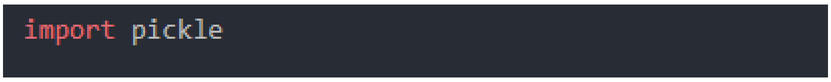
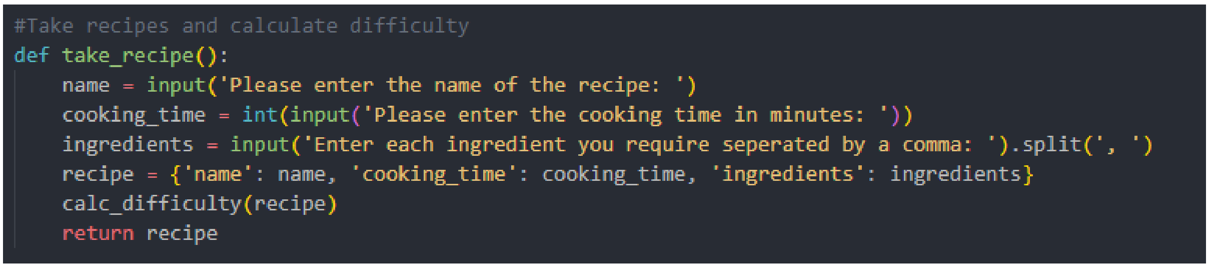
Part 1: Step 1



