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Python Mock assessment 2

Linux 1.2

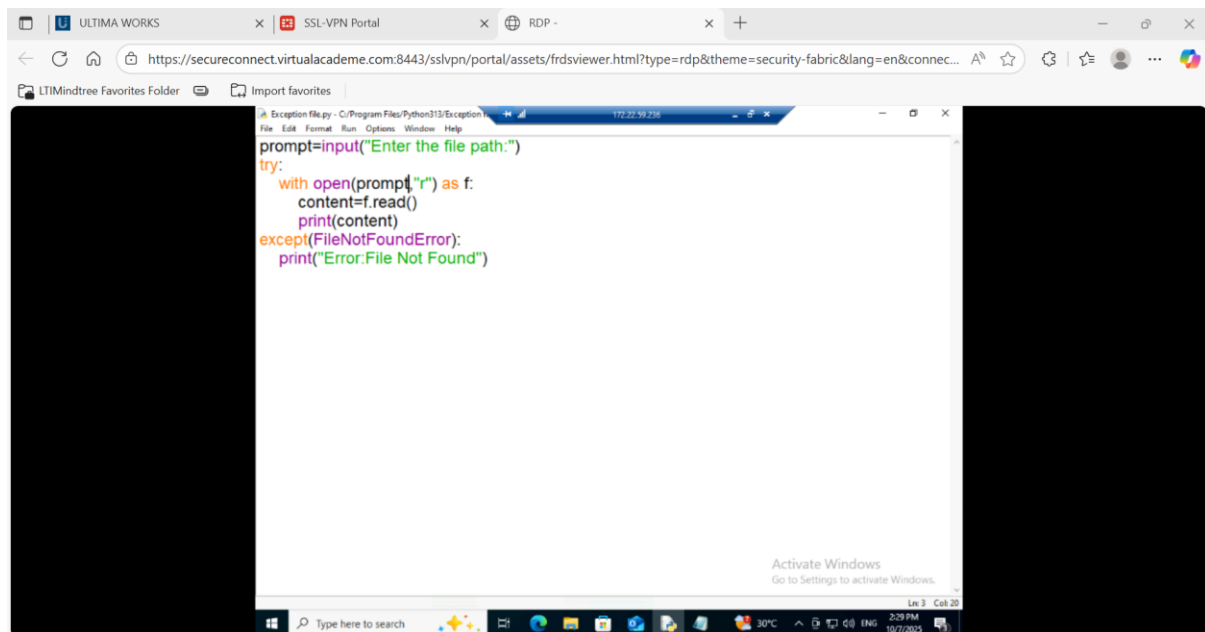
Task1:

Handling Multiple Exceptions with Input and Files Your system accepts input and reads files, and needs to manage potential errors gracefully.

Tasks:

1. Prompt the user to enter a file name and try to open it in read mode. o If the file doesn't exist, catch FileNotFoundError and print: "Error: File not found."

