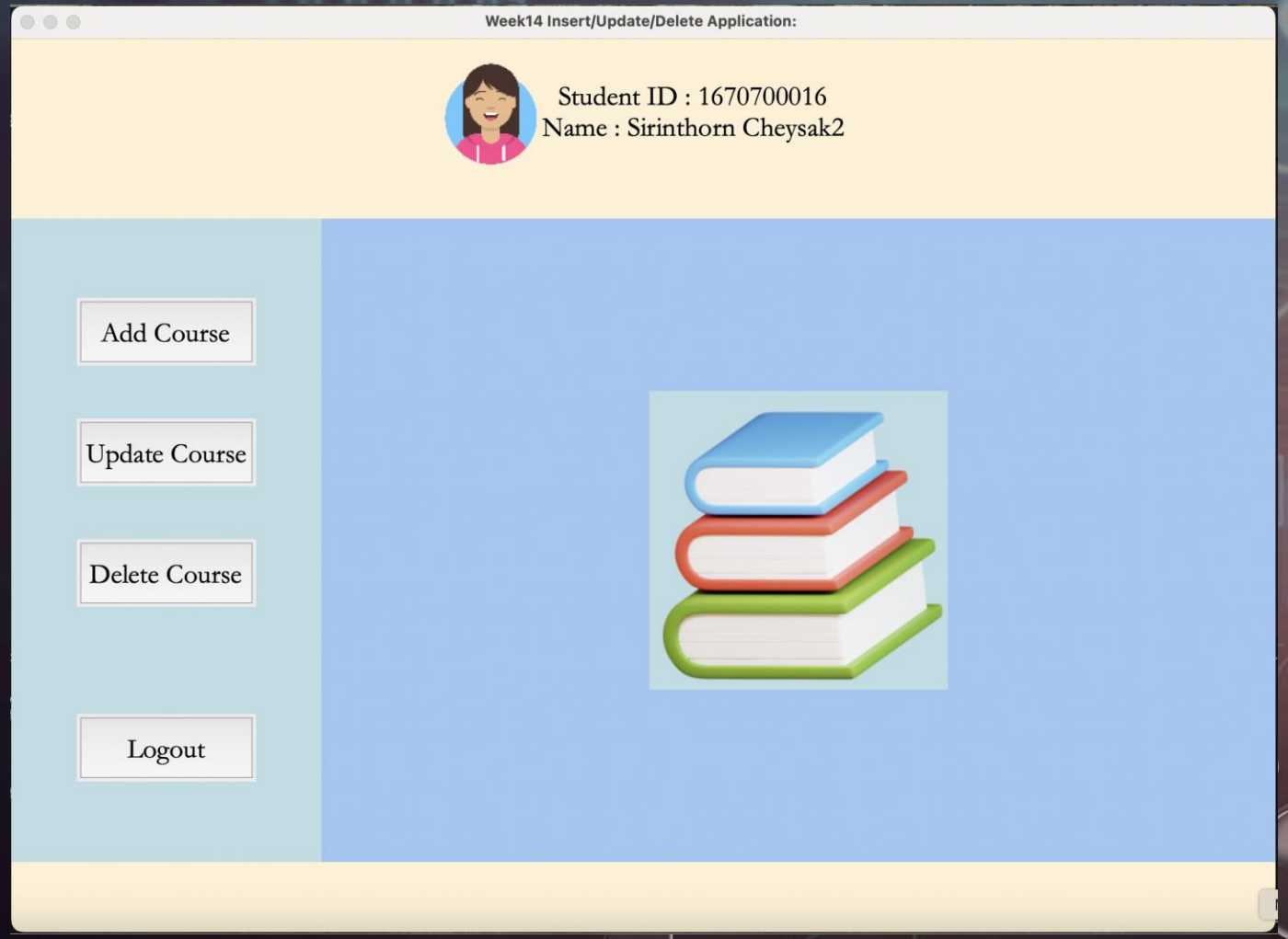
Python GUI using SQLite Conclusion

CS311: Computer Programming II
ผู้ช่วยศาสตราจารย์สิรินธร จียาศักดิ์

OUTCOME OF THIS WEEK



SQLite
Database

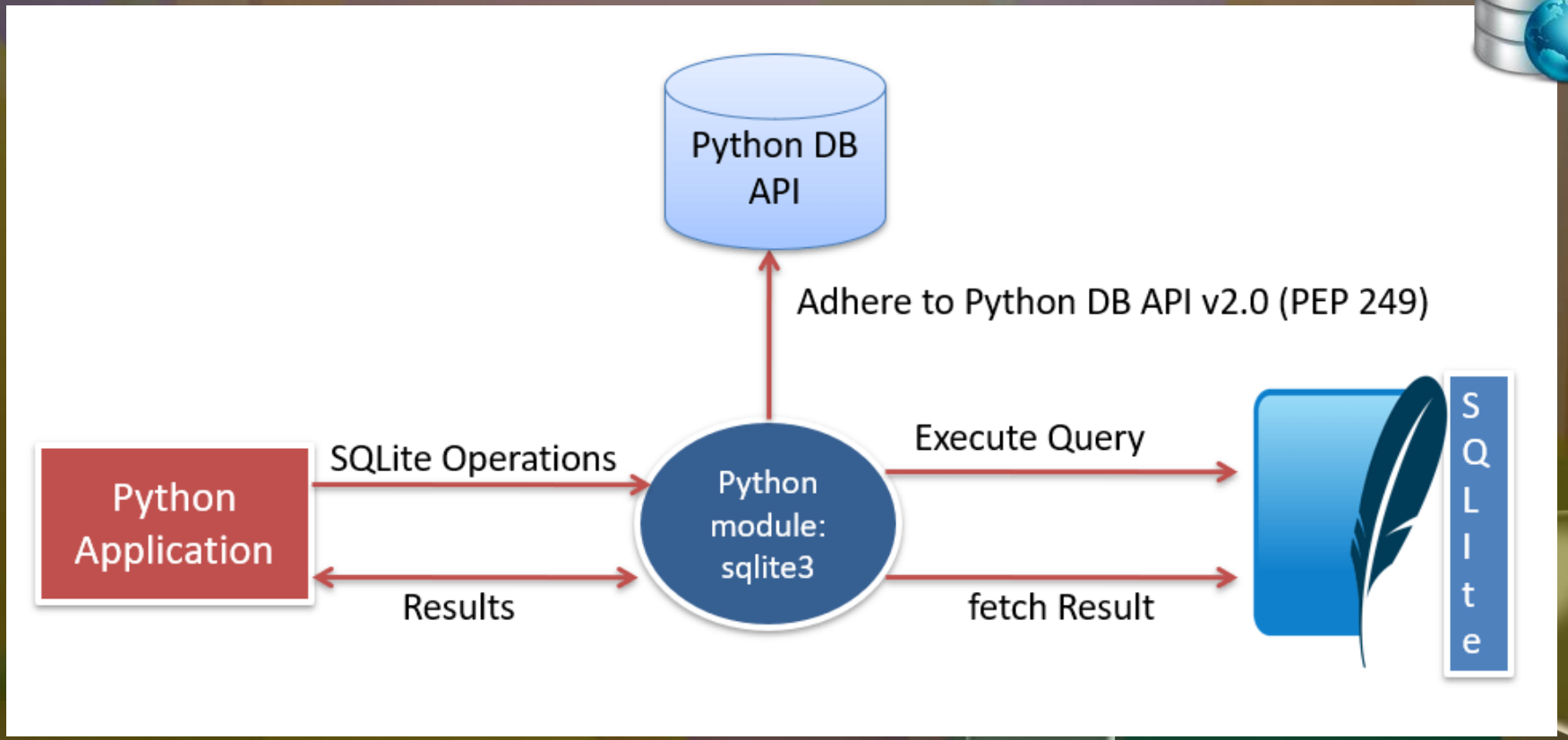
Python
DB API

AGENDA

1. Creating a Connection Steps
2. SQL for Insert, Update and Delete Existing Data
3. Class Activity of the Week

1 Creating a Connection Steps

PYTHON SQLITE CONNECTION ARCHITECTURE



https://pynative.com/python-sqlite/

STEPS OF CONNECTING SQLITE DB

1. **IMPORT SQLITE3 MODULE.** USING THE THE SQLITE3 MODULE TO COMMUNICATE WITH THE SQLITE DATABASE.
2. **USE THE CONNECT().** THIS METHOD RETURNS THE SQLITE CONNECTION OBJECT IF THE CONNECTION IS SUCCESSFUL.
3. **USE THE CURSOR() METHOD.** A CURSOR OBJECT TO EXECUTE SQLITE COMMAND/QUERIES FROM PYTHON.
4. **DEFINE A SQL QUERY.** NEXT, PREPARE A SQL QUERY TO MANAGE DATA TABLE.
5. **USE THE EXECUTE() METHOD.** THE EXECUTE() METHODS RUN THE SQL QUERY AND RETURN THE RESULT.
