Discussion about problem encountered

1. **Decision on drawing Class diagram**

Here is part of the mistake when we first drew the class diagram. Since we didn’t have a fully understanding on how to draw a class diagram, it is hard to draw a correct class diagram.

* **about name format**

the first letter of class name should all be in capital and use only one word: TeachingSession

the first letter of attribute in the class should all be in lower-case: groupID

* **about all the controller class**

the relationship between Teacher class and TeacherController class should be Inheritance (trangle arrow)

the relationship between Admin class and AdminController class should be Inheritance (trangle arrow)

the relationship between Teacher class, Admin class and PublicControl class should be Inheritance (trangle arrow)

* **about Module class**

the relationship between Student class and Module class should be Aggregation (hollow diamond)

the relationship between Module class and Group class should be Composition (solid diamond)

* **about Teacher class**

the relationship between Teacher class and Module class should be Association (single arrow)

link Teacher class and TeachingSession class using Aggregation, add [tutor:Teacher] into TeachingSession

* **about FaceFetector class**

the relationship between TeacherController class and FaceDetector class

the relationship between FaceDetector class and attendence class

In our third formal meeting, our supervisor checked our class diagram and several serious problems are found in our class diagram, including missing class, wrong relationship and problem with controller classes. Professor Zheng Lu showed his patience in teaching us how to formally design a class diagram, and what needs to be considered when drawing the class diagram, as well as why do we use a class diagram. After this meeting, with the help of online sources, the class diagram was improved quite a lot.

1. **Due to COVID-19, how to schedule regular meeting, arrange working and cooperate with each other?**

Since the situation of the COVID-19, we have to stay at home. This greatly affected the team work on the aspect of communication and working willingness. So, as soon as the school confirmed that we will not be able to go back to school, an informal meeting is held to solve this problem.

In this meeting, we decided to use zoom to hold the remaining meeting, including both formal meeting and informal meeting. Also, we agreed to use WeChat group more frequently to keep in touch with each other. Task for everyone will be assigned after meetings for each week. In consideration of the location distance, it is compulsive that every member needs to install required running environment and other software. GitHub will be used to update each progress.

1. **The first version of UI has quite a lot of defect, an informal meeting is held to find the deficiency of all the frames. Part the suggestions are listed below.**
   * click once and twice have different reaction which may not be user friendly.
   * Size of text on the button may be too small
   * Front page button on module page should be disabled
   * Window title should be more specific
   * there is a blank space on teachingSession page
   * Start/Pause/Stop need press animation
   * progress bar can be longer
   * When recording, cannot go back to home page.

Since there are many advises to improve or even change some of the frames, it is decided to implement these changes when the functionality is connected to the controls. Actually, UI has been changed a lot of times to meet the requirements and more than two pages are added. Back-end should realize the requirement and UI should provide the interface to allow these functions to implement.

1. **One of the team members cannot use GitHub at home.**

It is hard to develop one program without any cooperating tools, especially he works on functionality part. A suggestion is provided that the latest version of program will be sent to him on WeChat and after he added his work into the program, he sent it back. Then, this new version can be push to the git by other members. In this case, the lowest requirement is that the program that he sent back should be runnable. Finally, this problem is solved as he logged onto git and pushed his part using magic. After this push, he contributed nothing to this project.

1. **Delay of works**

It is usual that people are not willing to work during holidays. So, in the winter holiday, we wasted quite a lot of time. After the sprint festival, we held an informal meeting to have a discussion on this situation. In informal meeting 9, we made an agreement that we need to focus on the project again, although it was still in holiday.

Rest work is listed, and our team was divided into two groups.

* front-end

Boya WANG, Guohao YU and Hongyi ZHU

* back-end

Mingchen LI and Yiming LI

UI implementation is the more urgent part. With the hard work of Boya WANG to set the structure and the MVC pattern for program, Guohao YU to connect the page transferring and Hongyi ZHU working on qss pattern, Yiming LI started to work on teacher functionality and Mingchen LI started to work on implementing OpenCV library into the program.

1. **qlistView cannot refresh**

There is one control element named qlistView, which is defined in qypt library. In the qlistView, a model with a list should be set so that this listView can display the list line by line. However, when trying to change the list in the model, it seems that the qlistView will not change the content inside it immediately.

Internet was searched trying to get some help from online open source. However, there is no sufficient information about this problem. Adding refresh function while doing the change was tried, but failed. Finally, this problem is solved by each time creating a new model to set to this qlistView. In this case, it can be ensured that the content in the qlistView will be changed interactively.

1. **Can’t fresh part of the software window**

The UI is design that there will be basic frame which will always remain unchanged, while part of the frame refreshes during the page transfer. To solve this problem, Internet was searched trying to get some help from online open source. It is found that using QstackedWidget will be able to change different content in one part of the whole window without creating a new one (CSDN,2020). Finally, this design is implemented into the program.

1. **When separate View and controller, it’s hard to monitor button clicking status from another file.**

With the MVC pattern that we have chosen when developing our program, each page was divided into model, view and controller. In this case, it’s hard to monitor button clicking event from another file. To solve this problem, Internet was searched trying to get some help from online open source. It is found that using PyqtSignal to can connect a button with a method from another file. (CSDN, 2020). Finally, this design is implemented to every click events in the program.