Program to open a file

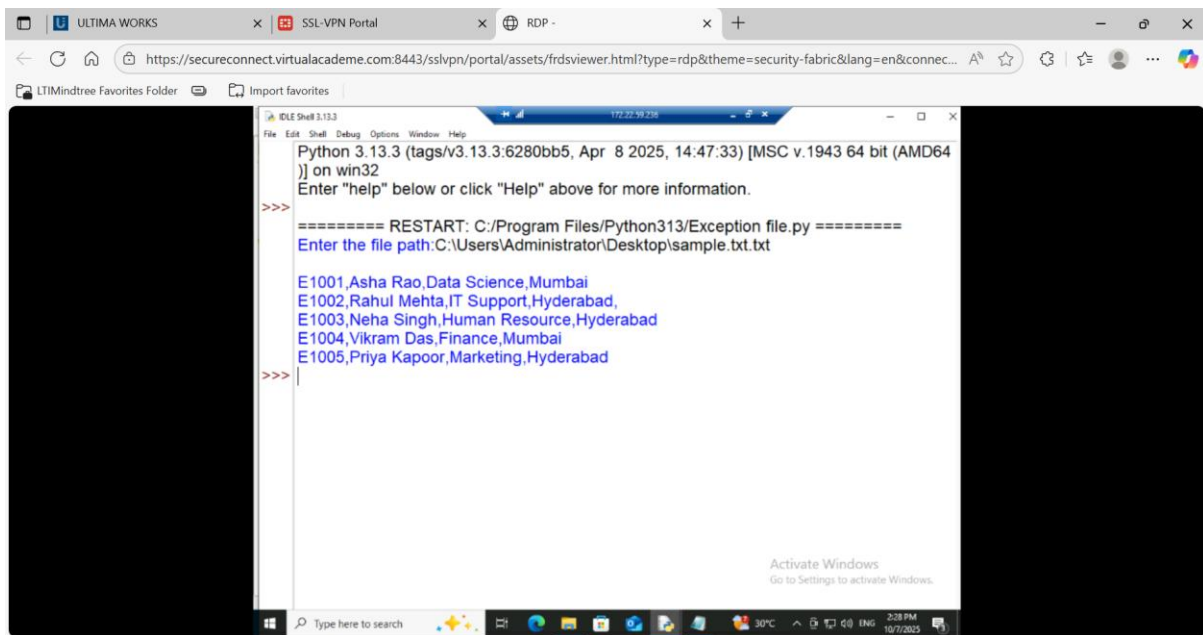
A screenshot of a web browser window displaying a Python script. The browser's address bar shows a URL from 'secureconnect.virtualacademe.com'. The script is titled 'Exception file.py' and is located at 'C:\Program Files\Python313\Python\'. The code prompts the user for a file path and attempts to open it in read mode. It includes a try-except block to catch 'FileNotFoundError' and print an error message. The script is displayed in a monospaced font with syntax highlighting. The browser window also shows a taskbar at the bottom with various application icons and a system clock indicating 2:29 PM on 10/7/2023.

```
Exception file.py - C:\Program Files\Python313\Python\
File Edit Format Run Options Window Help
prompt=input("Enter the file path:")
try:
    with open(prompt,"r") as f:
        content=f.read()
        print(content)
except(FileNotFoundError):
    print("Error:File Not Found")

Activate Windows
Go to Settings to activate Windows.

Type here to search 30°C 2:29 PM 10/7/2023
```