6. **COMMIT YOUR CHANGES.** USING THE **COMMIT()** OF A CONNECTION CLASS.
7. **VERIFY RESULT USING THE SQL SELECT QUERY.** IF REQUIRED, EXECUTE SQLITE SELECT QUERY FROM PYTHON TO SEE THE NEW CHANGES.
8. **CLOSE** CURSOR AND CONNECTION OBJECTS

2 Insert a New Record into a table

SQL STATEMENT FOR INSERTING

- The **insert into statement** is used to insert new records in a table.

- Syntax :

```
INSERT INTO tablename
VALUES (value1, value2, value3, ...);
```

```
INSERT INTO tablename (column1, column2, column3, ...)
VALUES (value1, value2, value3, ...);
```

2 Update Existing records in a table

SQL UPDATE STATEMENT

- THE UPDATE STATEMENT. TO UPDATE EXISTING DATA IN A TABLE, YOU USE SQLITE UPDATE STATEMENT.
- SYNTAX :

```
UPDATE tablename
SET column_1 = new_value_1,
    column_2 = new_value_2
WHERE search_condition;
```

https://www.sqlitetutorial.net/sqlite-update/

2 Delete Existing records in a table

SQL DELETE STATEMENT

- THE DELETE STATEMENT. TO DELETE EXISTING DATA IN A TABLE, YOU USE SQLITE DELETE STATEMENT.
