UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Malaysia-Japan International Institute of Technology (MJIIT)

ADVANCED PROGRAMMING

SMJE 4383

2020/2021 SECTION 1

ASSIGNMENT 1

GROUP MEMBERS:

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INTRODUCTION

The web application is defined as collective instruction that is executed by the computer to perform a specific task that utilizes web browsers technology in order to perform tasks over the Internet. It is developed by the programmers that are called as web developers from the remote server in which later being delivered to the users through the internet for access. These web applications do not require downloading for access as it could be accessed through a network.

In developing web applications, various programming languages are used depending on the developers' preference such as Python, Ruby, C++ and Swift. In this project, Python3 is used in developing the web application while Djanggo is chosen as the framework to execute and support the web application development. Djanggo is a high-level, free source web framework that supports rapid web development as well as clean and practical solutions in building web applications.

OBJECTIVES

1. To solve industrial based problems by implementing the knowledge gained in Advanced Programming subject and produce a web based application .
2. To carry out a programming task that can achieve web-based projects.

PROBLEM STATEMENT

Implementation of programming language in real life application especially in solving industrial-based problems is limited for the students in university even though the student has mastered the basic knowledge of the languages learnt.

SCOPE AND LIMITATION

1. This project is limited to industrial-based problems that use python3 as a programming language.
2. This project development only used Django as a framework.

PROJECT MANAGEMENT

In order to complete the project, we have investigated, discussed and worked together from the beginning to the end. The diagram 1 shown below is the flowchart on the process of work we did throughout the period.

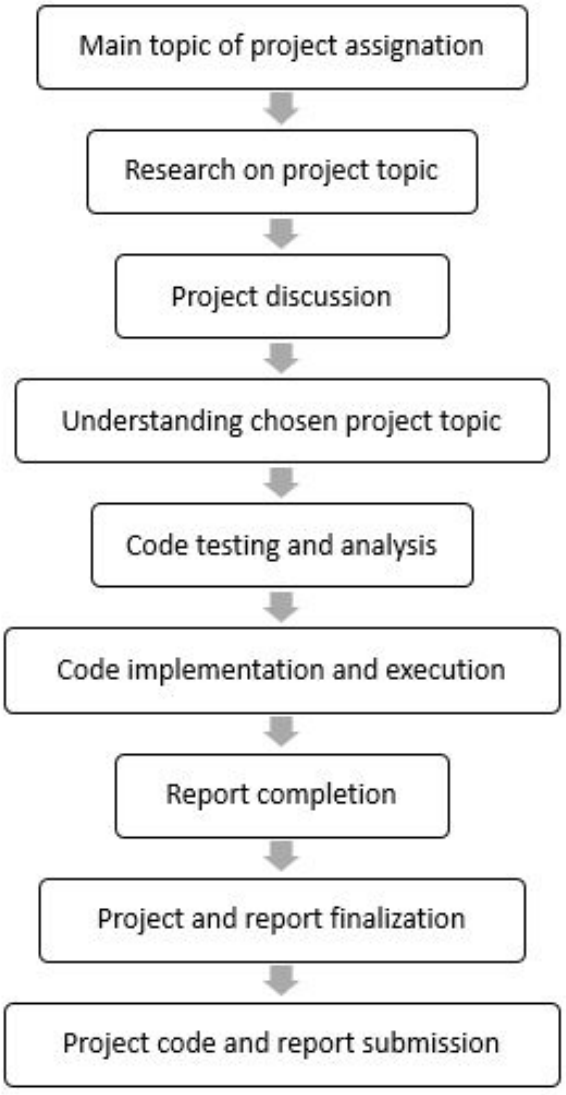

Diagram 1: Flowchart of working process.

Table 1: Gantt chart

Activities	Days							
	23NOV	24NOV	25NOV	26NOV	27NOV	28NOV	29NOV	30NOV
Main topic of project assignation								
Research on project topic								
Project discussion								
Understanding chosen project topic								
Code testing and analysis								
Code implementation and execution								
Report completion								
Project and report finalization								
Project code and report submission								

DESIGN APPROACHES

Thinking that most of the people nowadays rely on the internet for the jobs, assignments and work, an web-based application of To-Do list is needed to replace the written one as users can check the list anywhere at any time. It is also convenient in a way that the tasks needed to be done are listed clearly and nicely.

