Recipe app (CLI version)

Development process

October	2023

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01

Setting up the development environment

Skills used

Research

WHY WAS THIS STEP IMPORTANT

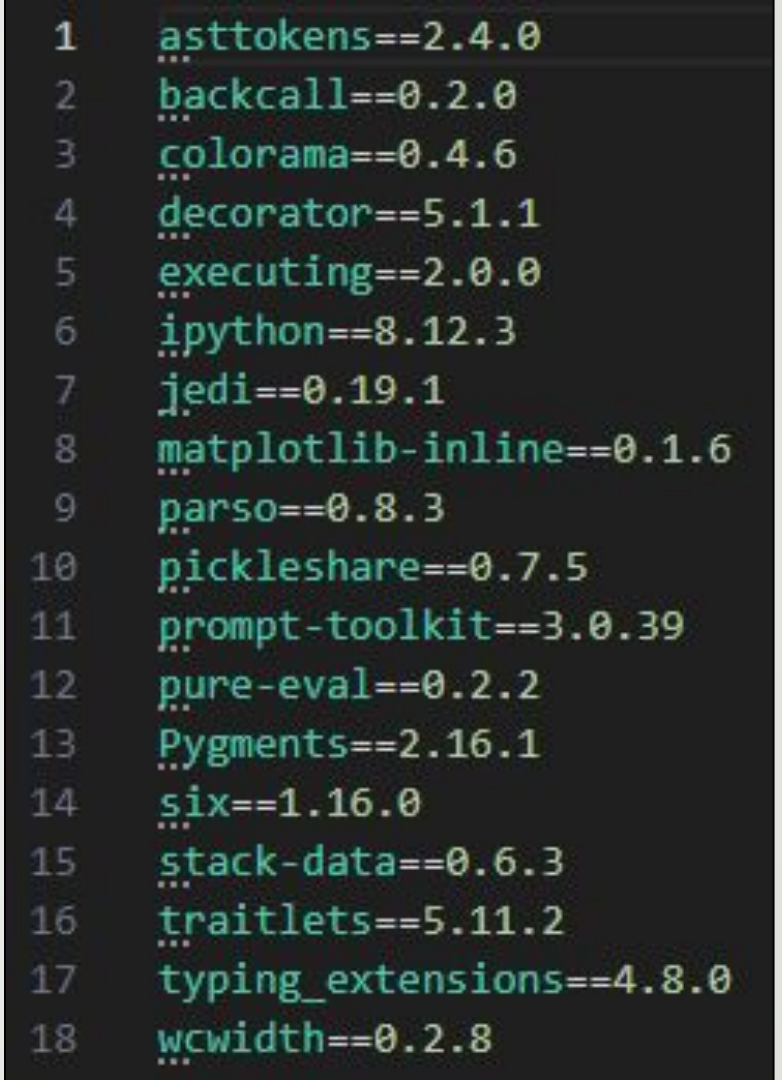
Organizing the development and the coding environment for efficient and well-oriented work from the beginning is one of the keys to ensure smooth workflow and limit avoidable time loss due to inefficient project initialization.

WHAT WAS THE GOAL

Setting up the development environment (to ensure the project is properly initialized). More precisely, I:

- Installed Python version 3.8.7
- Created a new virtual environment for the app
- Installed the IPython shell package
- Generated a requirements file
- Created the Github repository

REQUIREMENTS.TXT
FILE GENERATED



02

{OOP}

Applying object-oriented programming concepts

Skills used

Research
Problem-solving
Code writing
Debugging

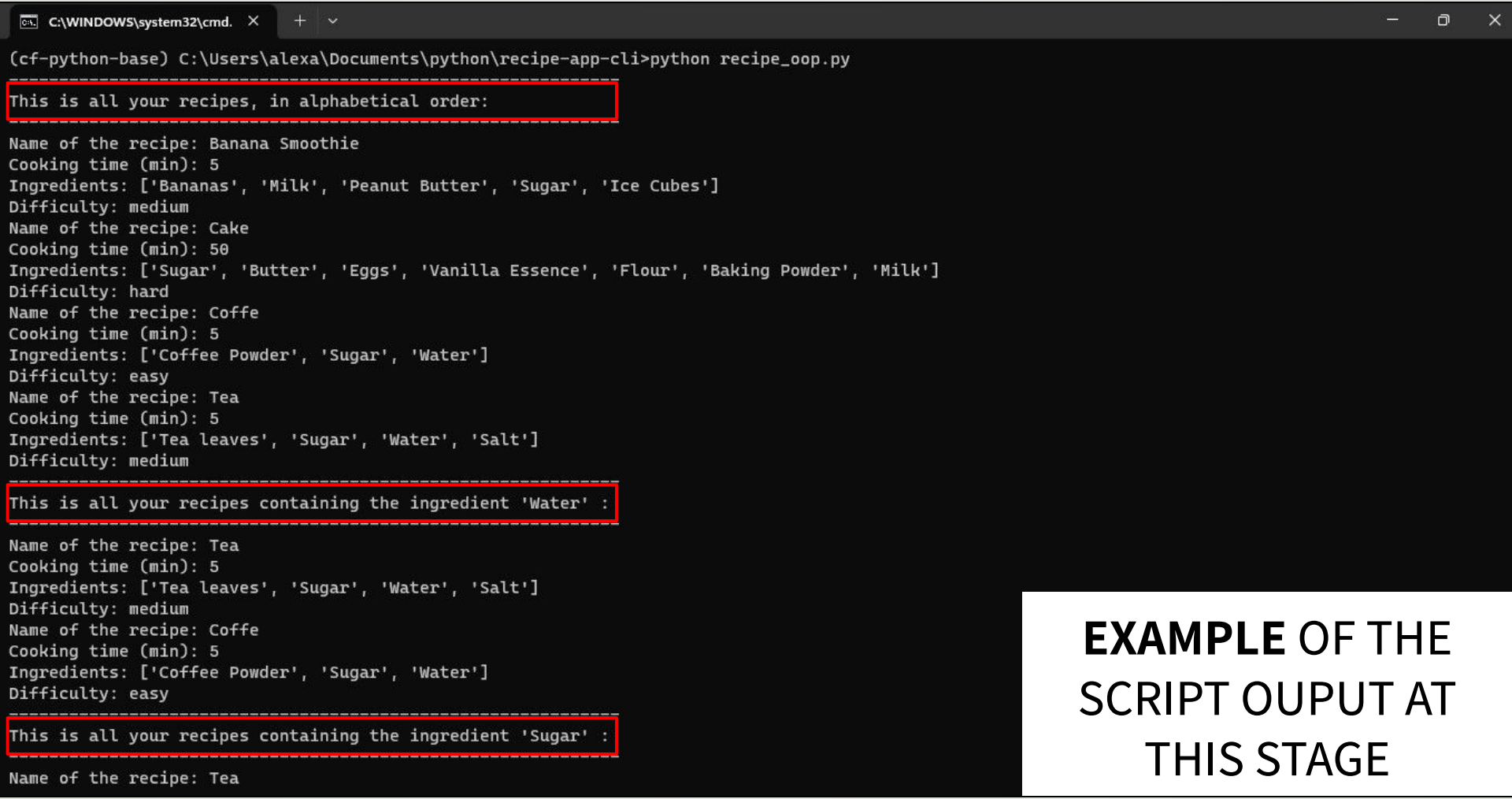
WHY WAS THIS STEP IMPORTANT

Storing recipes as objects with their own data attributes and custom methods can make scripts more efficient and concise, which represent an advantage both for the app execution and code writing.