Output of Correct file name fetch

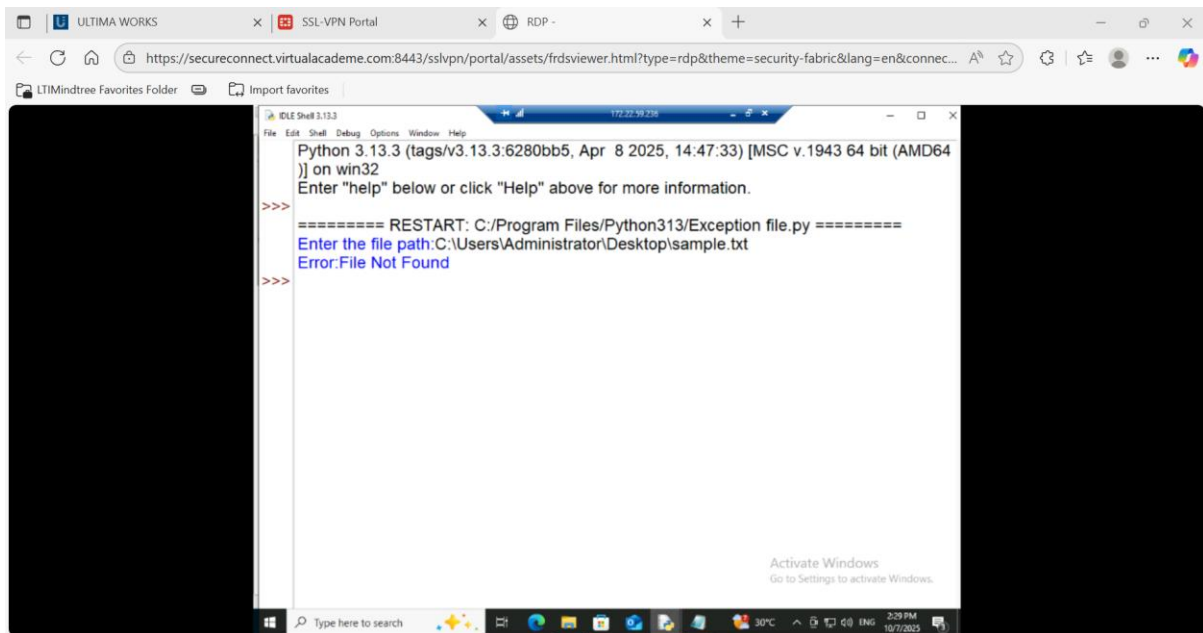


The screenshot shows a web browser window with the URL `https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...`. The browser displays a remote desktop session of a Windows 10 desktop. On the desktop, a Python 3.13.3 shell window is open, showing the following output:

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the file path:C:\Users\Administrator\Desktop\sample.txt.txt
E1001,Asha Rao,Data Science,Mumbai
E1002,Rahul Mehta,IT Support,Hyderabad,
E1003,Neha Singh,Human Resource,Hyderabad
E1004,Vikram Das,Finance,Mumbai
E1005,Priya Kapoor,Marketing,Hyderabad
>>>
```

The output lists five employee records, each on a new line, starting with an ID and followed by a name and a department. The records are: E1001, Asha Rao, Data Science, Mumbai; E1002, Rahul Mehta, IT Support, Hyderabad; E1003, Neha Singh, Human Resource, Hyderabad; E1004, Vikram Das, Finance, Mumbai; and E1005, Priya Kapoor, Marketing, Hyderabad.

Output of wrong filename fetch



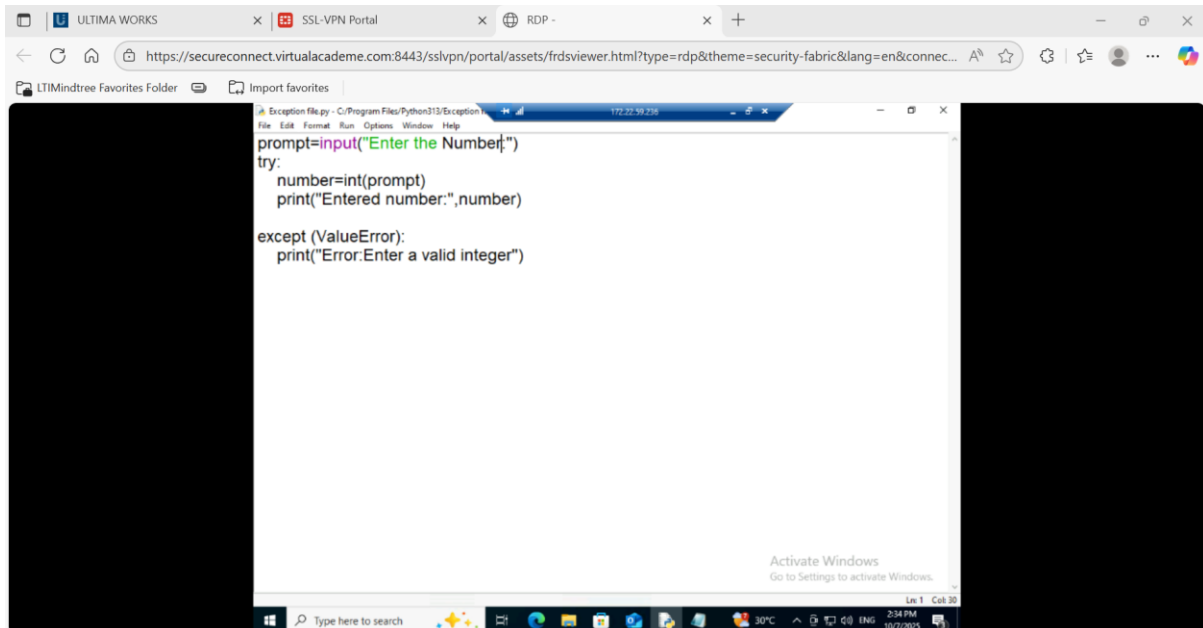
The screenshot shows the same web browser window as the previous one, but the Python shell window displays an error message:

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the file path:C:\Users\Administrator\Desktop\sample.txt
Error:File Not Found
>>>
```

The error message "Error:File Not Found" is displayed in red text, indicating that the file specified in the path could not be found.

