5. Python SQLite Game Shop Tutorial - Update

Contents

- Follow all directions carefully and accurately.
- Think of the directions as minimum requirements.

SQL Tutorials

- https://www.w3schools.com/sql/sql_update.asp

SQLite with Python Tutorials

- SQLite Databases with Python - Full Course – FreeCodeCamp.org
- https://www.sqlitetutorial.net

Explanation: Updating Data

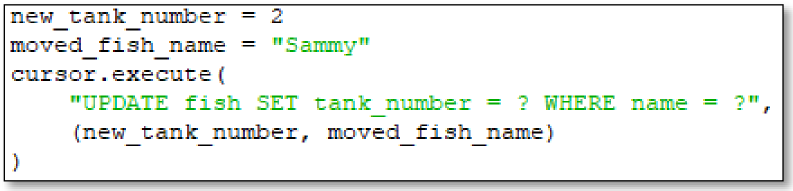
Rows in an SQLite database can be modified using **UPDATE** SQL statement. We can update single columns as well as multiple columns.

This is the general form to update existing table data.

```
UPDATE table_name SET column1 = value1, column2 = value2 WHERE condition;
```

In the above syntax, the **SET** statement is used to set new values to the column. The **WHERE** clause is used to select the rows for which the columns are needed to be updated.

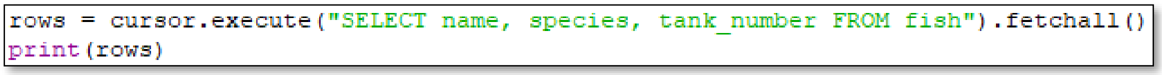
Let’s say, for example, that Sammy the shark was moved to tank number 2. We can change Sammy’s row in the fish table to reflect this change:



```
new_tank_number = 2
moved_fish_name = "Sammy"
cursor.execute(
    "UPDATE fish SET tank_number = ? WHERE name = ?",
    (new_tank_number, moved_fish_name)
)
```

1. We issue an **UPDATE** SQL statement to change the **tank_number** of Sammy to its new value of 2.
2. The **WHERE** clause in the **UPDATE** statement ensures we only change the value of **tank_number** if a row has name = "Sammy".

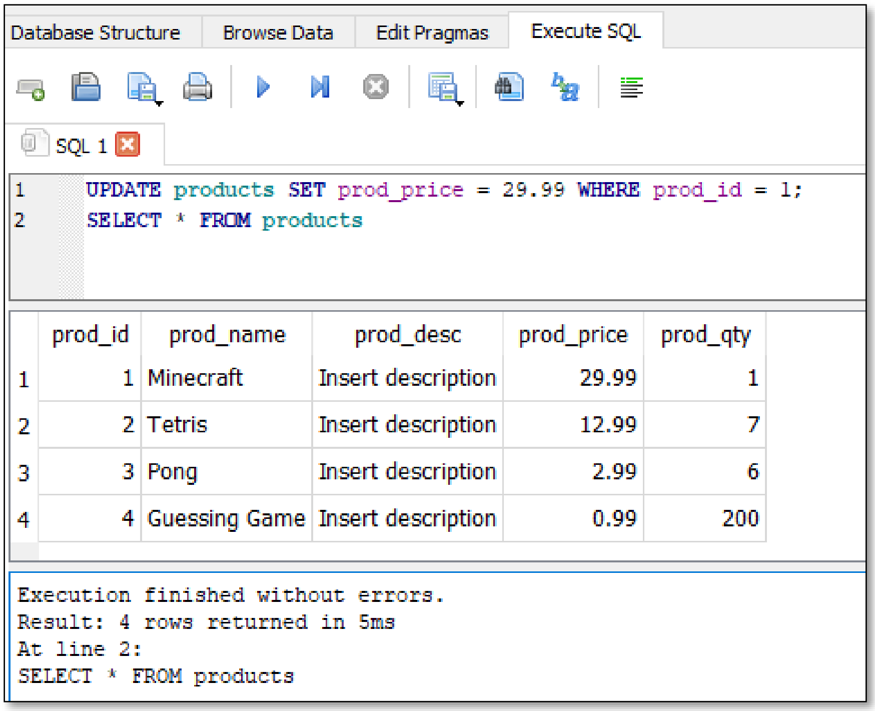
If we run the following **SELECT** statement, we can confirm our update was made correctly:



```
rows = cursor.execute("SELECT name, species, tank_number FROM fish").fetchall()
print(rows)
```