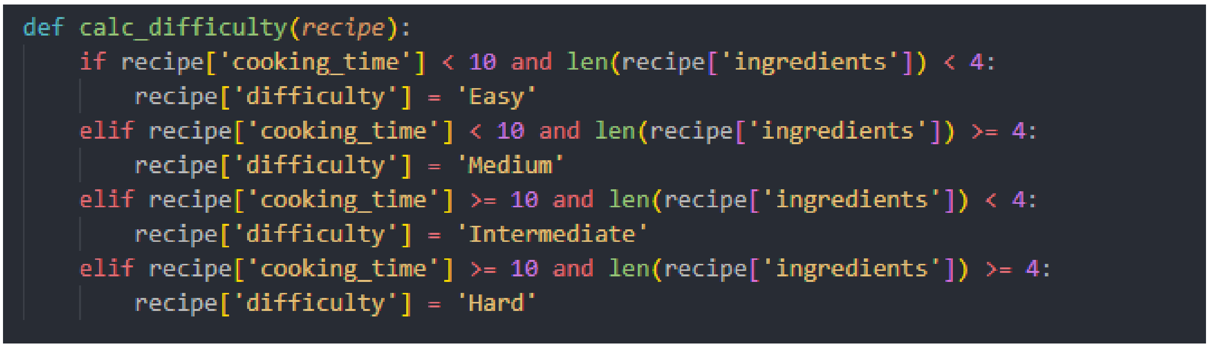
```
import pickle
```

Part 1: Step 2



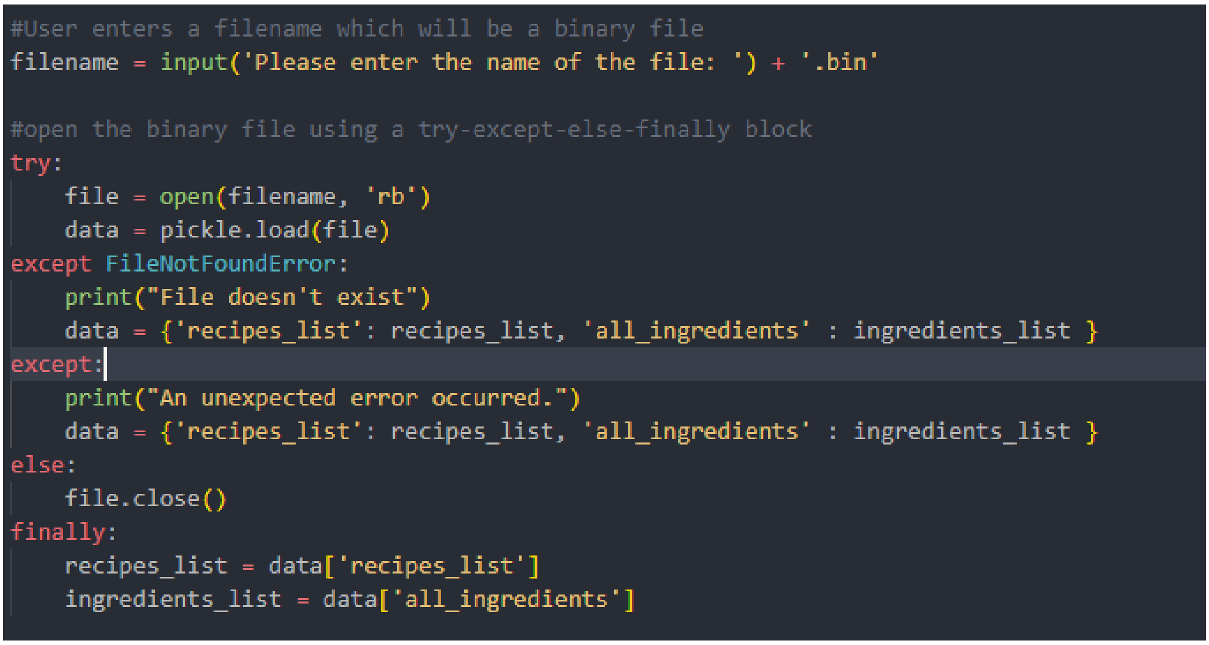
```
#Take recipes and calculate difficulty
def take_recipe():
    name = input('Please enter the name of the recipe: ')
    cooking_time = int(input('Please enter the cooking time in minutes: '))
    ingredients = input('Enter each ingredient you require seperated by a comma: ').split(', ')
    recipe = {'name': name, 'cooking_time': cooking_time, 'ingredients': ingredients}
    calc_difficulty(recipe)
    return recipe
```

Part 1 Step 3



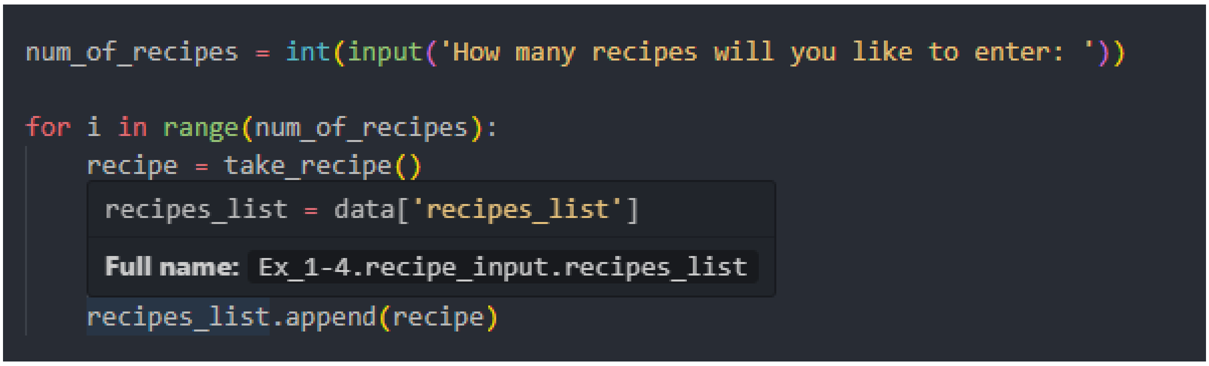
```
def calc_difficulty(recipe):
    if recipe['cooking_time'] < 10 and len(recipe['ingredients']) < 4:
        recipe['difficulty'] = 'Easy'
    elif recipe['cooking_time'] < 10 and len(recipe['ingredients']) >= 4:
        recipe['difficulty'] = 'Medium'
    elif recipe['cooking_time'] >= 10 and len(recipe['ingredients']) < 4:
        recipe['difficulty'] = 'Intermediate'
    elif recipe['cooking_time'] >= 10 and len(recipe['ingredients']) >= 4:
        recipe['difficulty'] = 'Hard'
```