2. Ask the user to input an integer. o If a non-integer is entered, catch ValueError and print: "Error: Please enter a valid integer."

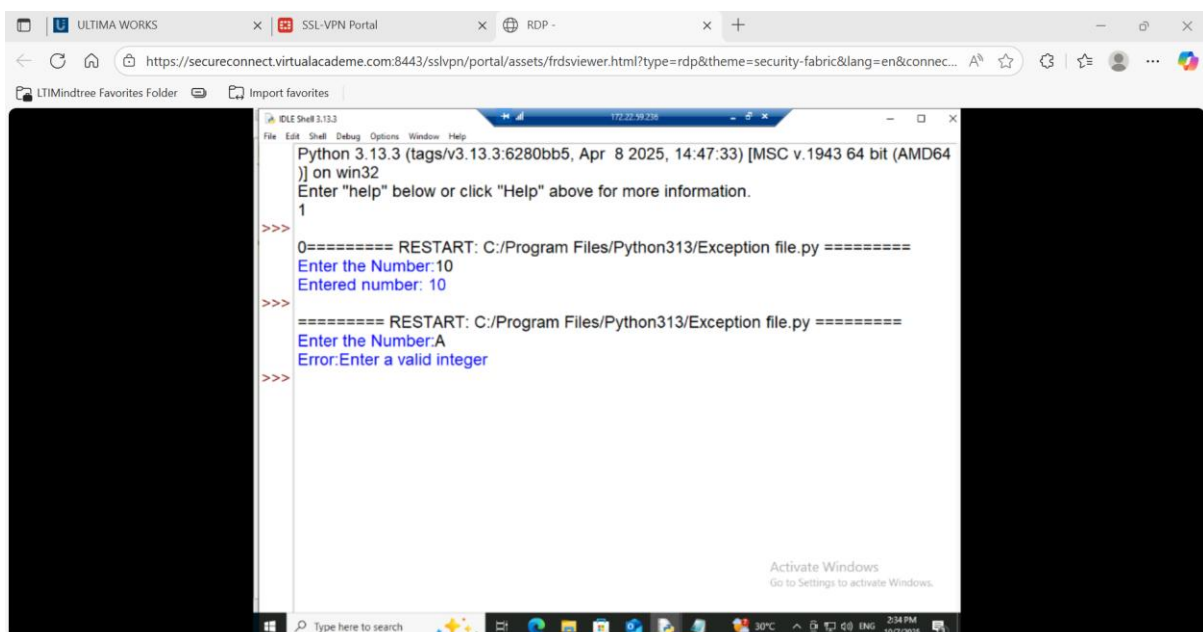
The program for printing the integer



The screenshot shows a web browser window with multiple tabs. The active tab is titled 'ULTIMA WORKS' and displays a URL: <https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...>. The browser content shows a remote desktop session of a Windows 10 desktop. The desktop has a taskbar with various application icons. A window titled 'Exception file.py - C:/Program Files/Python313/Exception...' is open, displaying the following Python code:

```
prompt=input("Enter the Number:")
try:
    number=int(prompt)
    print("Entered number:",number)
except (ValueError):
    print("Error:Enter a valid integer")
```