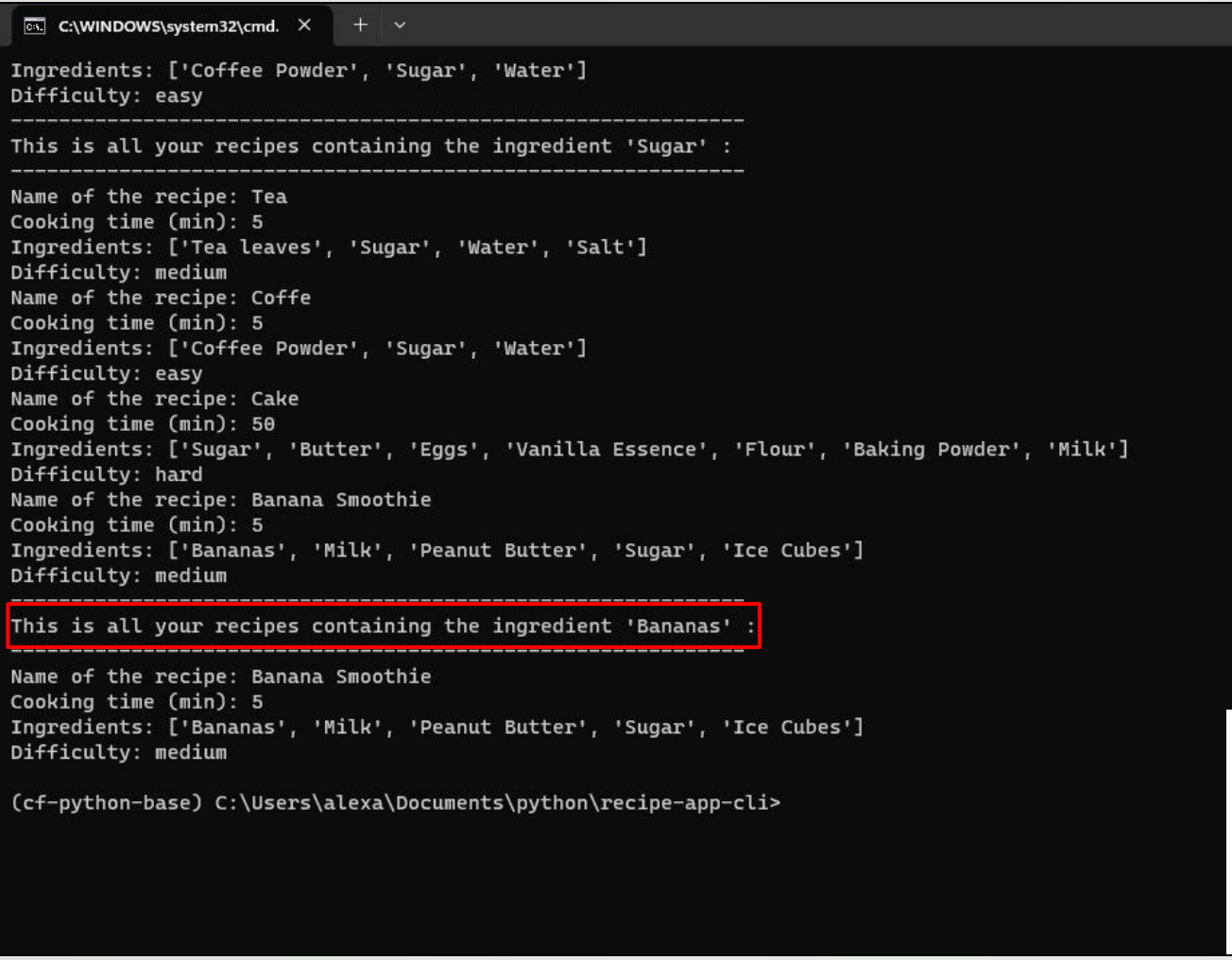
WHAT WAS THE GOAL

In this step, I've worked mainly on three elements:

- Building a *Recipe* class with relevant data and procedural attributes. For example:
  - An initialization method that takes in the name for a recipe and initializes the other data attributes
  - A method that automatically calculates recipe difficulty based on users' inputs
  - A string representation that prints the entire recipe over a well formatted string
- Creating recipes using class methods
- Using these class methods to search for recipes according to specific ingredients



EXAMPLE OF THE SCRIPT OUPUT AT THIS STAGE



EXAMPLE OF THE SCRIPT OUPUT AT THIS STAGE

03

Creating the app main menu displaying all possible operations, and the function for each operation

Skills used

Research
Problem-solving
Coding
Debugging

WHY WAS THIS STEP IMPORTANT

This step was important to ensure that users can easily choose the operation they wish to perform when landing on the main menu, whether it is to create, read, search, edit or delete a recipe.

WHAT WAS THE GOAL

Implement the app' main menu to display to users the 5 possible options: creating a recipe, reading existing ones, searching for recipes based on ingredient(s), editing existing recipe or deleting one. More precisely, the goal was to:

- Implement the function and any supporting codes for each of the 5 options
- Implement a logic that launched the selected option from the main menu, and then allow users to go back to the main menu when done so they can perform other operations. A while loop has been used for this.