Part 1: Step 4



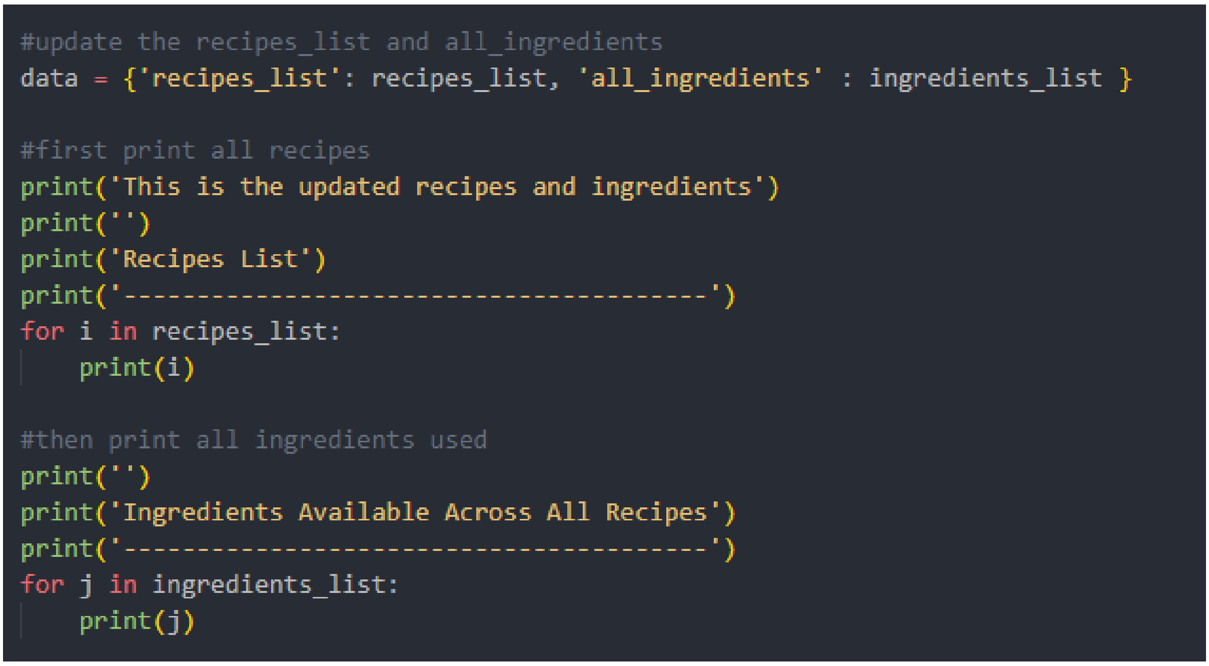
```
#User enters a filename which will be a binary file
filename = input('Please enter the name of the file: ') + '.bin'

#open the binary file using a try-except-else-finally block
try:
    file = open(filename, 'rb')
    data = pickle.load(file)
except FileNotFoundError:
    print("File doesn't exist")
    data = {'recipes_list': recipes_list, 'all_ingredients' : ingredients_list }
except:
    print("An unexpected error occurred.")
    data = {'recipes_list': recipes_list, 'all_ingredients' : ingredients_list }
else:
    file.close()
finally:
    recipes_list = data['recipes_list']
    ingredients_list = data['all_ingredients']
```

Part 1: Step 5



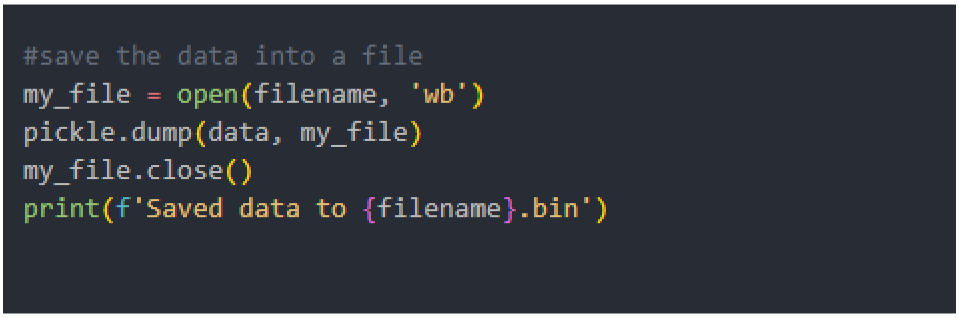
```python
num_of_recipes = int(input('How many recipes will you like to enter: '))

for i in range(num_of_recipes):
    recipe = take_recipe()
     recipes_list = data['recipes_list']

     Full name: Ex_1-4.recipe_input.recipes_list
    recipes_list.append(recipe)
```