- SYNTAX :

```
DELETE FROM tablename WHERE search_condition;
```

https://www.sqlitetutorial.net/sqlite-update/

2 Python SQLite

Steps to managing a table

STEPS TO UPDATE EXISTING DATA TABLE

1. **IMPORT SQLITE3 MODULE.** USING THE THE SQLITE3 MODULE TO COMMUNICATE WITH THE SQLITE DATABASE.
2. **USE THE CONNECT().** THIS METHOD RETURNS THE SQLITE CONNECTION OBJECT IF THE CONNECTION IS SUCCESSFUL.
3. **USE THE CURSOR() METHOD.** A CURSOR OBJECT TO EXECUTE SQLITE COMMAND/QUERIES FROM PYTHON.
4. **DEFINE A SQL UPDATE QUERY OR INSERT QUERY OR DELETE QUERY.** FOR EXAMPLE, UPDATE TABLE_NAME SET COLUMN1 = VALUE1, COLUMN2 = VALUE2…., COLUMNN = VALUEN WHERE [CONDITION];
5. **USE THE EXECUTE() METHOD.** THE EXECUTE() METHODS RUN THE SQL QUERY AND RETURN THE RESULT.
6. **COMMIT YOUR CHANGES.** USING THE **COMMIT()** OF A CONNECTION CLASS.
7. **VERIFY RESULT USING THE SQL SELECT QUERY.** IF REQUIRED, EXECUTE SQLITE SELECT QUERY FROM PYTHON TO SEE THE NEW CHANGES.
8. **CLOSE** CURSOR AND CONNECTION OBJECTS