Output with integer and non integer factor

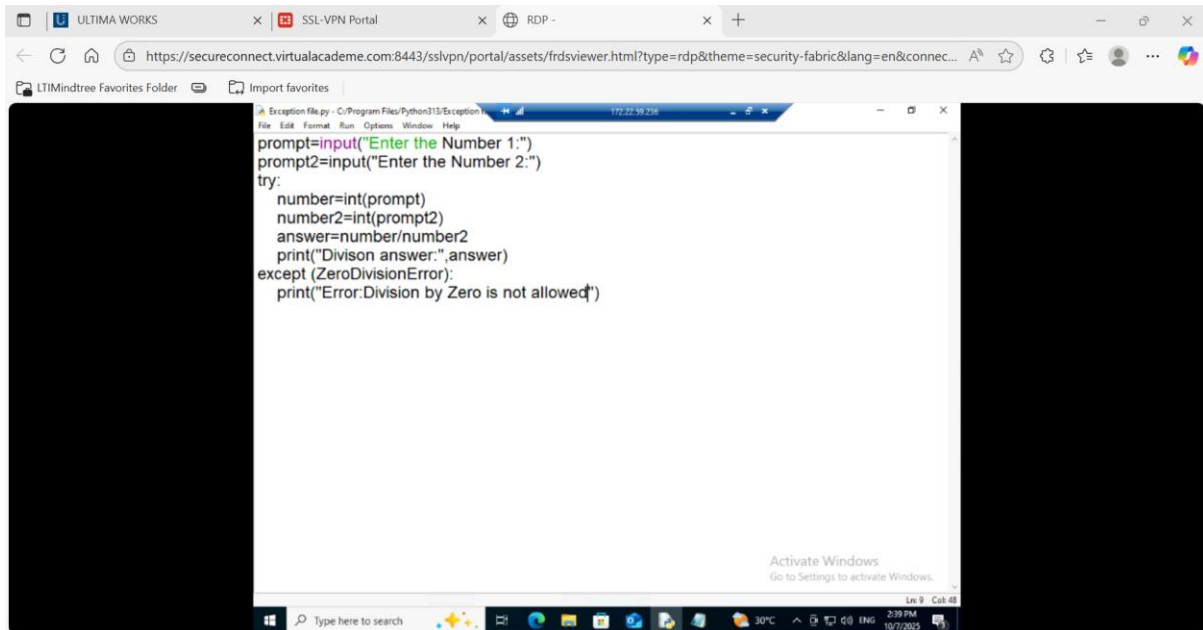


The screenshot shows the same web browser window as before, but the remote desktop session now displays the output of the Python script. The output is as follows:

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
1
>>>
0===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the Number:10
Entered number: 10
>>>
===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the Number:A
Error:Enter a valid integer
>>>
```

3. Ask the user for a divisor and perform a division using the previously entered integer. o If division by zero occurs, handle `ZeroDivisionError` and print: "Error: Division by zero is not allowed."

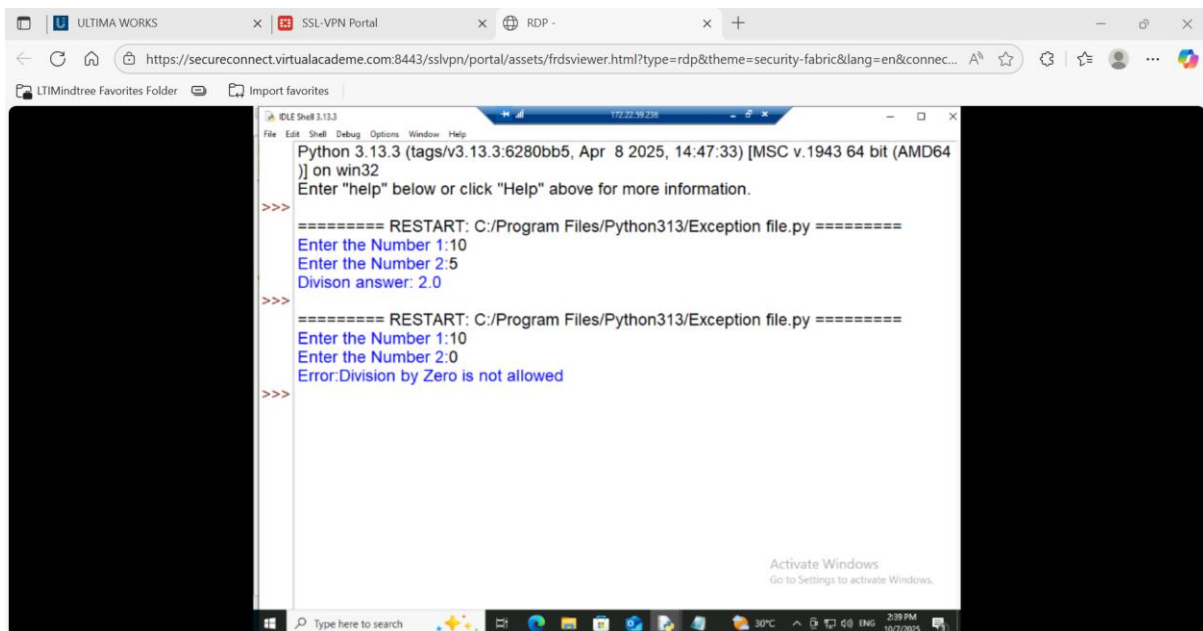
The program for division



The screenshot shows a web browser window with multiple tabs. The active tab is titled "RDP -" and displays a remote desktop session. The remote desktop shows a Windows 10 desktop with a taskbar and a search bar. A text editor window is open, displaying a Python script for division. The script prompts the user for two numbers and performs a division, handling a `ZeroDivisionError` if the divisor is zero.