MAIN MENU PRESENTING ALL AVAILABLE OPTIONS

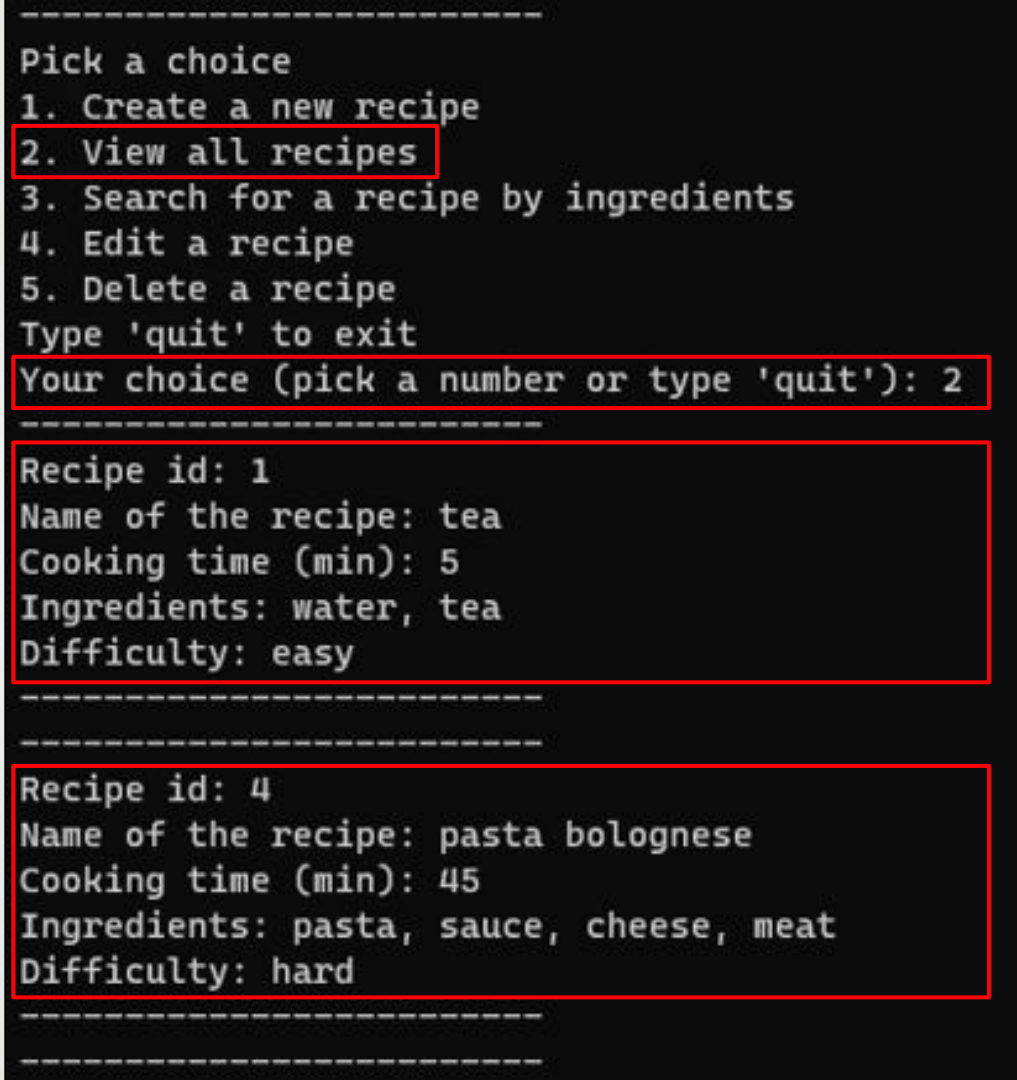
```
Main menu
-------------------------
Pick a choice
1. Create a new recipe
2. View all recipes
3. Search for a recipe by ingredients
4. Edit a recipe
5. Delete a recipe
Type 'quit' to exit
Your choice (pick a number or type 'quit'):
```

CODE FOR DISPLAYING MAIN MENU OPTIONS AND REDIRECTING ACCORDINGLY

```
while user_choice != "quit":
    print("Main menu")
    print("-" * 25)
    print("Pick a choice")
    print("1. Create a new recipe")
    print("2. View all recipes")
    print("3. Search for a recipe by ingredients")
    print("4. Edit a recipe")
    print("5. Delete a recipe")
    print("Type 'quit' to exit")
    user_choice = input("Your choice (pick a number or type 'quit'): ")

    if user_choice == "1":
        create_recipe()
        continue
    elif user_choice == "2":
        view_all_recipes()
        continue
    elif user_choice == "3":
        search_by_ingredients()
        continue
    elif user_choice == "4":
        edit_recipe()
        continue
    elif user_choice == "5":
        delete_recipe()
        continue
    elif user_choice.lower() == "quit":
        session.close()
        engine.dispose()
        break
    else:
```

EXAMPLE - **OPTION 2 SELECTED** (VIEW ALL RECIPES)



CODE FOR ‘VIEW ALL RECIPES’ OPTION

```
def view_all_recipes():
    try:
        recipes_list = session.query(Recipe).all()
        if not recipes_list:
            print("There are no recipes in the database, you'll therefore be brought back to the main
            return
        else:
            for recipe in recipes_list:
                print(recipe)

        next_action = input("When you want to back to the main menu, simply type 'back': ").lower()
        while next_action != "back":
            next_action = input("Seems like there's a typo. Type 'back' to return to the main menu: ")

        if next_action == "back":
            return

    except:
        print("Something went wrong.")
```

