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IT FDN 110 A Wi 25: Foundations Of Programming: Python

Assignment05

## Using Dictionaries and .json Files

### Introduction

In this Module, we learned how to use a while loop, if-else statements, string, lists and a dictionary to collect multiple inputs from a user and save it to a . In this script, we use a while loop and some if-else statements to get information from the user, check it, and save it to a .json file.

### Variables

There are both constant and changing variables in this script, some are strings and some are lists. We start off with the following line in order to import the json library.

```
import json
```

### Constant Variable

The constant variables in this script are :

```
MENU: str = ('---- Course Registration Program ----'
            'Select from the following menu:)  '
            '1. Register a Student for a Course'
            '2. Show current data  '
            '3. Save data to a file'
            '4. Exit the program'
            '-----')
FILE_NAME: str = 'Enrollments.json'
```

Both variables are strings, and the first one shows the menu options for the if-else statements. The second variable holds the string for the .csv file.

### Changing Variable

The changing variables are written below:

```
student_first_name: str = '' # Holds the first name of a student entered by
the user.
student_last_name: str = '' # Holds the last name of a student entered by
the user.
```

```
course_name: str = '' # Holds the name of a course entered by the user.
student_data: dict = {} # one row of student data
students: list = [] # a table of student data
csv_data: str = '' # Holds combined string data separated by a comma.
file = None # Holds a reference to an opened file.
menu_choice: str # Hold the choice made by the user.
```

The first three variables will change based on the input from the user, and most of them are specified to be strings. They are then put into the `student_data` dictionary, which is then put into the “students” list.

## Before the While Loop

Before the while loop that runs the menu choices, and after we define all our variables, there are some lines of code that reads the current data in the `Enrollments.json` file.

## The While Loop

The while-loop runs throughout the whole program, and shows the message where the user can input which step of the code they want to do.

## The If-Else Statements

The if-else statements are the portion of the code where the user inputs the student names and course names in, one at a time, checks the input, adds the input to a `.json` file, and then shuts down the program.

### First Choice

In this If-statement, the code is asking for the students name and course name, and saving them as three string variables. Then the string is added to dictionary, and that dictionary is appended to a list. If the user wants to register multiple people, the user will have to keep hitting the first menu choice for the number of people they want to register.

The user does not necessarily need to select the first menu option when first running the code, as the `Enrollments.json` file should be prepopulated.

### Second Choice

In this if-else statement, the code prints out the first name, last name and course name of all the people registered. It recalls information by an array, rather than by its position in the list.

### Third Choice

In this if-else statement, the code saves the student names and course names to a .json file using the `json.dump` function.

### Fourth Choice

This else-if statement ends the program.

### Summary

In this module, we learned how to create a script that would use a while loop and 4 if-else statements to take inputs from a user, display them, change the variable type, and save them to a .json file.