```
prompt=input("Enter the Number 1:")
prompt2=input("Enter the Number 2:")
try:
    number=int(prompt)
    number2=int(prompt2)
    answer=number/number2
    print("Divison answer:", answer)
except (ZeroDivisionError):
    print("Error:Division by Zero is not allowed")
```

Output with and without error



The screenshot shows the same web browser window as before, but the remote desktop session now displays the output of the Python script. The output shows the user entering two numbers, 10 and 5, and the program printing the division result, 2.0. The user then enters 10 and 0, and the program prints the error message: "Error:Division by Zero is not allowed".

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the Number 1:10
Enter the Number 2:5
Divison answer: 2.0
>>>
===== RESTART: C:/Program Files/Python313/Exception file.py =====
Enter the Number 1:10
Enter the Number 2:0
Error:Division by Zero is not allowed
>>>
```

Task2:

Student Data Management

Create a program in Python to manage student data.

The program should meet the following requirements:

- **Menu-Driven Interface:**

Use a while loop to present a menu with three options:

- 1. Add a new student.**
- 2. Calculate a student's percentage.**
- 3. Exit the program.**

- **Add Student Functionality:**

- o **Create a function that prompts the user for a student's name.**
- o **Use the name as a key to store data in a dictionary.**
- o **Prompt the user to enter the student's marks for three subjects.**
- o **Store these marks as a list which will be the value associated with the student's name in the dictionary.**

- **Calculate Percentage Functionality:**

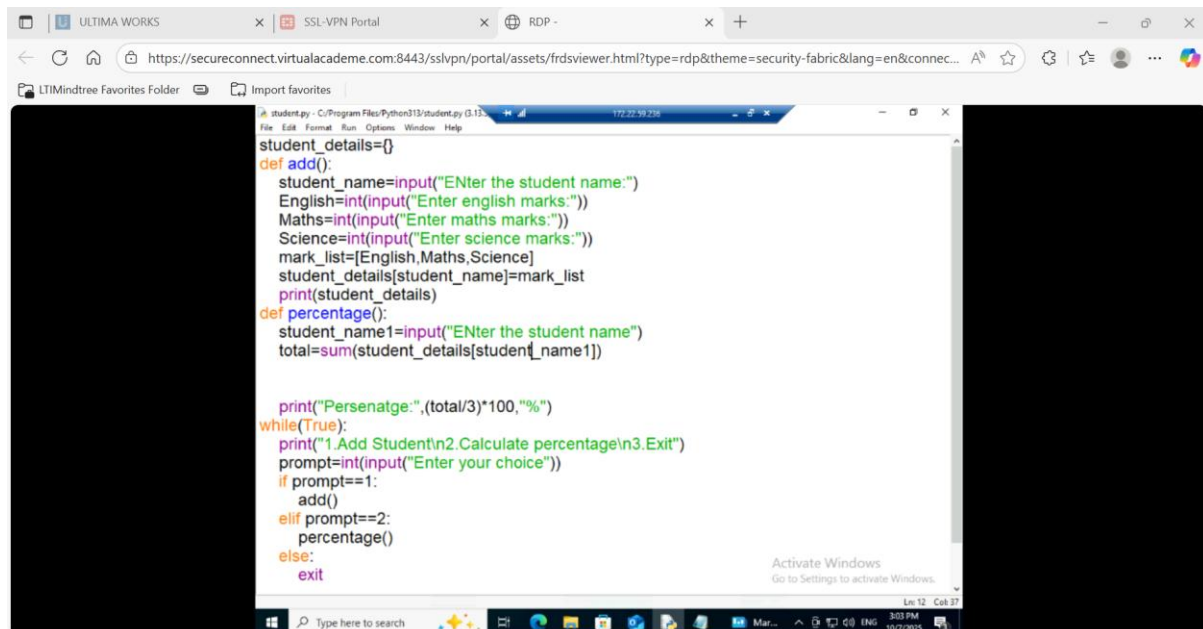
- o **Create a separate function that asks the user to enter a student's name.**
- o **Retrieve the student's marks from the dictionary using the provided name.**
- o **Calculate the student's percentage based on the three subjects.**
- o **Display the student's name and their calculated percentage on the screen.**