04

Creating a MySQL database and **linking it** to the script with SQLAlchemy

Skills used

Research
Problem-solving
Code writing
Debugging

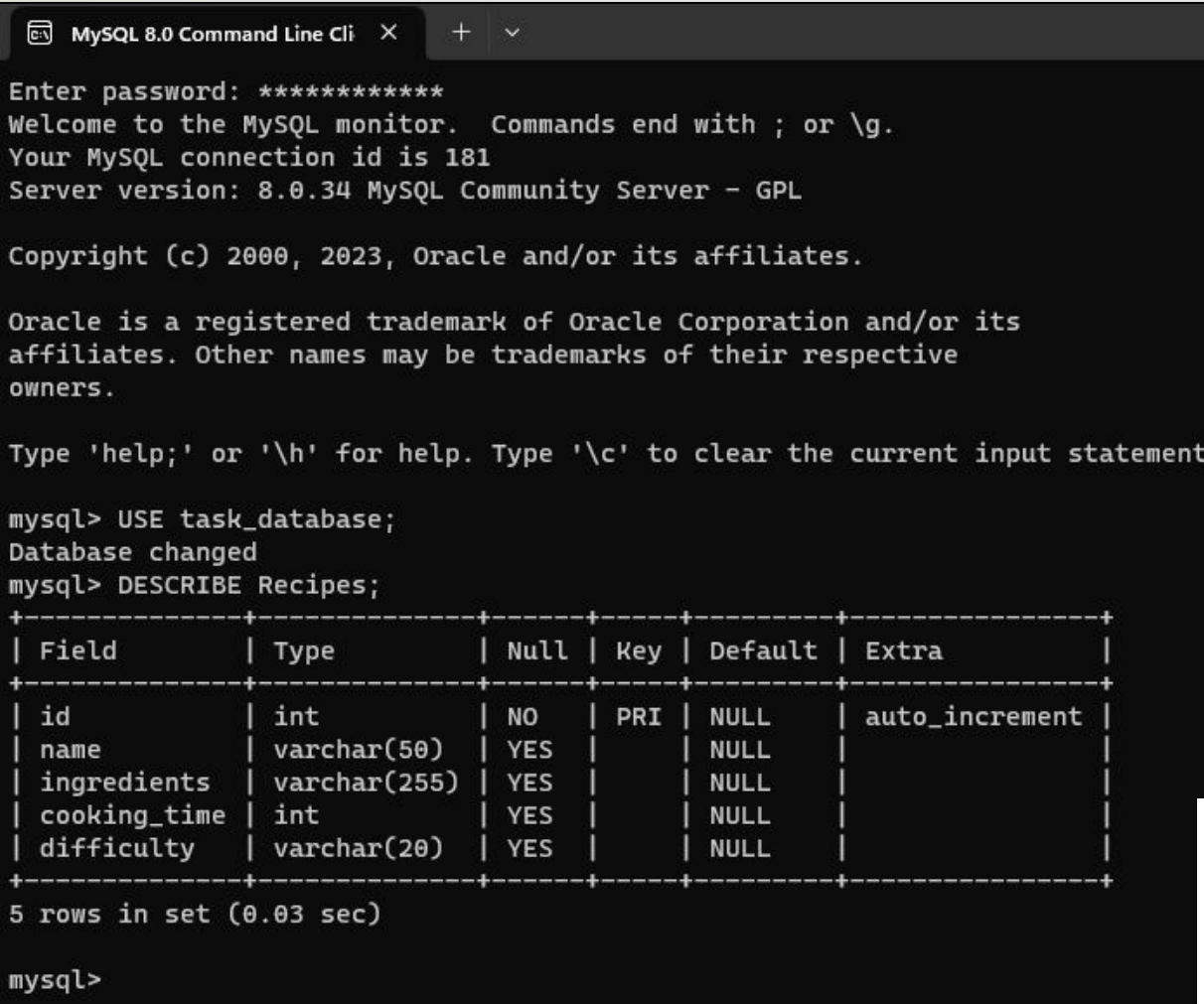
WHY WAS THIS STEP IMPORTANT

Databases have many advantages. They keep data in a standardized format so they can be stored and accessed more easily, they can be made secure through password access and its possible to access them using applications other than Python. Relational Database Management Systems (RDBMS) help to manage databases, and are therefore very useful, especially when dealing with large number of data.

WHAT WAS THE GOAL

Creating a MySQL database to store data for the Recipe app, and linking it to my script with SQLAlchemy. To do so, I:

- Installed MySQL
- Set up a new user via MySQL command line client (terminal-based interface), and grant it all permissions / privileges when working on databases and their tables
- Created a database in MySQL
- Created a table for the recipes in the created database, with appropriate columns (id, name, ingredients…)
- Set up SQLAlchemy, importing it in my script and connected it to the database
- Created an object from the *Session* class, to be able to change the database's contents using an OOP approach rather than SQL queries



MySQL DATABASE SET UP
(BEFORE CREATING ANY RECIPES IN IT)

05

Implementing error handling logic

Skills used

Research
Problem-solving
Code writing
Debugging

WHY WAS THIS STEP IMPORTANT

Some errors occurring when an app is running can prevent scripts from being executed. Even minor errors can make an entire application terminates unexpectedly, which is not ideal and can cause frustration to users. It is therefore crucial to ensure that this type of situation does not happen, by implementing the appropriate codes.

WHAT WAS THE GOAL

The goal was to implement codes inside the script to catch any possible input errors from users, and display a simple error message explaining how to fix the problem in a clear way, while preventing the application from crashing.

Following this, the code integrity had to be checked by testing each option in the menu (create, updating, search, etc.) with both expected and unexpected values, to see how the app behaves.

For example, if the application were asking users to pick from a set of numbers, and something random was typed like “yes”, it was essential to handle such a scenario to ensure the application would still run.

- To prevent any error to crash the application, *try-except* blocks have been used everywhere users can enter inputs and potentially lead to erroneous values.

EXAMPLE OF AN **INCORRECT INPUT AND ERROR MESSAGE**

```
-------------------------
Pick a choice
1. Create a new recipe
2. View all recipes
3. Search for a recipe by ingredients
4. Edit a recipe
5. Delete a recipe
Type 'quit' to exit
Your choice (pick a number or type 'quit'): Create recipe
Wrong input, please pick a number or type 'quit'.
Main menu
-------------------------
Pick a choice
1. Create a new recipe
2. View all recipes
3. Search for a recipe by ingredients
4. Edit a recipe
5. Delete a recipe
Type 'quit' to exit
Your choice (pick a number or type 'quit'):
```

06

Populating the database and **running** final tests

Skills used

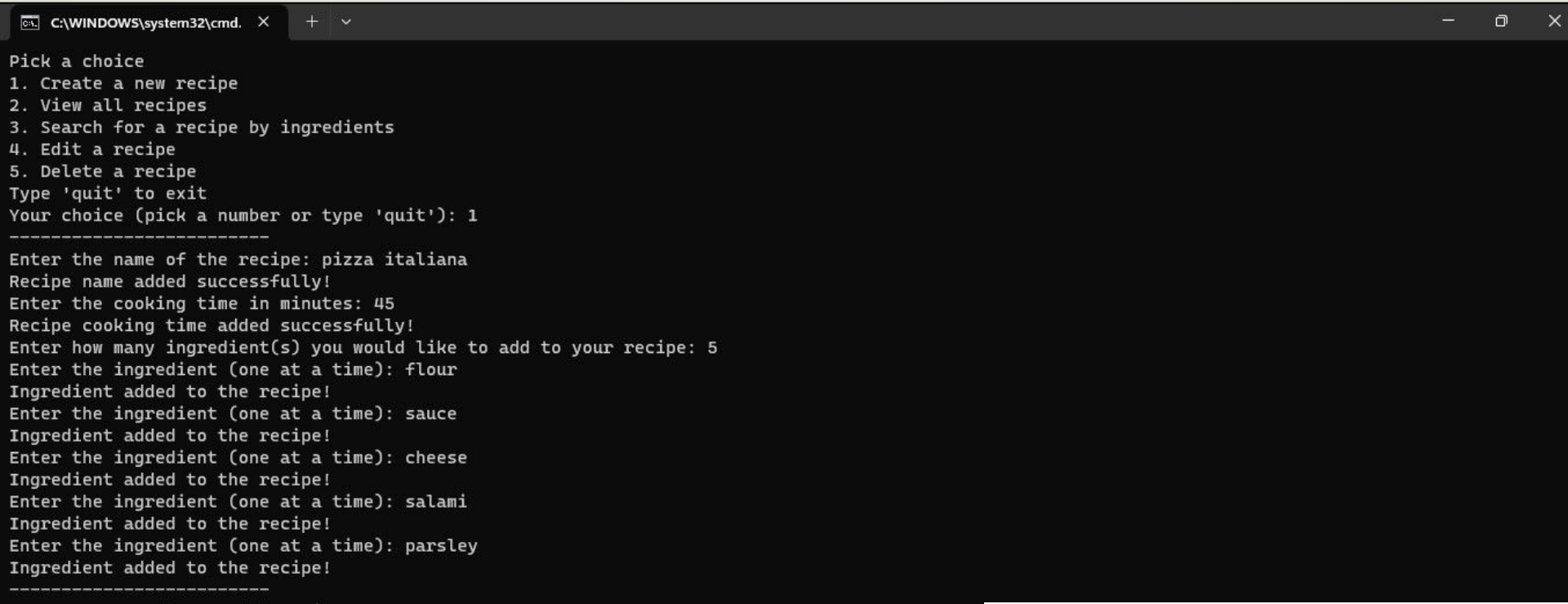
Problem-solving
Debugging

WHY WAS THIS STEP IMPORTANT

This step was important to simulate the final product with which users would interact, and to validate that everything works as it should, particularly at the database level and SQLAlchemy.