Part 1: Step 6



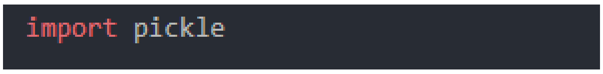
```python
#update the recipes_list and all_ingredients
data = {'recipes_list': recipes_list, 'all_ingredients' : ingredients_list }

#first print all recipes
print('This is the updated recipes and ingredients')
print('')
print('Recipes List')
print('----------------------------------------')
for i in recipes_list:
    print(i)

#then print all ingredients used
print('')
print('Ingredients Available Across All Recipes')
print('----------------------------------------')
for j in ingredients_list:
    print(j)
```

Part 1: Step 7



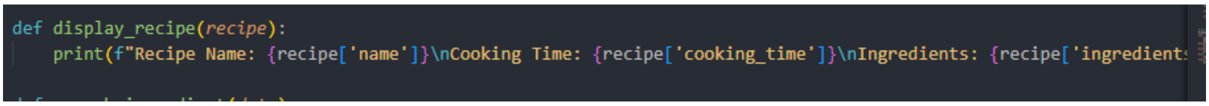
```python
#save the data into a file
my_file = open(filename, 'wb')
pickle.dump(data, my_file)
my_file.close()
print(f'Saved data to {filename}.bin')
```

Part 2: Step 1



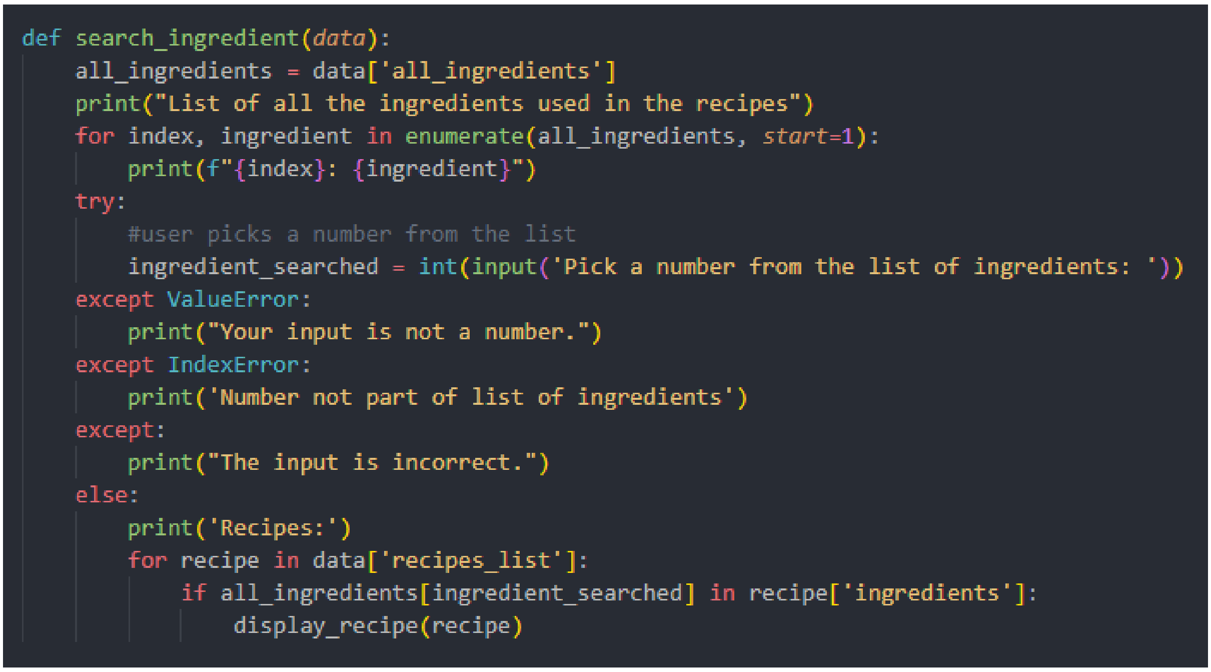
```python
import pickle
```

Part 2: Step 2



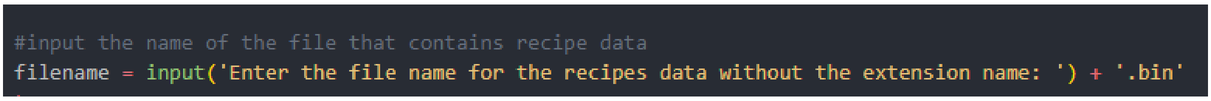
```python
def display_recipe(recipe):
    print(f"Recipe Name: {recipe['name']}\nCooking Time: {recipe['cooking_time']}\nIngredients: {recipe['ingredient
```