STEPS TO UPDATE EXISTING DATA TABLE

- USING PARAMETER IN SQL COMMAND

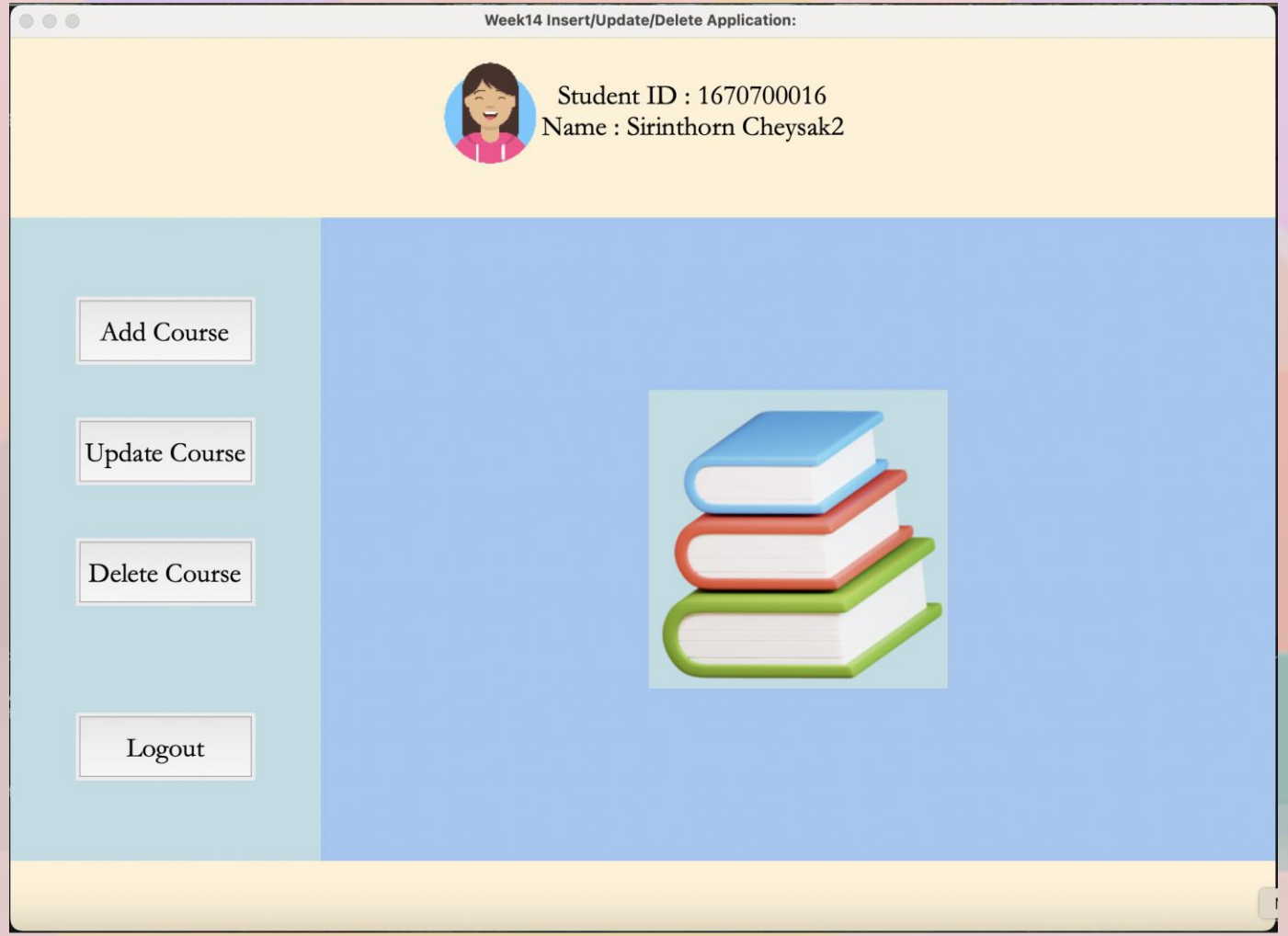
```
sql = '''update student
        set password=?
        where username=?;'''

cursor.execute(sql,[newpwd.get(),userentry.get()])
conn.commit()
```

COMMIT() METHOD

CONNECTION.COMMIT()