Program:

Add() -> function to add a student

Percentage-> function to calculate the percentage

While loop for continuous optioning



The screenshot shows a web browser window with a remote desktop connection. The browser's address bar displays the URL: <https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...>. The main content area shows a text editor window titled 'student.py - C:/Program Files/Python313/student.py (3.13)'. The code in the editor is as follows:

```
student_details={}
def add():
    student_name=input("Enter the student name:")
    English=int(input("Enter english marks:"))
    Maths=int(input("Enter maths marks:"))
    Science=int(input("Enter science marks:"))
    mark_list=[English,Maths,Science]
    student_details[student_name]=mark_list
    print(student_details)
def percentage():
    student_name1=input("Enter the student name")
    total=sum(student_details[student_name1])

    print("Persenatge:",(total/3)*100,"%")
while(True):
    print("1.Add Student\n2.Calculate percentage\n3.Exit")
    prompt=int(input("Enter your choice"))
    if prompt==1:
        add()
    elif prompt==2:
        percentage()
    else:
        exit
```

Output for this



The screenshot shows a web browser window with a remote desktop connection. The browser's address bar displays the URL: <https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...>. The main content area shows a terminal window titled 'IDLE Shell 3.13.3'. The output of the script is as follows:

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
===== RESTART: C:/Program Files/Python313/student.py =====
1.Add Student
2.Calculate percentage
3.Exit
Enter your choice 1
Enter the student name:Bharath
Enter english marks:90
Enter maths marks:95
Enter science marks:90
{'Bharath': [90, 95, 90]}
1.Add Student
2.Calculate percentage
3.Exit
Enter your choice1
Enter the student name:Madhu
Enter english marks:99
Enter maths marks:96
Enter science marks:98
{'Bharath': [90, 95, 90], 'Madhu': [99, 96, 98]}
1.Add Student
2.Calculate percentage
```

The screenshot shows a web browser window with the address bar displaying `https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...`. The browser tabs include 'ULTIMA WORKS', 'SSL-VPN Portal', and 'RDP -'. The main content area displays a remote desktop session of a Windows 10 desktop. The desktop has a taskbar with various application icons and a search bar. A 'Python Shell 3.13.3' window is open, showing a Python program that interacts with the user to enter student names and marks. The program's output shows the marks for two students, Bharath and Madhu, and calculates their average percentage. The program's code is as follows:

```
3.Exit
Enter your choice1
ENter the student name:Bharath
Enter english marks:90
Enter maths marks:95
Enter science marks:90
{'Bharath': [90, 95, 90]}
1.Add Student
2.Calculate percentage
3.Exit
Enter your choice1
ENter the student name:Madhu
Enter english marks:99
Enter maths marks:98
Enter science marks:97
{'Bharath': [90, 95, 90], 'Madhu': [99, 98, 97]}
1.Add Student
2.Calculate percentage
3.Exit
Enter your choice2
ENter the student name:Madhu
Persenatge: 98.0 %
1.Add Student
2.Calculate percentage
3.Exit
```

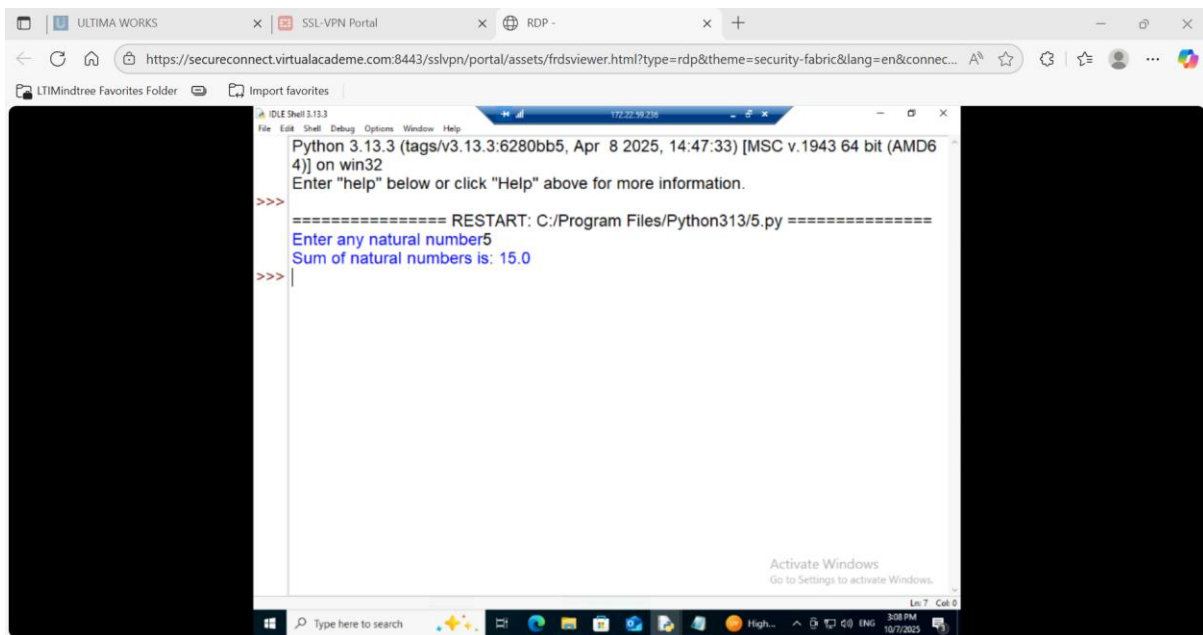
Task3: Write a python program to find the sum of n natural numbers.

Program to print sum of n natural numbers:

The screenshot shows a web browser window with the address bar displaying `https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsviwer.html?type=rdp&theme=security-fabric&lang=en&connec...`. The browser tabs include 'ULTIMA WORKS', 'SSL-VPN Portal', and 'RDP -'. The main content area displays a remote desktop session of a Windows 10 desktop. The desktop has a taskbar with various application icons and a search bar. A 'Spy - C:\Program Files\Python313\3.py (3.13.3)' window is open, showing a Python program that calculates the sum of the first n natural numbers. The program's code is as follows:

```
n=int(input("Enter any natural number"))
sum= (n*(n+1))/2
print("Sum of natural numbers is:",sum)
```

Output:



The screenshot shows a web browser window with the address bar displaying `https://secureconnect.virtualacademe.com:8443/sslvpn/portal/assets/frdsvierer.html?type=rdp&theme=security-fabric&lang=en&connec...`. The browser tabs include 'ULTIMA WORKS', 'SSL-VPN Portal', and 'RDP -'. Below the browser, a Remote Desktop Protocol (RDP) session is active, displaying a Windows desktop environment. The desktop background is black. A white window titled 'IDLE Shell 3.13.3' is open, showing the Python 3.13.3 shell interface. The shell output includes the Python version and architecture, a prompt to enter 'help' for more information, a restart message for the script `C:/Program Files/Python313/5.py`, and the execution of a script that prompts for a natural number and outputs the sum of natural numbers up to 5, which is 15.0. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons. The system tray indicates the time is 3:08 PM on 10/2/2025.

```
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr 8 2025, 14:47:33) [MSC v.1943 64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
===== RESTART: C:/Program Files/Python313/5.py =====
Enter any natural number5
Sum of natural numbers is: 15.0
>>>
```