In this project, we are trying to make a To-Do list application with simple functions such as being able to view the list of To-Do tasks, adding new tasks, edit name of the tasks, delete and strike though the completed tasks.

WORKING MECHANISM

In this project, a virtual environment in Ubuntu named *asgt1* is used. A virtual environment is a tool that helps keeping dependencies required by different projects separate by creating isolated python virtual environments for them. By using the virtual environment for this assignment, some dependencies needed witn the one used in other work are able to be separated in order to keep the work more organized and neat.

Since this is a web-based assignment, Django is chosen as the web developing framework. Django is a Python-based free and open-source web framework that follows the model-template-views architectural pattern. Throughout this project completion, various knowledge about Django are able to be explored and learnt through the internet and tutorials videos.

In this project, *define functions* are used to provide the required functionality. Table 1 shown below is the list of the defined functions in which are the features for the to-do list tracker in this project:

Table 2: The list of the defined functions in which are the features for the to-do list tracker.

Features	**Function**
Home	Main page to view, add, edit, delete and cross out tasks.
Add list	To add a new task.
Delete	To delete a task. A message will be displayed if it is deleted successfully.
Finished	To strike through a task when it is completed.
Unfinished	To unstrike the task when it is accidentally striked out.
Edit	To edit the name of the task. A message will be displayed if the edit is successful.

The define functions are coded in the views.py file and being called into other html and py files. There are also other python statements and code functions that are used in this project as below:

- If else statement
- Block statement
- Table function
- Return statement
- Others

In order to obtain the layout of the navbar, the Getbootstrap website was referred to. Navbar mostly uses class, links (href) and if else statements.

DATA PRESENTATION

A new repository had been created through the Github account to compile and manage the coding process. All the files and folders for this assignment are pushed into the repository and can be checked by cloning it into the terminal. In order to understand the flow and explore more on Python programming as well as web developing, simple coding assemblement was used. All of the files were pushed in one branch, which is the main branch named 'assignment1'. The link for the repository is as below:

https://github.com/puteriffah/SMJE4383-assignment1

OUTCOME ANALYSIS

The outcomes for each featured instruction of this project are shown as below:

Diagram 2 below shows the view of the main page of the application, where all the tasks added are listed with some button features available to enable adding, editing, strike through and deleting tasks.

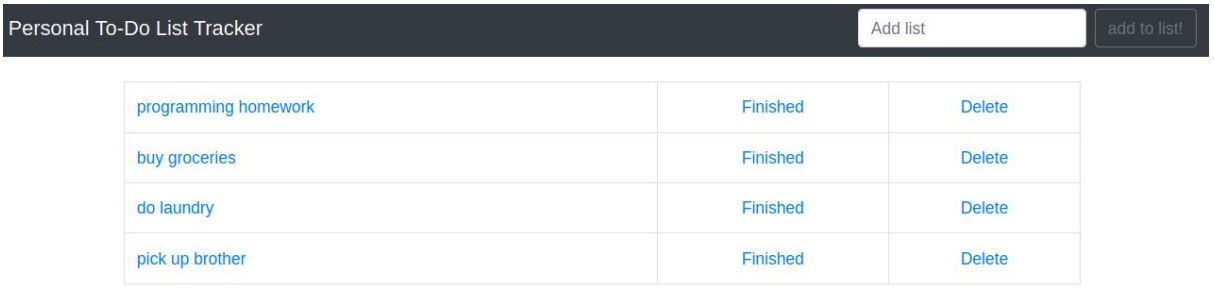

Diagram 2: The To-Do list.

Diagram 3 shows the To-Do list with some strikethrough lines on the completed tasks. The background color of the completed tasks will also change to ease the user to look at the incomplete tasks.

