

# Software Development Project for Final Exam

**Term: Fall 2023**

**Assignment Date: Nov 14<sup>th</sup>, 2023**

**Assignment Due Date: Nov 28<sup>th</sup>, 2023**

**This is a hard deadline, I have to log score before Dec 12<sup>th</sup>.**

## Project Submission Requirement

1. Zip your project and submit the zip. The zip should have your name like group\_name.zip.
  2. the zip file should contain all your python code, SQL Code, Javascript, CSS and a word document file which includes your screenshots, table design, your SQL code, primary keys, index, constraints.
  3. In your word file, you should include a youtube video, which is to explain the data table, filter filter for tax breakdown, CURD operation, controller, UI features. Why you design table like that, and what is the unique field, what is primary key, what are indexes and why.
  4. Your word document should include a github public repository to show me the code, and I can checkout and validate your code.
  5. We will be dividing all students into 6 groups, roughly each group 4-5 people.
- \* All the students are working on these requirements, and divide the work.

\* Try to use github, and do a code sharing with the team. Each team should have a **name for your team and this is your zip file name** and submit as team members to me in in-canvas email. Note, please do not send to my montclair email.

## Business Requirement

\* We will build a tax and payment tracking system for small companies such as LLC, C Corporate or S Corporate to use.

\* Tech stack will include user microservice pattern, including one python flask server for endpoint, which suffice that,

1/ http endpoint of post to write/insert records to table.

2/ view all records of tax payment of the year.

3/ CRUD operations in UI, including insert, save, update and delete.

4/ Database we will use sqlite for simplicity. (SQL should be similar to MySQL or Postgresl)

## Project Description

1/ Assuming that we have a LLC company, and every year we will have to make payment to NJ State tax office online.

2/ We try to develop is to help LLC to track and calculate the tax they have paid and save it to the database system.

3/ The web UI will help us display and insert values to the database table(s).

4/ Every year, the estimated payments are due four times a year on the following dates: April 15, June 15, September 15, and January 15 of the following year. The following is a table to help you understand how this works,

### Tax breakdown by due date

id	Company	Amount	Payment date	Status	Due date
1	derm	4100	09/26/2023	paid	
2	derm	4100	10/12/2023	paid	
3	tek	15,200	06/09/2023	paid	
4	tek	15,200	07/12/2023	paid	
5	tek	11,400	08/11/2023	paid	
6	tek	14,440.00	09/21/2023	paid	

7	tek	15,200	10/18/2023	paid	
8	tek	23,520.00	NA	unpaid	
9	tek	16,800.00	NA	unpaid	
10	tek	16,800.00	NA	unpaid	
11	tek	16,800.00	NA	unpaid	

## UI Requirement (45 points)

1/ There should be an html form to have the above columns (html text field for each column except the internal id). One extra column in the form for operations, such as edit, then it will pop up a view to edit and save (This is the update feature). And a delete link, for any deletion, we will need to confirm, pop up and window to allow user to confirm then delete it from database. **(The popup box will be 5 points out of 100 points)**

2/ The due date is a html dropdown list of the following date, April 15, June 15, September 15, and January 15. User who uses our system will have the responsibility to choose one of these four dates. This is from tax office and would not likely to change. The due date is a mandatory field, otherwise we do not allow user to submit. Please pay attention that, the January 15<sup>th</sup> is the next year, not the current year, so you have to generate the dropdown list smartly based on the system time of the current year, **please do not hard code the year but instead generating the year dynamically. (This feature is 10 points out of 100 points)**

3/ There should be a save button so that it can be saved.