Tutorial 1: Update Data with DB Browser for SQLite

1. Copy **game_shop_4.db** to **game_shop_5.db**
2. In **DB Browser for SQLite** → Open Database **game_shop_5.db**
3. Go to the **Execute SQL** tab.
4. Insert and execute the following SQL code.
   We are running 2 statements, we need a ; at the end of the first statement.



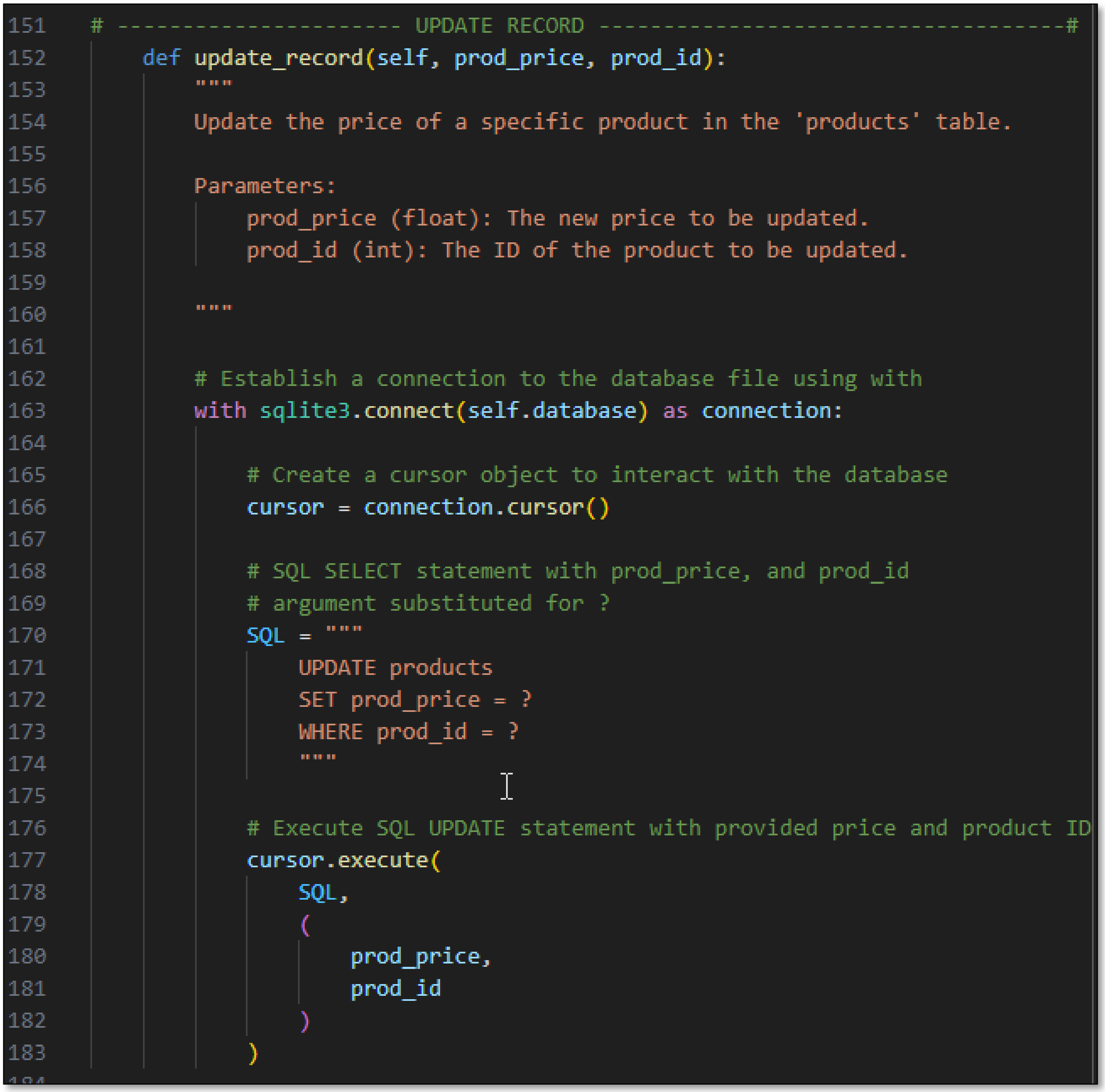
```
UPDATE products SET prod_price = 29.99 WHERE prod_id = 1;
SELECT * FROM products
```