WHAT WAS THE GOAL

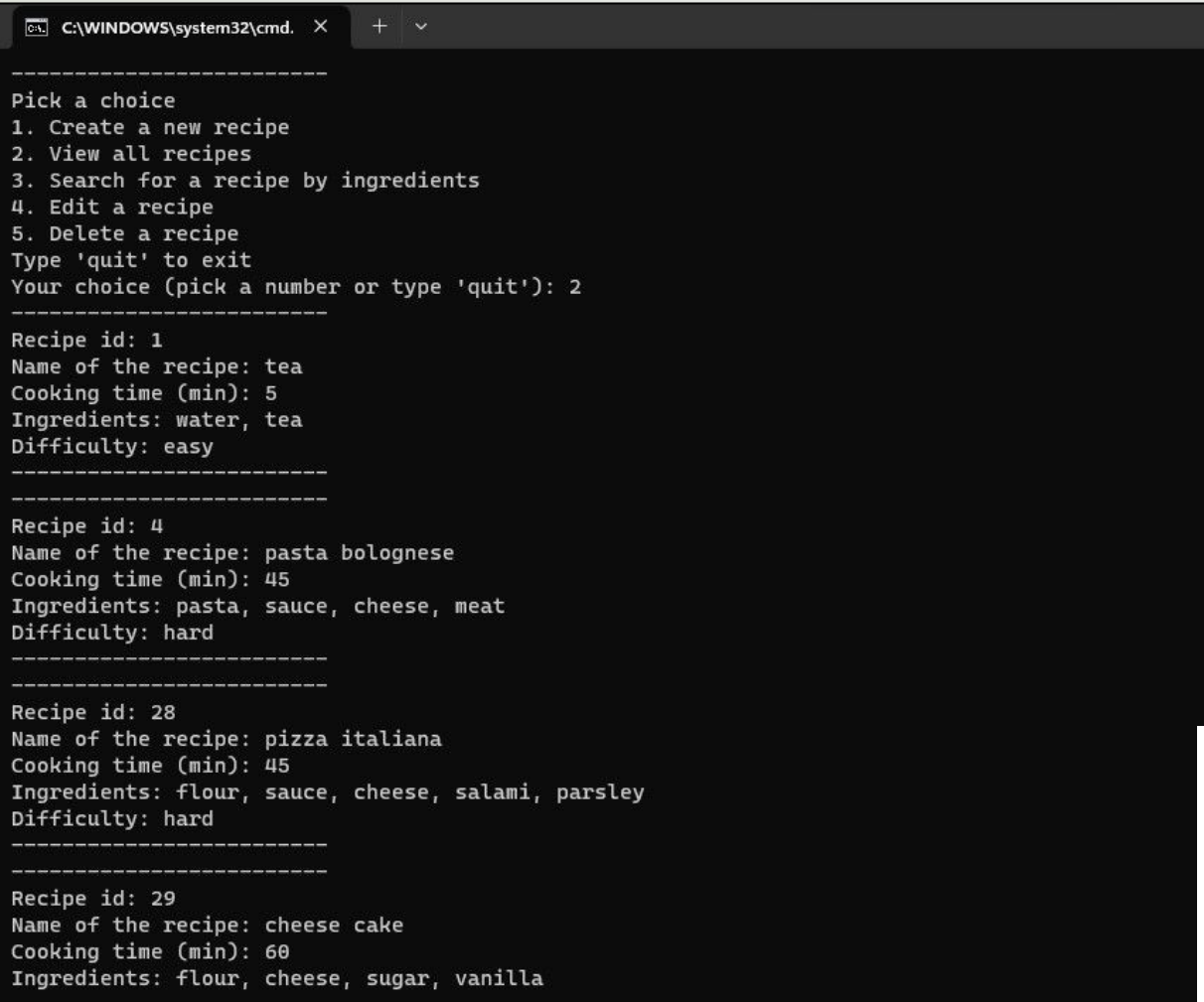
- Test all the options of the application
- Ensure that it behaves and renders content as expected
- Ensure that no error causes the application to crash
- Ensure that the operations carried out in the application are reflected in the database data



