**Module 7 Critical Thinking Assignment Project**

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CSC500: Principles of Programming

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**Module 7 Critical Thinking Assignment**

This critical thinking assignment focuses on development of a Python program to manage course information. The main objective is to create a system that allows user to query specific details of courses such as room number, instructors and meeting times. From Python perspective it focuses on usage of dictionaries.

**Pseudocode for this assignment –**

1. START
2. Create a data structure using dictionary for Key-Value Pairs: Room Number Course Number (key) Room Number (value)
3. Create a data structure using dictionary for Key-Value Pairs: Instructors; Course Number (key) and Instructor (value)
4. Create a data structure using dictionary for Key-Value Pairs: Meeting Time; Course Number (key) and Meeting Time (value)
5. Prompt the user to enter course number.
6. If the course number exists in dictionary, then
   1. it should display the course's room number, instructor, and meeting time.

Else

Show a graceful error message (Not provided in instruction)

1. END

Let us outline this into step by step solution in Python programming language.

Step 1- To store key value pair of course number and room number, we will use a dictionary named course\_room\_number. Lets populate it with key value pairs provided in the requirement

# Step 1: Dictionary for course room numbers

course\_room\_numbers = {

"CSC101": "3004",

"CSC102": "4501",

"CSC103": "6755",

"NET110": "1244",

"COM241": "1411",

}

Step 2 - To store key value pair of course number and instructors , we will use a dictionary named course\_instructors. Lets populate it with key value pairs provided in the requirement

# Step 2: Dictionary for course instructors

course\_instructors = {

"CSC101": "Haynes",

"CSC102": "Alvarado",

"CSC103": "Rich",

"NET110": "Burke",

"COM241": "Lee",

}

Step 3 - To store key value pair of course number and meeting time, we will use a dictionary named course\_meeting\_times. Lets populate it with key value pairs provided in the requirement

# Step 3: Dictionary for course meeting times

course\_meeting\_times = {

"CSC101": "8:00 a.m.",

"CSC102": "9:00 a.m.",

"CSC103": "10:00 a.m.",

"NET110": "11:00 a.m.",

"COM241": "1:00 p.m.",

}

Step 4 – Lets prompt user to enter course name. If user enters value in lower case the program will not be able to find any course, therefore lets convert in out to upper case using upper().

# Step 4: Prompt the user to enter a course number

course\_number = (input("Enter a course number (e.g., CSC101): ")).upper()

Step 5 – Lets check if the course exists and display for the user with all details. If course is not found in dictionary display a message starting course not found.

# Step 5: Check if the course number exists and display information

if course\_number in course\_room\_numbers:

print(f"Room number: {course\_room\_numbers[course\_number]}")

print(f"Instructor: {course\_instructors[course\_number]}")

print(f"Meeting Time: {course\_meeting\_times[course\_number]}")

else:

# Step 6: Course number not found

print("Course number not found.")

**Code Execution –**

A screenshot of a computer

Description automatically generated

Successful execution with CSC102

Error for csc102

Successful execution even with lowercase

A screenshot of a computer

Description automatically generated

**Summary –**

I learned more about usage of dictionary, storing data in a dictionary and retrieval of data from dictionary.

Github Link - <https://github.com/shashithakurcsu/CSUProjects/blob/main/Module7/course_details.py>