4/ Once the saved button is clicked, the page should be automatically refreshed in the same page to display all. If the page is vertically very long, we should allow vertical bar in html div. This is a grading points. **(This feature is 10 points out of 100 points)**

5/ We should have a dynamic view, a HTML DIV to show a table summary. This is a separate table for showing by the due date, we need to calculate all the amounts including paid or unpaid amounts, display each fields, and the total amount. Considering this as a filtering features. (Say I select due by June 15, and I can see the breakdown of transactions including the paid and unpaid amounts). Please see details in the following requirement. We should refresh the page without clicking a button and it should refresh immediately after I select the due date dropdown list item. **(This feature is 10 points out of 100 points)**

6/ Tax rate field. This is a html text field to allow user to enter the tax rate in decimal point, such as 0.06 which means 6%. And you will apply calculation of the tax due. The filter features is illustrated by the following tables. **(This is 10 points out of 100 points)**

An example to illustrate this, if I entered the results in the following order, and I put the due date from the UI. Let us call it “Data Table”

id	Company	Amount	Payment date	Status	Due date
1	derm	4100.00	09/26/2023	paid	01/15/2024
2	derm	4100.00	10/12/2023	paid	01/15/2024
3	tek	15,200.00	06/09/2023	paid	06/15/2023
4	tek	15,200.00	07/12/2023	paid	09/15/2023
5	tek	11,400.00	08/11/2023	paid	09/15/2023
6	tek	14,440.00	09/21/2023	paid	01/15/2024
7	tek	15,200.00	10/18/2023	paid	01/15/2024
8	tek	23,520.00	NA	unpaid	01/15/2024
9	tek	16,800.00	NA	unpaid	01/15/2024
10	tek	16,800.00	NA	unpaid	01/15/2024
11	tek	16,800.00	NA	unpaid	01/15/2024

Now if in the HTML DIV of summary, let us call this section “Tax Table”. Now in the filter feature,

\* In the dropdown of 04/15/2023, it should show nothing as there is no income made that is due on 04/15/2023. Show me an empty table with just table header.

id	Company	Amount	Payment date	Status	Due date
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\* In the dropdown of 06/15/2023, it should show me,

id	Company	Amount	Payment date	Status	Due date
3	tek	15,200.00	06/09/2023	paid	06/15/2023
<b>Total Amount</b>					\$15,200.00
<b>Tax Rate:</b>					6%
<b>Tax Due:</b>					\$912

\* In the dropdown of 09/15/2023, it should show me,

id	Company	Amount	Payment date	Status	Due date
4	tek	15,200.00	07/12/2023	paid	09/15/2023
5	tek	11,400.00	08/11/2023	paid	09/15/2023
<b>Total Amount</b>					\$26,600.00

<b>Tax Rate:</b>	6%
<b>Tax Due:</b>	\$1,596

\* In the dropdown of 01/15/2024, it should show me,

id	Company	Amount	Payment date	Status	Due date
1	derm	4100.00	09/26/2023	paid	01/15/2024
2	derm	4100.00	10/12/2023	paid	01/15/2024
6	tek	14,440.00	09/21/2023	paid	01/15/2024
7	tek	15,200.00	10/18/2023	paid	01/15/2024
8	tek	23,520.00	NA	unpaid	01/15/2024
9	tek	16,800.00	NA	unpaid	01/15/2024
10	tek	16,800.00	NA	unpaid	01/15/2024
11	tek	16,800.00	NA	unpaid	01/15/2024
<b>Total Amount</b>					111760.00
<b>Tax Rate:</b>					6%
<b>Tax due:</b>					\$6705.6

## Documentation Requirements (30 points)

0/ Your group name, your group member's name. If anyone's name is missing, sorry. All of you are sharing the scores and will get the same scores, so please do not miss any points.

1/ Write a good word documentation of screenshots, your backend code connecting database, SQL schema, controllers and endpoints, list out all the APIs (10 points)

2/ Github link (5 points)

3/ Youtube video link and explanations (15 points)

## Source Code Requirement (25 points)

\* Source code of Python, SQL, Html, Javascript and CSS (25 points). If just above 3 items provide and missing any code, 25 will be lost.

\* Tech stack for Javascript, JQuery is preferred, or you could use vanilla javascript I could also accept it.