Part 2: Step 3



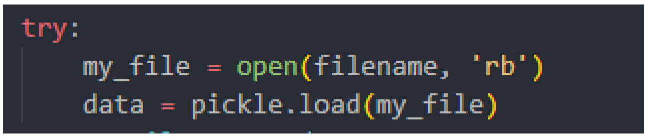
```python
def search_ingredient(data):
    all_ingredients = data['all_ingredients']
    print("List of all the ingredients used in the recipes")
    for index, ingredient in enumerate(all_ingredients, start=1):
        print(f"{index}: {ingredient}")
    try:
        #user picks a number from the list
        ingredient_searched = int(input('Pick a number from the list of ingredients: '))
    except ValueError:
        print("Your input is not a number.")
    except IndexError:
        print('Number not part of list of ingredients')
    except:
        print("The input is incorrect.")
    else:
        print('Recipes:')
        for recipe in data['recipes_list']:
            if all_ingredients[ingredient_searched] in recipe['ingredients']:
                display_recipe(recipe)
```

Part 2: Step 4



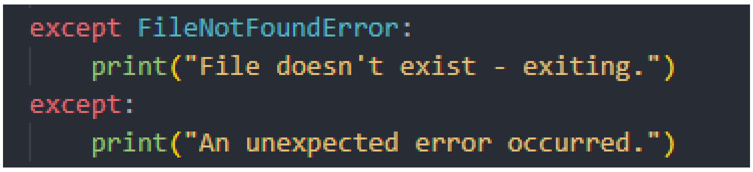
```python
#input the name of the file that contains recipe data
filename = input('Enter the file name for the recipes data without the extension name: ') + '.bin'
```

Part 2: Step 5



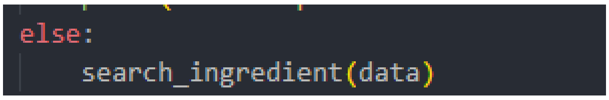
```python
try:
    my_file = open(filename, 'rb')
    data = pickle.load(my_file)
```

Part 2: Step 6



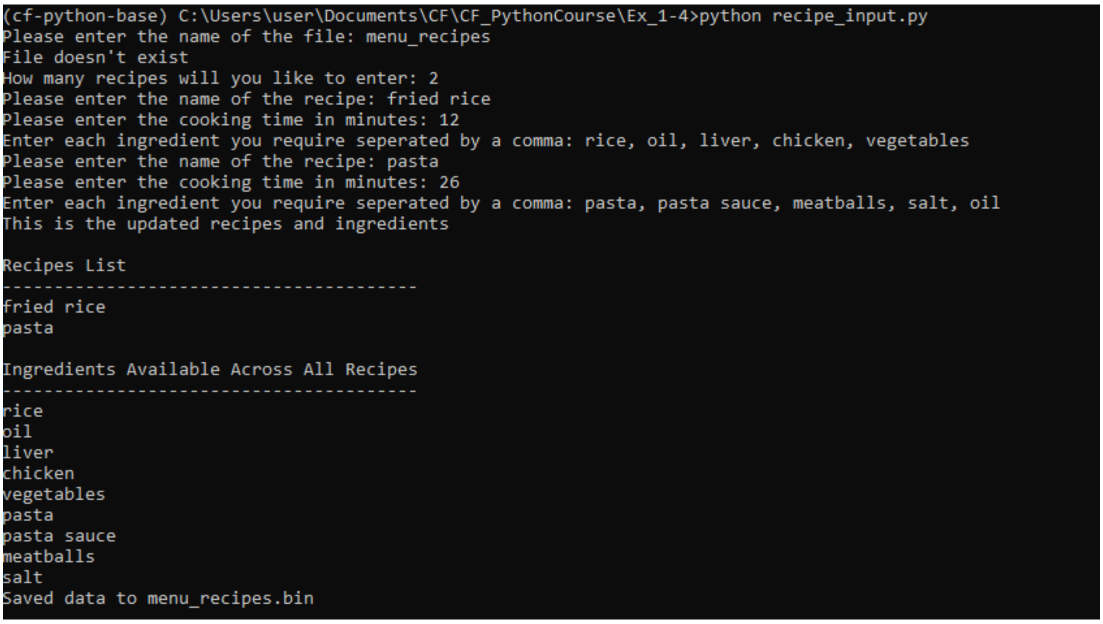
```
except FileNotFoundError:
    print("File doesn't exist - exiting.")
except:
    print("An unexpected error occurred.")
```

