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Internship Domain : Python Internee

Task Week : 2nd

Instructor Name : Hassan Ali

Task 1 :

Create a mini profile for a fictional user using variables. Store the following information:

Full name , Age , Current year, Country, Hobby, Expected graduation year (calculate it from current year + 4)

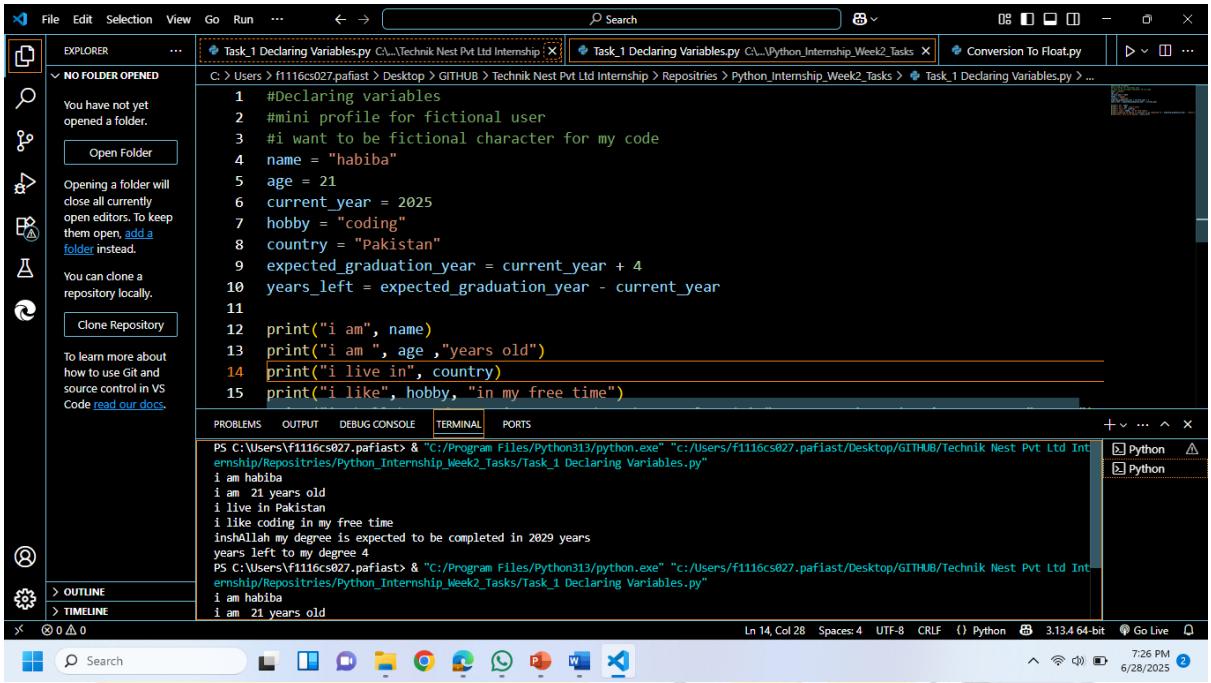
Print all details in a proper sentence format.

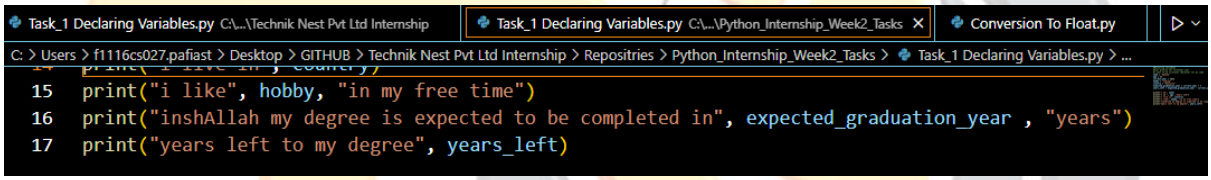
Also print how many years are left till graduation.

Solution :

Code Snippet & Screenshot

```
#Declaring variables
#mini profile for fictional user
#i want to be fictional character for my code
name = "habiba"
age = 21
current_year = 2025
hobby = "coding"
country = "Pakistan"
expected_graduation_year = current_year + 4
years_left = expected_graduation_year - current_year
print("i am", name)
print("i am ", age ,"years old")
print("i live in", country)
print("i like", hobby, "in my free time")
print("inshAllah my degree is expected to be completed in",
expected_graduation_year , "years")
print("years left to my degree", years_left)
```





Explanation:

- First I created mini profile using different characteristics.
- Along with that I **calculated** to estimate the graduation year by **adding 4** to the current year as given instructions.
- Then I calculated the **difference between the graduation year and current year**, which gives the number of years **left till graduation**
- Print function prints all information in a paragraph.