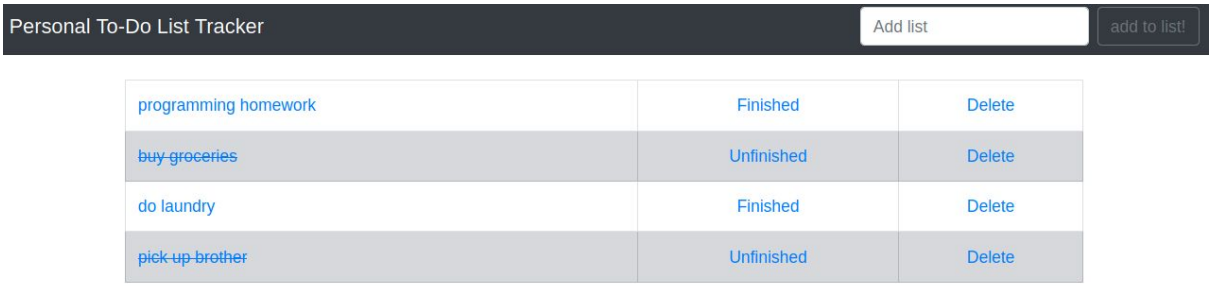

Diagram 3: The strikethrough line on the tasks when the tasks are checked by clicking the "Finished" button.

Diagram 4 below shows the page of editing of tasks when the title of the task is clicked.

Diagram 4: The edit page when the title of the task is clicked.

Diagram 5 below shows the page after the "Edit" button is clicked. It returns to the main page with a pop-up message "Edited!" to inform that the name of the task is edited successfully.

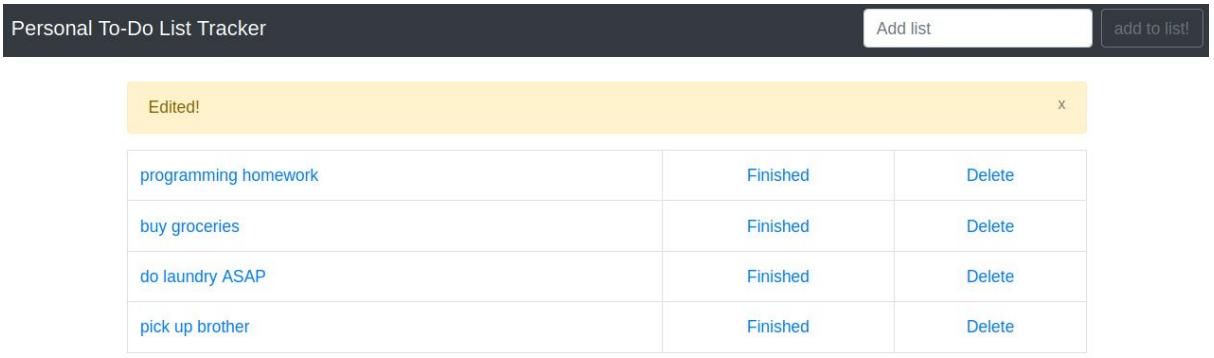

Diagram 5: Back to the main page with message "Edited!" when edit is successful.

Diagram 6 shows the pop-up "Successfully deleted!" message appears when the "Delete" button of one of the tasks is clicked.

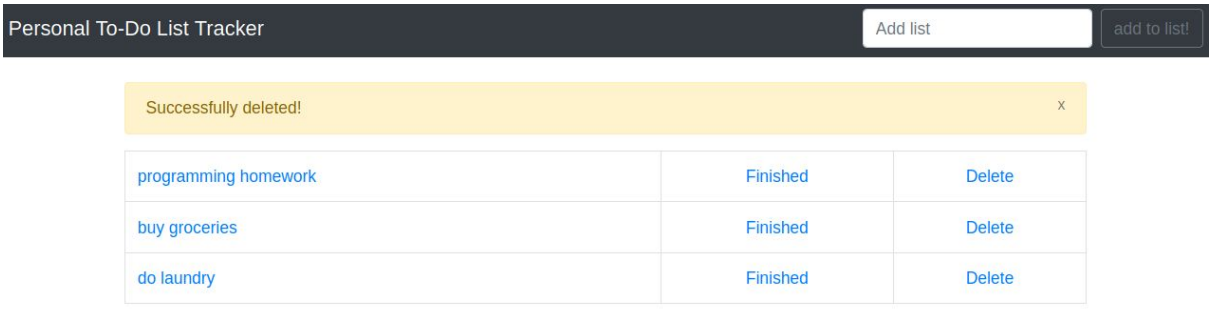

Diagram 6: The main page with the message "Successfully deleted!" when one task is deleted successfully.

