Assignment05 - Dictionaries, JSON, and Error Handling

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Foundations Of Programming: Python

Introduction

This assignment focused on building a program that uses dictionaries to manage data in memory and JSON files to persist that data. The program allows users to register students, view current registrations, and save the data. Error handling was added using try-except blocks.

Steps I Took

1. I defined a list named 'students' to store rows as dictionaries:

```
students: list = []
```

2. I loaded existing data from the JSON file into the 'students' list with:

```
try:
    file = open(FILE_NAME, "r")
    students = json.load(file)
    file.close()
except FileNotFoundError:
    students = []
```

3. I added logic in option 1 to collect new input and validate names with isalpha(), then saved it to a dictionary and appended it to the 'students' list.

4. I used a loop in option 2 to print student data as readable lines:

```
for student in students:
    print(f"Student {student['FirstName']} {student['LastName']} is enrolled in
{student['CourseName']}")
```

5. I saved the list of dictionaries back to JSON using:

```
file = open(FILE_NAME, "w")
json.dump(students, file)
file.close()
```

Summary

This assignment helped reinforce how to use dictionaries and JSON files together, as well as how to add structured error handling to protect against bad input and missing files.