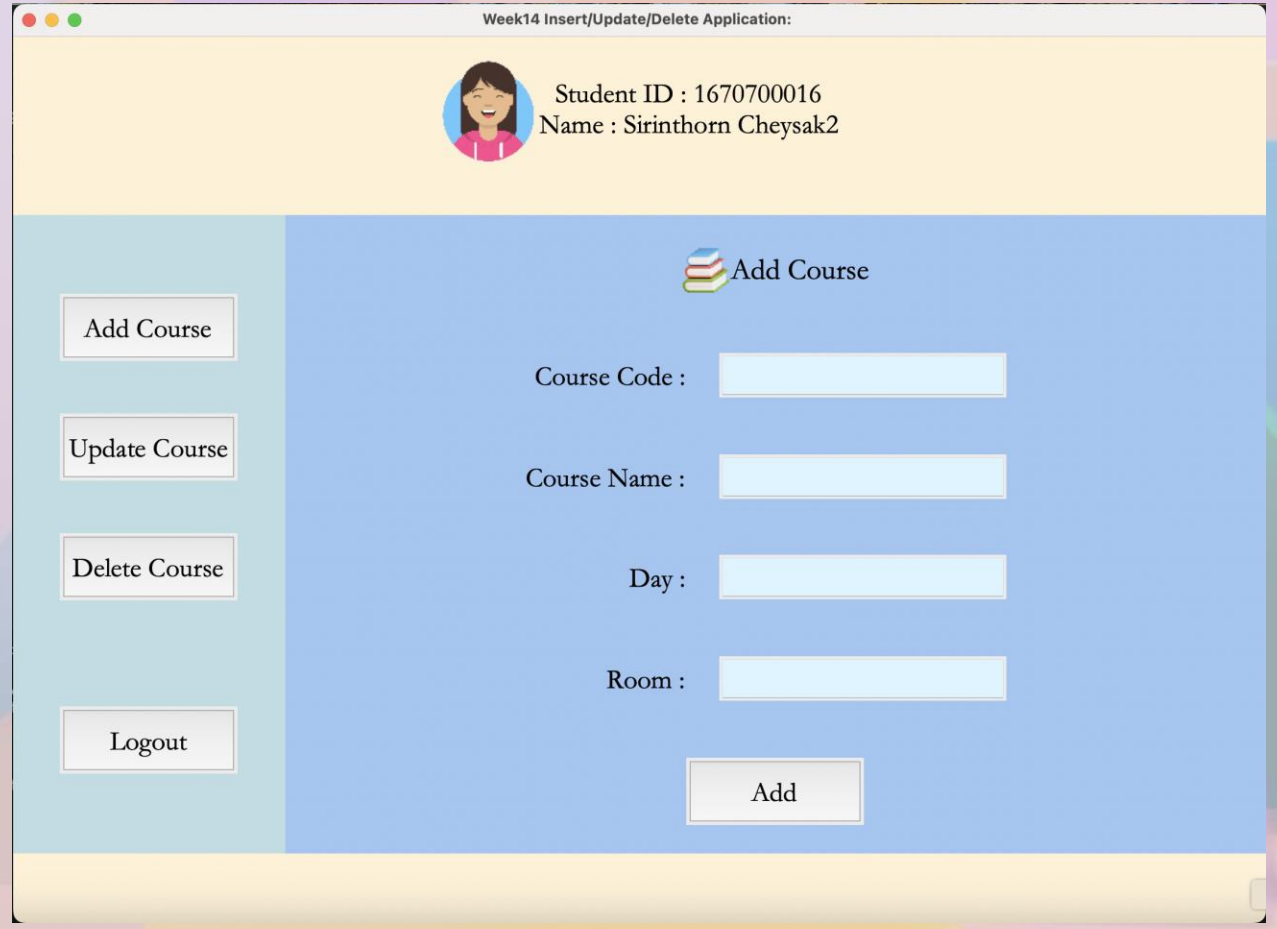
- THIS METHOD COMMITS THE CURRENT TRANSACTION. IF YOU DON'T CALL THIS METHOD, ANYTHING YOU DID SINCE THE LAST CALL TO COMMIT() IS NOT VISIBLE FROM OTHER DATABASE CONNECTIONS.