EXAMPLE OF OPERATIONS CARRIED OUT

-

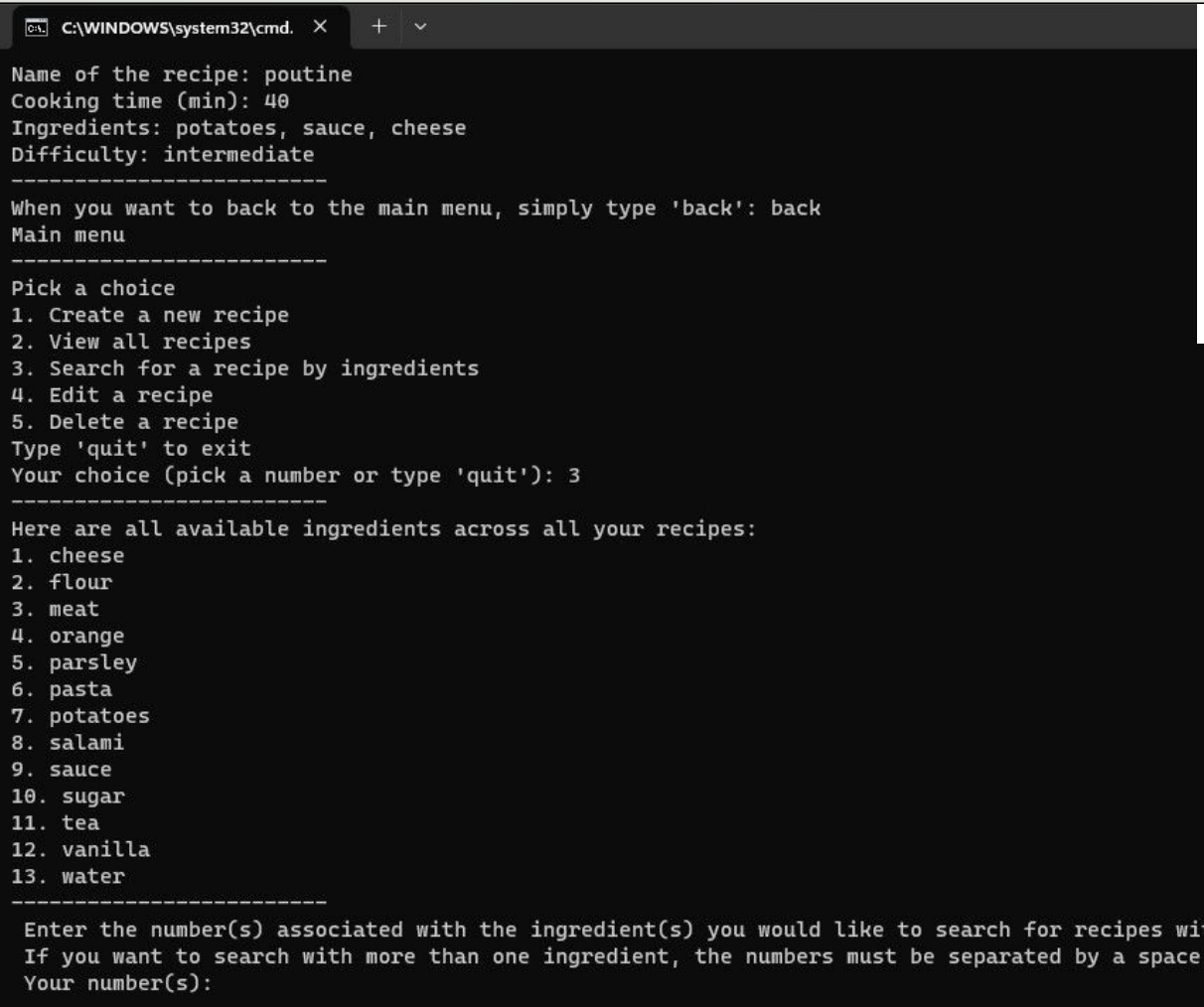
CREATING A RECIPE



EXAMPLE OF OPERATIONS CARRIED OUT

-

VIEWING ALL RECIPES



EXAMPLE OF OPERATIONS CARRIED OUT

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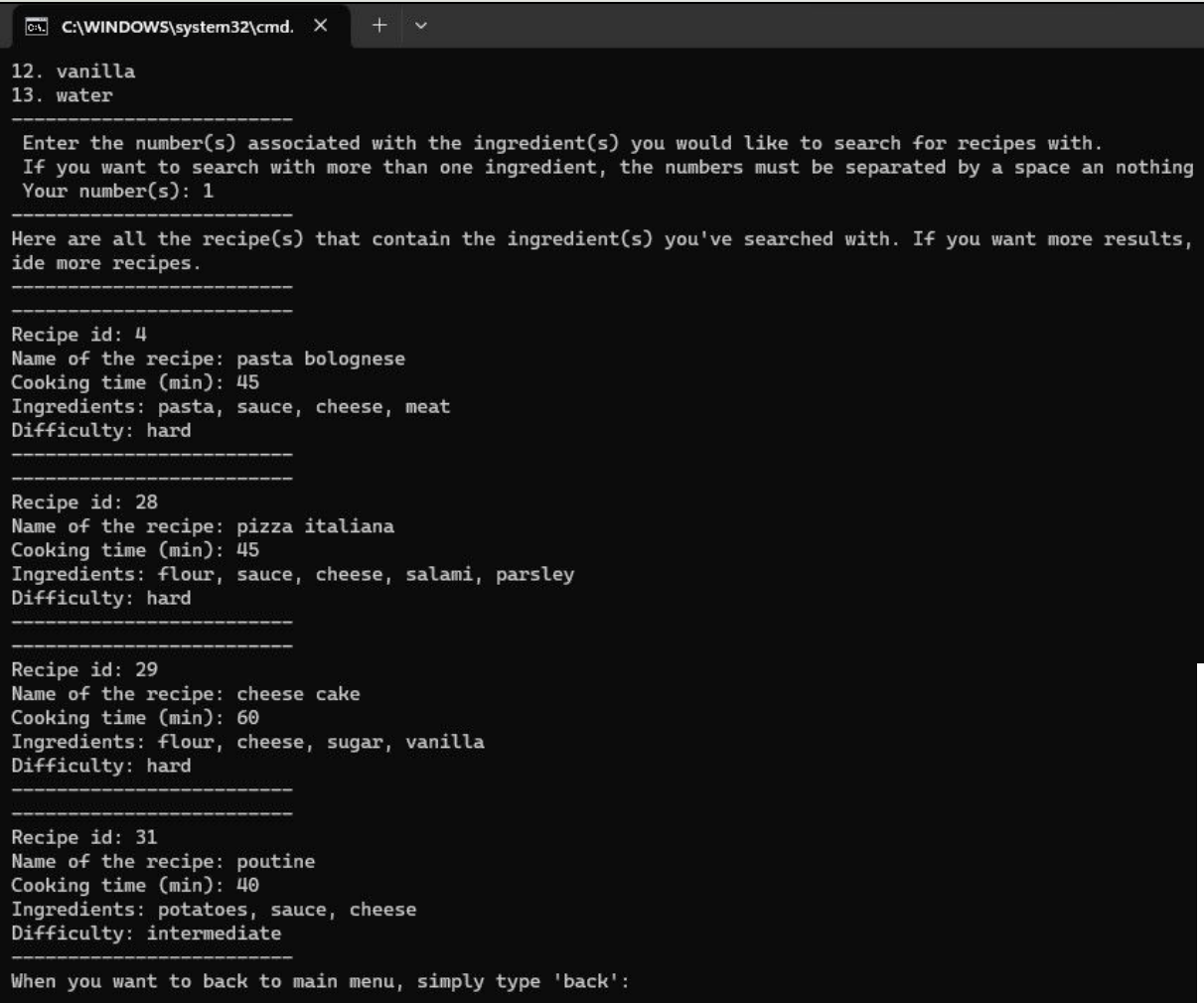
SEARCHING RECIPES BASED ON INGREDIENT(S)