Diagram 7 below shows the pop-up message of "List updated!" when the column of "Add list" is typed with the name of a new task and "Add to list" is clicked.

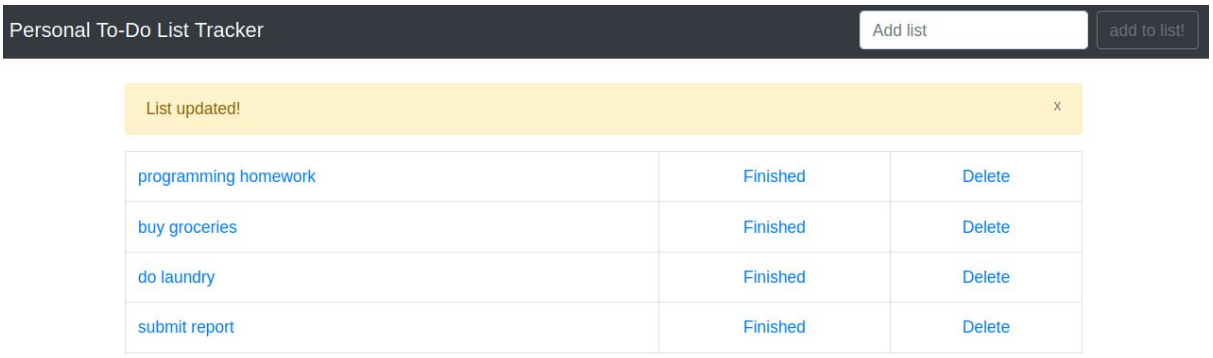

Diagram 7: The main page with the message "List updated!" when a new task is added successfully.

FINDINGS

Throughout this project development, there are several pieces of knowledge obtained that are such as the implementation of the python code in solving the real life problem. Besides, we are able to learn how to make use of a framework to develop a web-based application. Other than that, we are also able to work in a group by utilizing GitHub in project development.

RECOMMENDATIONS

This project is a successful project considering all of the objectives of this project are able to be achieved. However, there are more possible improvements that could be done for further project development in the future such as adding the timestamp and setting of deadlines for each of the tasks added in the To-Do list, providing choices of text style and background colour changing option, richer text features the alarm or alert system for each task deadline and so on.

CONCLUSION

In conclusion, this project is a successful project as the knowledge gained in Advanced Programming subject are able to be implemented in solving the industrial based problems and producing a web-based application. Besides, this project enables the students to carry out a programming task that can achieve web-based application. Hence, this project is a successful project. Due to a small range of time given to finish this assignment, there are only few features included. For further or future improvements, there are many other interesting features that could be added to make a small project become more efficient and beneficial for everyday's use.

REFERENCES

Github repository:

https://github.com/puteriffah/SMJE4383-assignment1

Webpage demonstration:

https://drive.google.com/file/d/1bpvJbI_9urUZtmDpQoBlvvaeBTSNEdeW/view?usp=drivesdk

Bootstrap sample for navbar:

https://getbootstrap.com/

Other references:

1. Python Virtual Environment: Introduction. (2020, November 27). Retrieved November 29, 2020, from https://www.geeksforgeeks.org/python-virtual-environment/
2. Django Web Development with Python Introduction. (2019,January 21). Retrieved November 29, 2020, from https://www.youtube.com/watch?v=yD0_1DPmfKM
3. Django. (n.d.). Retrieved November 29, 2020, from https://www.djangoproject.com/