	prod_id	prod_name	prod_desc	prod_price	prod_qty
1	1	Minecraft	Insert description	29.99	1
2	2	Tetris	Insert description	12.99	7
3	3	Pong	Insert description	2.99	6
4	4	Guessing Game	Insert description	0.99	200

```
Execution finished without errors.
Result: 4 rows returned in 5ms
At line 2:
SELECT * FROM products
```

Tutorial 2: Update Records in Python

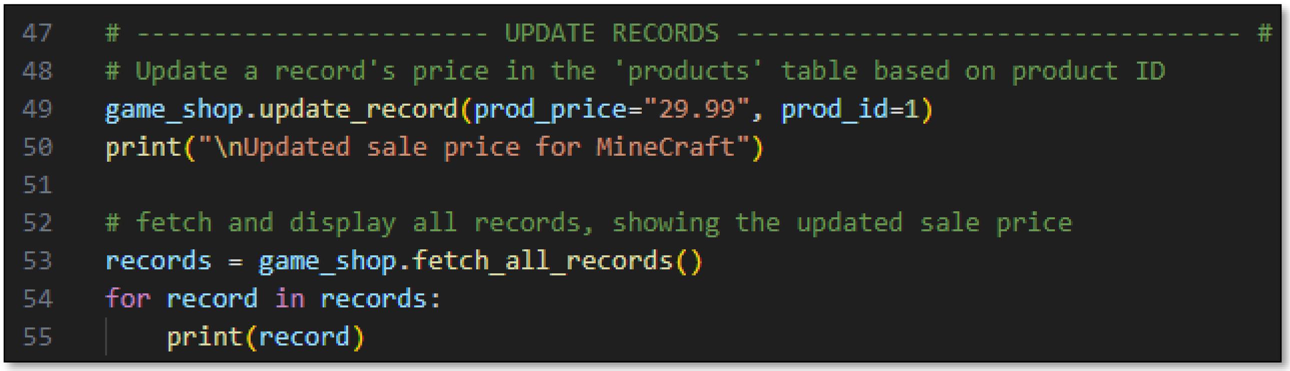
Add the following code to **db_controller.py** to update a record.



```
# ---------------------- UPDATE RECORD ------------------------------------#
    def update_record(self, prod_price, prod_id):
        """
        Update the price of a specific product in the 'products' table.

        Parameters:
            prod_price (float): The new price to be updated.
            prod_id (int): The ID of the product to be updated.

        """

        # Establish a connection to the database file using with
        with sqlite3.connect(self.database) as connection:

            # Create a cursor object to interact with the database
            cursor = connection.cursor()

            # SQL SELECT statement with prod_price, and prod_id
            # argument substituted for ?
            SQL = """
                UPDATE products
                SET prod_price = ?
                WHERE prod_id = ?
                """

            # Execute SQL UPDATE statement with provided price and product ID
            cursor.execute(
                SQL,
                (
                    prod_price,
                    prod_id
                )
            )
```