EXAMPLE OF OPERATIONS CARRIED OUT

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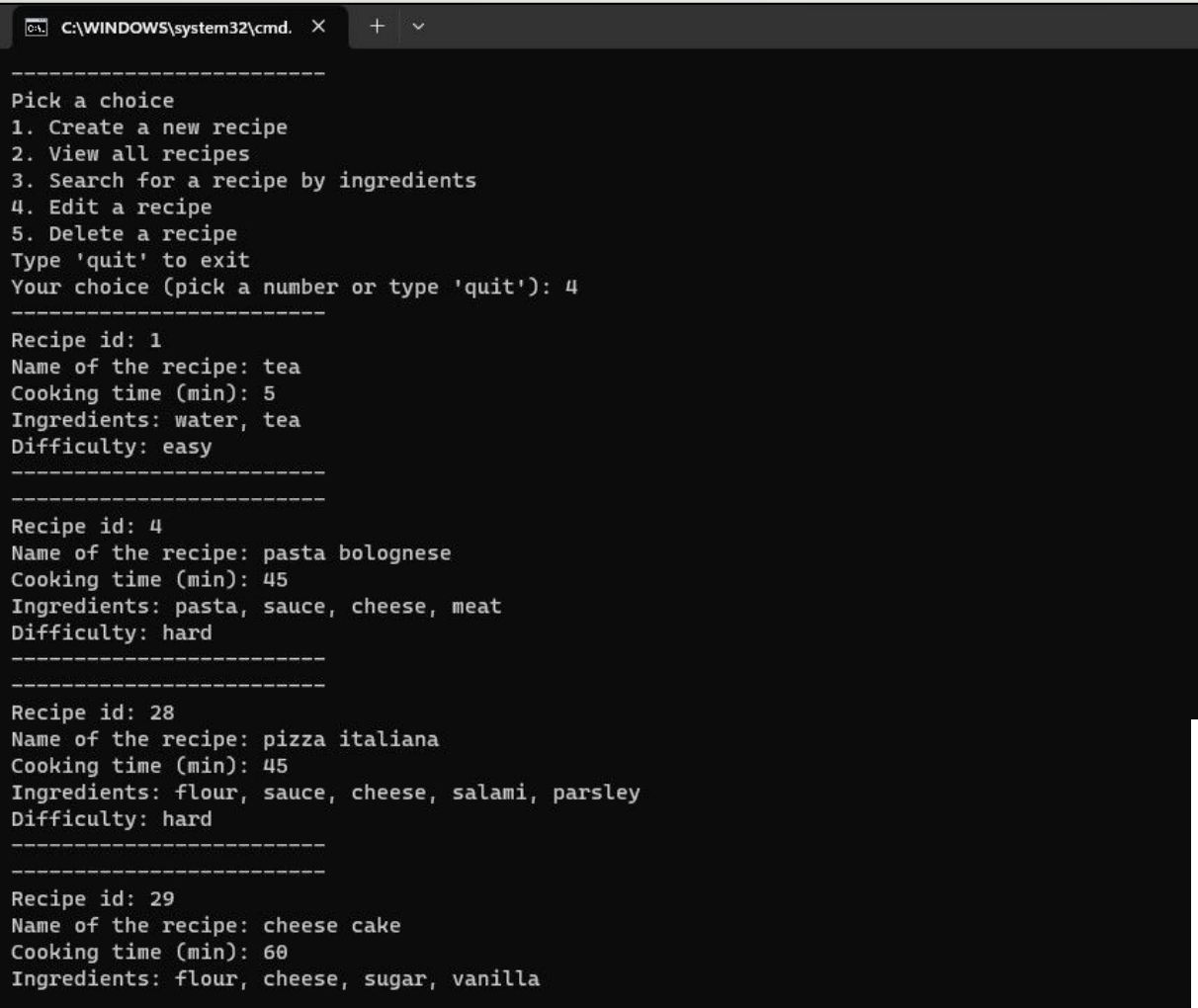
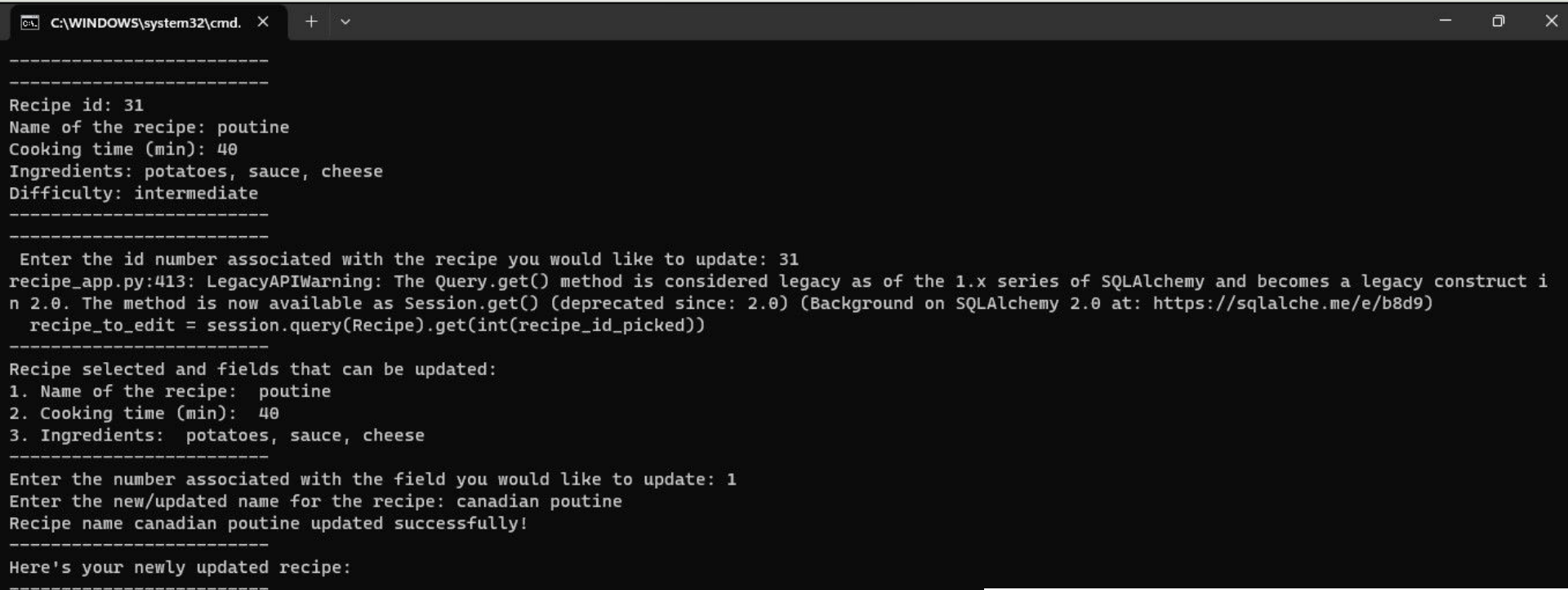
SEARCHING RECIPES BASED ON INGREDIENT(S)



