The receiver of the post (a person or everyone)

iv. the message

```
14:35:45 From Eid Zaben to Everyone : cd shahd
14:35:46 From mahmoud rawagba-1180560 to Everyone : cd shahd
14:35:49 From Majed Aboudi to Everyone : cd shahd
14:35:56 From Summar khraishi to Everyone : je
14:36:01 From Osama Rihami to Everyone : mkdir n
14:36:02 From Eid Zaben to Everyone : mkdir hello
14:36:03 From Summar khraishi to Everyone : cd *
```

Output Sheets/Reports:

- 1- **Class Attendance Sheet:** one .csv file that includes the names of all students in the Student List Sheet and the attendance for each of them. The symbol **x** is for students attending the meeting and symbol **a** is for students missing the meeting (absent). This sheet is generated based on Student List Sheet and Meeting Attendance Reports. The format of the sheet should be as follows:

```
student ID, Student Name, 02-25-2021, 03-04-2021, 03-14-2021
1150134, Summar Khaled Baker Khraishi, x, a, x
1171480, Rana Khair Mohammad Saad, x, x, a
1171482, Lama Mohammad Yousef Alhatel, x, a, a
1171562, Majed Bassam Afif Aboudi, x, x, x
1172316, Abdallah Mustafa Abdallah Bahrawi, a, a, a
```

- 2- **Nonvalid Meeting Attendance reports:** a folder with several Nonvalid Meeting Attendance Reports.
 - a. The name of the Nonvalid Meeting Attendance Reports will be according to the following convention: **Course Code-MM-DD-YYYY-AR-NV.csv** such as **"ENCS3103-03-25-2021-AR-NV.csv"**
 - b. Each Nonvalid Meeting Attendance Report will include the entries that corresponds to the Meeting Attendance Report that was not reflected (considered) into the Class Attendance Sheet.
- 3- **Class Score sheet:** one .csv file that include the number of posts (participations) of all students in the Student List Sheet and the participations of each of them. This sheet is generated based on Student List Sheet and Meeting Participation Reports. The format of the sheet should be as follows:

```
student ID, Student Name, 02-25-2021, 03-04-2021, 03-14-2021
1150134, Summar Khaled Baker Khraishi, 15, 20, 21
1171480, Rana Khair Mohammad Saad, 12, 0, 12
1171482, Lama Mohammad Yousef Alhatel, 11, 1, 22
1171562, Majed Bassam Afif Aboudi, 12, 21, 22
1172316, Abdallah Mustafa Abdallah Bahrawi, 11, 11, 21
```

- 4- **Nonvalid Meeting Participation Reports:** a folder with several Nonvalid Meeting Participation Reports.
- c. The name of the Nonvalid Meeting Participation Reports will be according to the following convention: **Course Code-MM-DD-YYYY-PR-NV.csv** such as **“ENCS3103-03-25-2021-PR-NV.csv”**
 - a. Each Nonvalid Meeting Participation Report includes the entries that corresponds to the Meeting Participation Report that was not reflected (considered) into the Class Score Sheet.

Components:

- 1- Main script with Option Parser. Use python option parser to specify the following:
 - a. Path to Student List Sheet
 - b. Path to the folder of Meeting Attendance Reports
 - c. Path to the folder of Meeting Participation Reports
 - d. Path to store all output documents/folders
 - e. **P**: your program should have an option to only consider students who attended more than **P** minutes in the meeting as present and assign them a symbol **x** in the Class Attendance Sheet. Otherwise, they students are absent and assigned symbol **a**.

Example: Assume **P** is set to 60 minutes, then **1180955-Emil Abulail** and **Rawan Salama** will be considered absent of the meeting.

Name (Original Name),Total Duration (Minutes) 1180955-Emil Abulail,55 Aseel Saleh,157 mahmoud rawagba-1180560,153 Rawan Salama,52 Shahd Muhareb,154 1190114-Aseel Sabri,151

- f. **Tb**: your program should have an option to drop some entries at the beginning of all Meeting Participation Reports. All entries within **Tb** minutes of the first entry will be dropped and not considered in the Class Score Sheet.

Example: Assume **Tb** is set to 1 minute, then the first three entries in this Meeting Participation Report will not be considered for **Class Score Sheet** (will not be counted).

14:35:45 From Eid Zaben to Everyone : cd shahd 14:35:46 From mahmoud rawagba-1180560 to Everyone : cd shahd 14:36:40 From Majed Aboudi to Everyone : cd shahd 14:36:56 From Summar khraishi to Everyone : je 14:37:01 From Osama Rihami to Everyone : mkdir n 14:38:02 From Eid Zaben to Everyone : mkdir hello 14:38:03 From Summar khraishi to Everyone : cd *

- g. **Te**: your program should have an option to drop some entries at the end of all Meeting Participation Reports. All entries within **Te** minutes of the last entry will be dropped and not considered in the Class Score Sheet.

- 2- Object-oriented coding: build your code by defining proper classes.
 - a. **Abstract Class**: you need to implement an abstract class with all methods that must be created within any child classes built from the abstract class.
 - b. **Main Class**: you must implement all methods in the abstract class.
 - c. **Inheritance**: create a child class from the main class for each course.
 - d. All Class members must be either **Private or Protected**.

Submission and notes:

- 1. Submit a running Python Code through ITC.
- 2. Write the python code to satisfy the requirements described above.
- 3. Make sure your code is clean and well indented; variables have meaningful names, etc.
- 4. Make sure your code has enough comments inserted to add clarity.
- 5. Work in groups of at most two students
- 6. Deadline: 7 June, 2021 at 11:59pm.
- 7. This project is per group effort: instances of cheating will result in you failing the lab.
- 8. The project discussion date will be decided later.