Class Activity of Week13



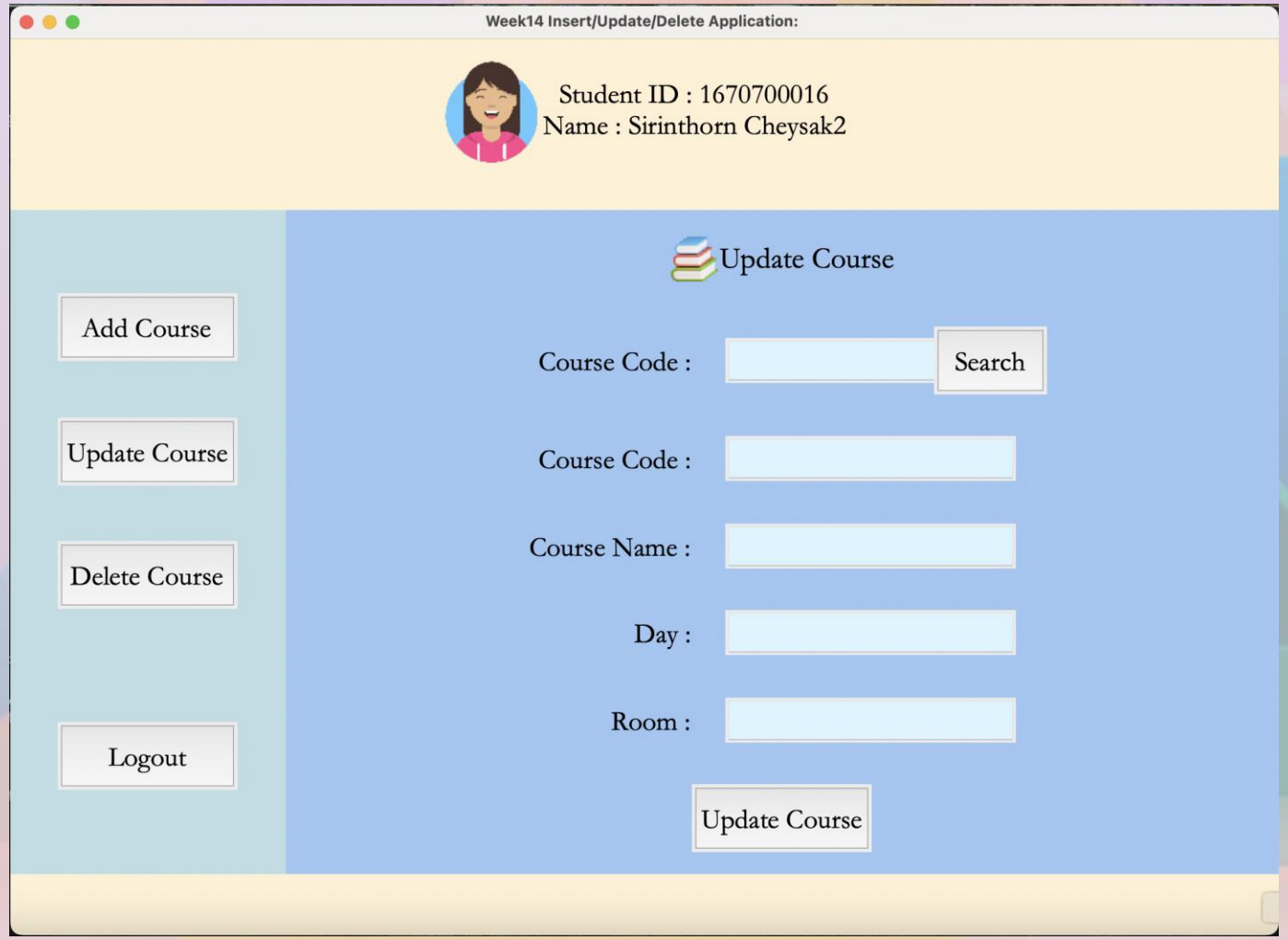
Python Gui Application

Class Activity of Week13



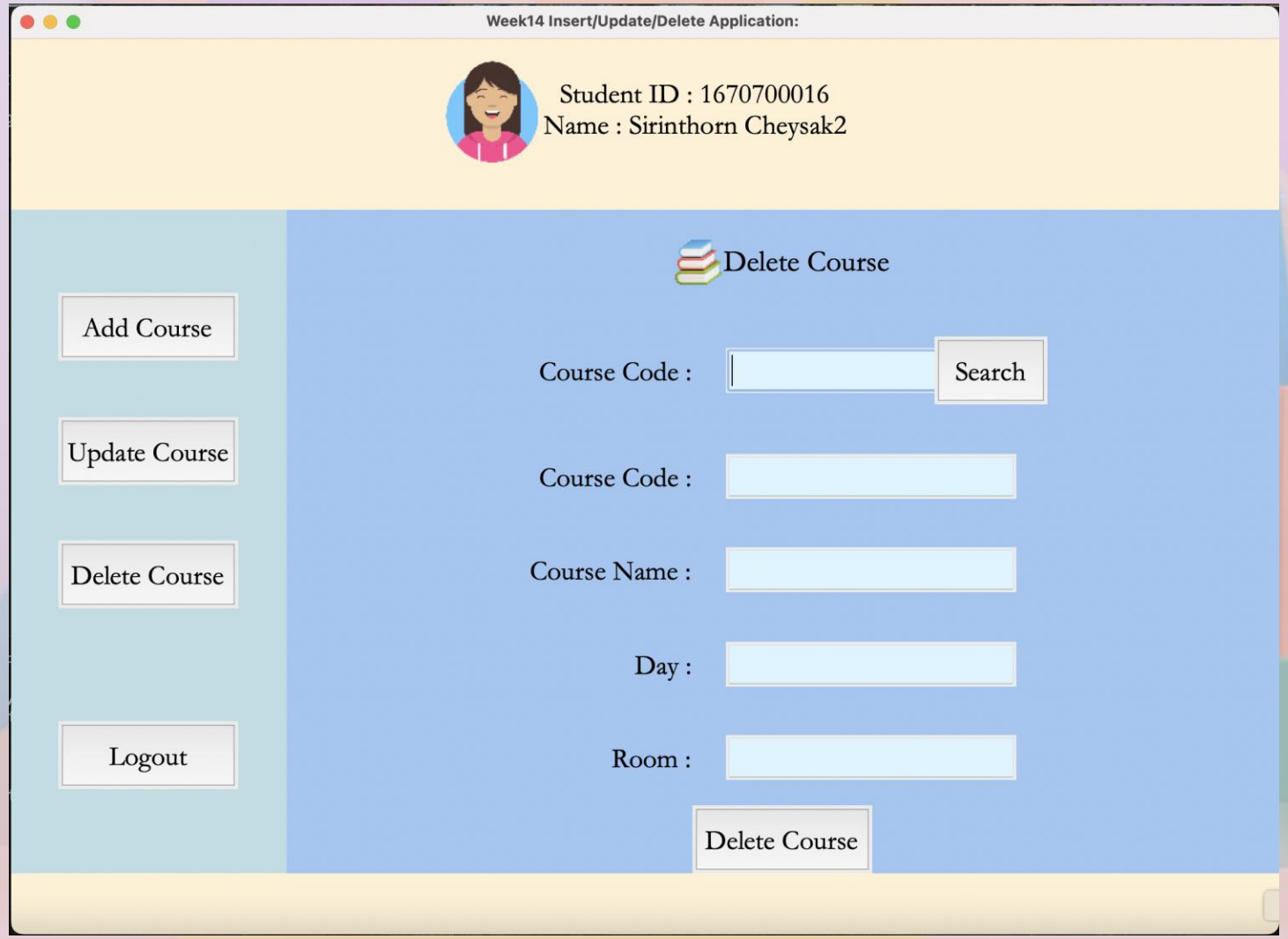
Add Course

Class Activity of Week13



Update Course

Class Activity of Week13



Delete Course

See you

At final examination