EXAMPLE OF OPERATIONS CARRIED OUT

-

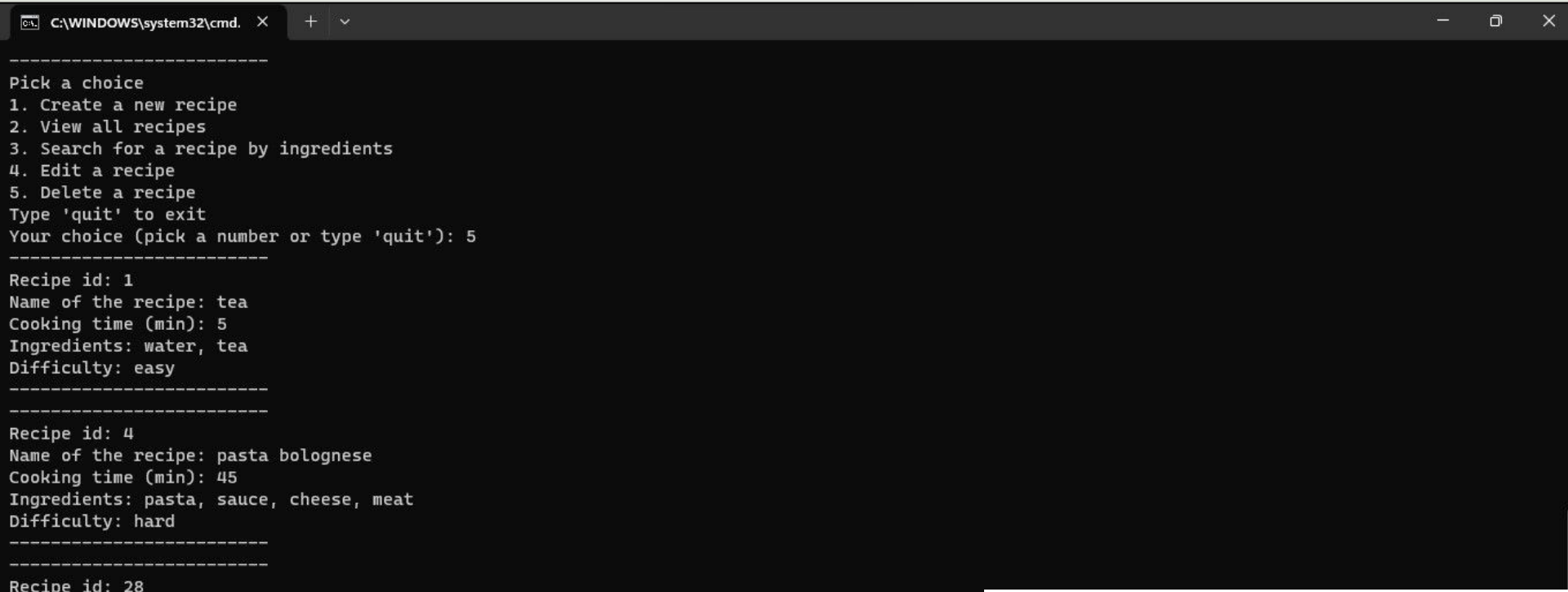
UPDATING A RECIPE



EXAMPLE OF OPERATIONS CARRIED OUT

-

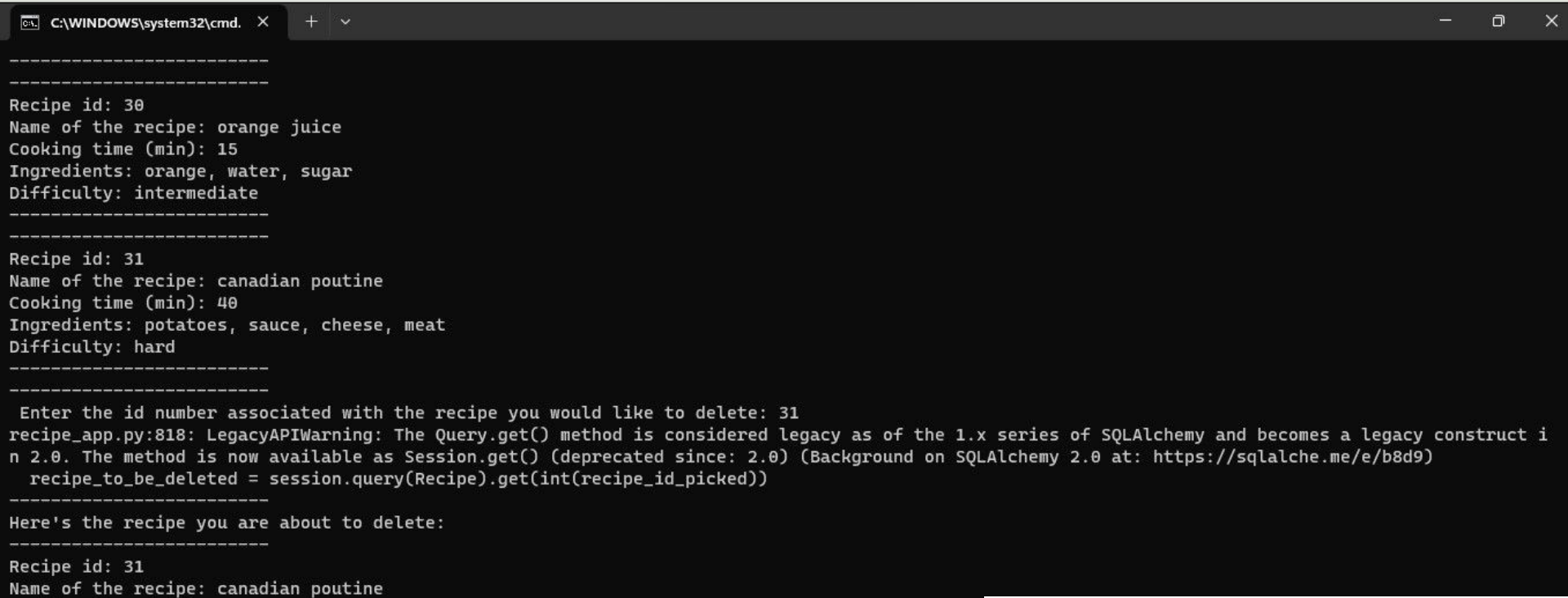
UPDATING A RECIPE



EXAMPLE OF OPERATIONS CARRIED OUT

-

DELETING A RECIPE



EXAMPLE OF OPERATIONS CARRIED OUT

-

DELETING A RECIPE

MySQL 8.0 Command Line Cli

```
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> USE task_database;
Database changed
mysql> DESCRIBE final_recipes;
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| id           | int          | NO   | PRI | NULL    | auto_increment |
| name         | varchar(50)  | YES  |     | NULL    |                |
| ingredients  | varchar(255) | YES  |     | NULL    |                |
| cooking_time | int          | YES  |     | NULL    |                |
| difficulty   | varchar(20)  | YES  |     | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
5 rows in set (0.04 sec)

mysql> SELECT * FROM final_recipes;
+----+-----------------+---------------------------------------+--------------+--------------+
| id | name            | ingredients                           | cooking_time | difficulty   |
+----+-----------------+---------------------------------------+--------------+--------------+
|  1 | tea             | water, tea                            |            5 | easy         |
|  4 | pasta bolognese | pasta, sauce, cheese, meat            |           45 | hard         |
| 28 | pizza italiana  | flour, sauce, cheese, salami, parsley |           45 | hard         |
| 29 | cheese cake     | flour, cheese, sugar, vanilla         |           60 | hard         |
| 30 | orange juice    | orange, water, sugar                  |            5 | easy         |
| 31 | poutine         | potatoes, sauce, cheese               |           40 | intermediate |
+----+-----------------+---------------------------------------+--------------+--------------+
6 rows in set (0.00 sec)

mysql>
```

MySQL DATABASE AFTER CREATING, UPDATING AND DELETING RECIPES

07

Finalizing code revision and refactoring

Skills used

Critical thinking

WHY WAS THIS STEP IMPORTANT

Ensuring that the codes are optimized to facilitate possible appropriation by other developers in the future is useful and could possibly save time. It can also facilitate any future adjustments to the codes.

WHAT WAS THE GOAL

Reviewing the file to make sure everything was optimized as much as possible in order to facilitate future modifications, additions or adjustments.

Adding comments and clarification points in the file where important for the benefit and better understanding of anyone else who may work on this project later.

Formatting the code using Python *Black* package.

CHALLENGES OR SPECIAL POINTS OF CONSIDERATION

I positioned myself from the point of view of future colleagues who could work on this project. How can I make my project and my codes as clear as possible to promote its easy appropriation? I reviewed each part of the script to bring improvements and add comments where I thought it could be useful.

07

README.md

Completing the README document

Skills used

Communication
Content writing

WHY WAS THIS STEP IMPORTANT

Ensure the project is well documented and easily accessible by anyone interested.

WHAT WAS THE GOAL

Updating and completing the README file located in the Recipe app CLI Github repository. The goal was to ensure that all relevant information regarding this project is accessible under these four categories:

- Project description
- User interface
- Technical aspects
- App dependencies

CHALLENGES OR SPECIAL POINTS OF CONSIDERATION

Finding the right balance between giving the right level of information, while remaining as synthetic as possible. To help me, I made a first draft, which I then modified several times. I get inspired by other READMEs I've consulted and for which I found that the information presented was relevant.

DECISIONS MADE

I wrote the README documentation from A to Z, in terms of content, presentation and structure.

README SAMPLE - FULL VERSION ON GITHUB