Part 2: Step 7



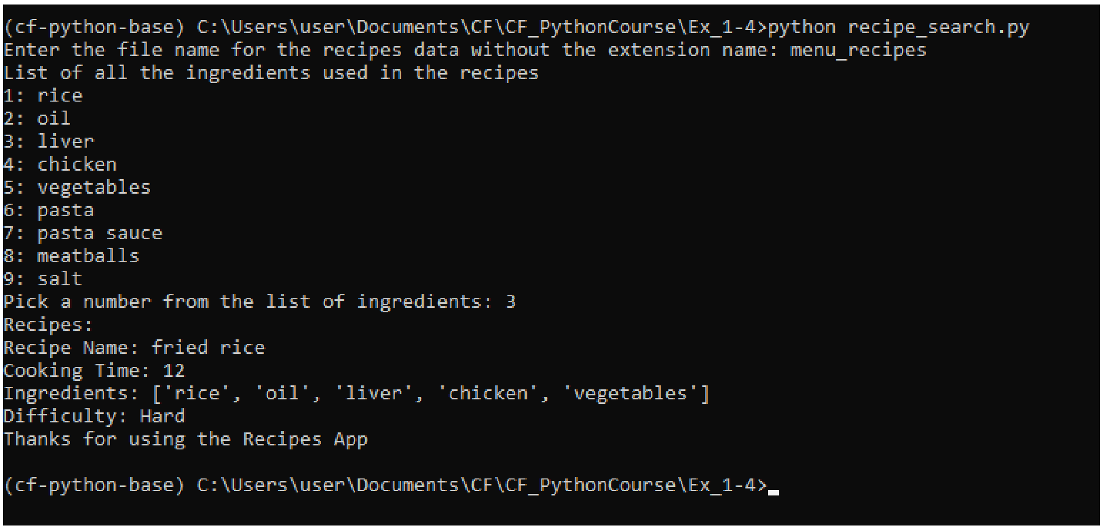
```
else:
    search_ingredient(data)
```

Part 3: Step 1



```
(cf-python-base) C:\Users\user\Documents\CF\CF_PythonCourse\Ex_1-4>python recipe_input.py
Please enter the name of the file: menu_recipes
File doesn't exist
How many recipes will you like to enter: 2
Please enter the name of the recipe: fried rice
Please enter the cooking time in minutes: 12
Enter each ingredient you require seperated by a comma: rice, oil, liver, chicken, vegetables
Please enter the name of the recipe: pasta
Please enter the cooking time in minutes: 26
Enter each ingredient you require seperated by a comma: pasta, pasta sauce, meatballs, salt, oil
This is the updated recipes and ingredients

Recipes List
----------------------------------------
fried rice
pasta

Ingredients Available Across All Recipes
----------------------------------------
rice
oil
liver
chicken
vegetables
pasta
pasta sauce
meatballs
salt
Saved data to menu_recipes.bin
```

Part 3: Step 2



```
(cf-python-base) C:\Users\user\Documents\CF\CF_PythonCourse\Ex_1-4>python recipe_search.py
Enter the file name for the recipes data without the extension name: menu_recipes
List of all the ingredients used in the recipes
1: rice
2: oil
3: liver
4: chicken
5: vegetables
6: pasta
7: pasta sauce
8: meatballs
9: salt
Pick a number from the list of ingredients: 3
Recipes:
Recipe Name: fried rice
Cooking Time: 12
Ingredients: ['rice', 'oil', 'liver', 'chicken', 'vegetables']
Difficulty: Hard
Thanks for using the Recipes App

(cf-python-base) C:\Users\user\Documents\CF\CF_PythonCourse\Ex_1-4>
```