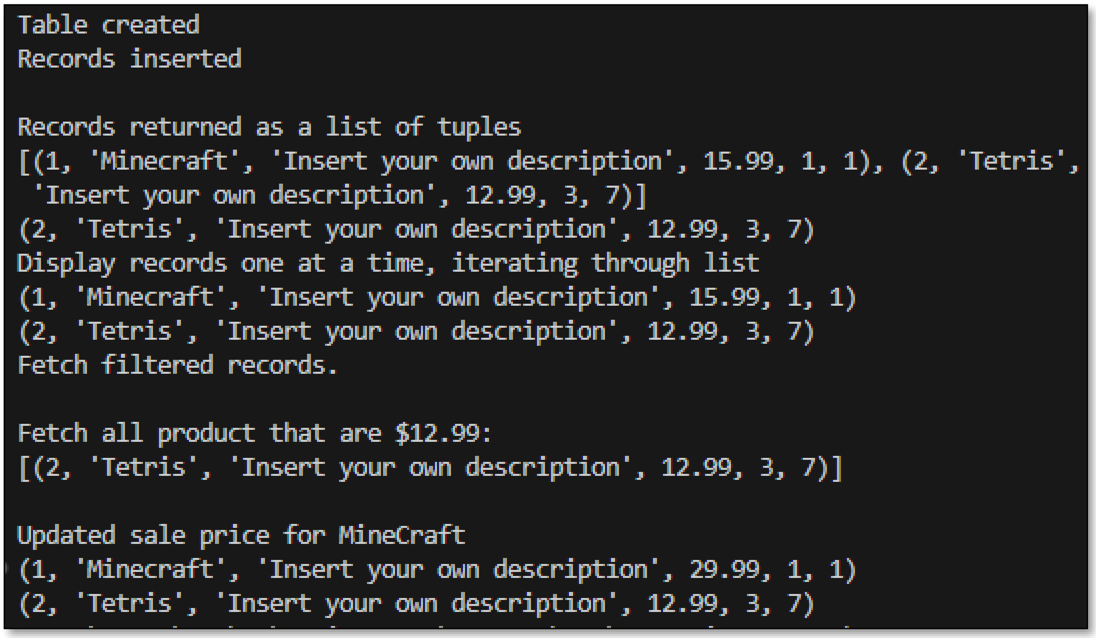
3. Copy **sql_4_tutorial_select.py** to **sql_5_tutorial_update.py**

4. Add the following code.



```python
# ----------------------- UPDATE RECORDS --------------------------------- #
# Update a record's price in the 'products' table based on product ID
game_shop.update_record(prod_price="29.99", prod_id=1)
print("\nUpdated sale price for MineCraft")

# fetch and display all records, showing the updated sale price
records = game_shop.fetch_all_records()
for record in records:
    print(record)
```

Example run:



```
Table created
Records inserted

Records returned as a list of tuples
[(1, 'Minecraft', 'Insert your own description', 15.99, 1, 1), (2, 'Tetris',
 'Insert your own description', 12.99, 3, 7)]
(2, 'Tetris', 'Insert your own description', 12.99, 3, 7)
Display records one at a time, iterating through list
(1, 'Minecraft', 'Insert your own description', 15.99, 1, 1)
(2, 'Tetris', 'Insert your own description', 12.99, 3, 7)
Fetch filtered records.

Fetch all product that are $12.99:
[(2, 'Tetris', 'Insert your own description', 12.99, 3, 7)]

Updated sale price for MineCraft
(1, 'Minecraft', 'Insert your own description', 29.99, 1, 1)
(2, 'Tetris', 'Insert your own description', 12.99, 3, 7)
```

Assignment Submission

1. Attach the program files.
2. Attach screenshots showing the successful operation of the program.
3. Submit in Blackboard.