Task 2 :

Create 3 different user profiles (using variables). For each profile, include:

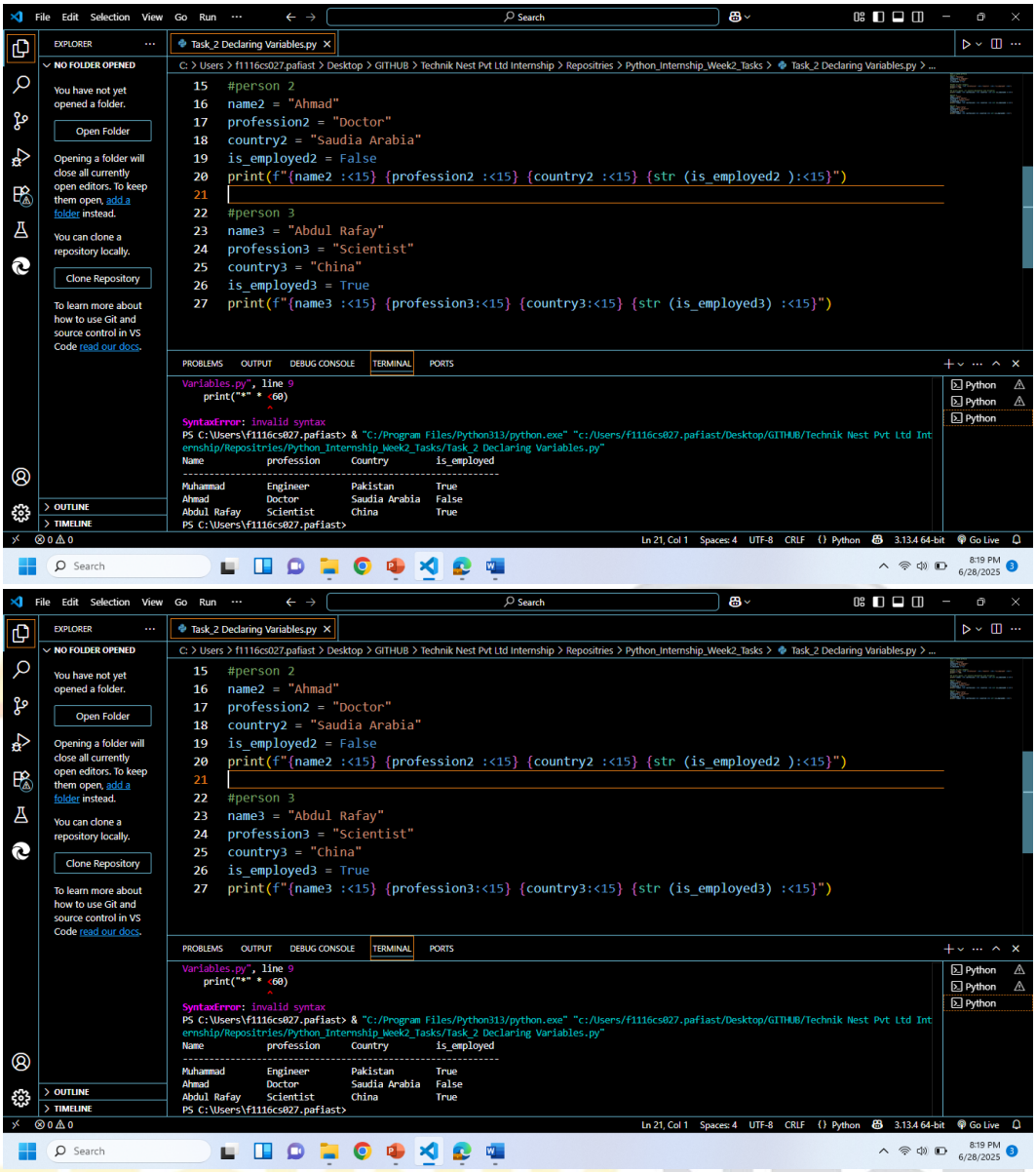
Name, profession, country, is_employed (Boolean)

Print their data in a tabular format using print() (not with external libraries).

Solution :

Code Snippet & Screenshot

```
#let's create porfolio
#person 1
name1 = "Muhammad"
profession1 = "Engineer"
country1 = "Pakistan"
is_employed1 = True
#header to show category
print(f"{'Name' :<15} {"profession" :<15} {"Country" :<15} {"is_employed" :<15}")
print("-" * 60)
#15 prints spaces, str converts BooleanTrue into StringTrue
print(f"{name1 :<15} {profession1 :<15} {country1 :<15} {str (is_employed1 ):<15}")
#person 2
name2 = "Ahmad"
profession2 = "Doctor"
country2 = "Saudia Arabia"
is_employed2 = False
print(f"{name2 :<15} {profession2 :<15} {country2 :<15} {str (is_employed2 ):<15}")
#person 3
name3 = "Abdul Rafay"
profession3 = "Scientist"
country3 = "China"
is_employed3 = True
print(f"{name3 :<15} {profession3:<15} {country3:<15} {str (is_employed3) :<15}")
```



Explanation:

- Created profiles for each person.
- Create Header for table using simple Print() function.
- Print all profiles in tabular form using “f” string and table spaces.

Task 3 :

Declares five different variables , Stores a different data type in each (e.g., string, integer, float, boolean, complex)

Prints their values and data types

Then, converts each variable to a different type (where possible) and prints the new types

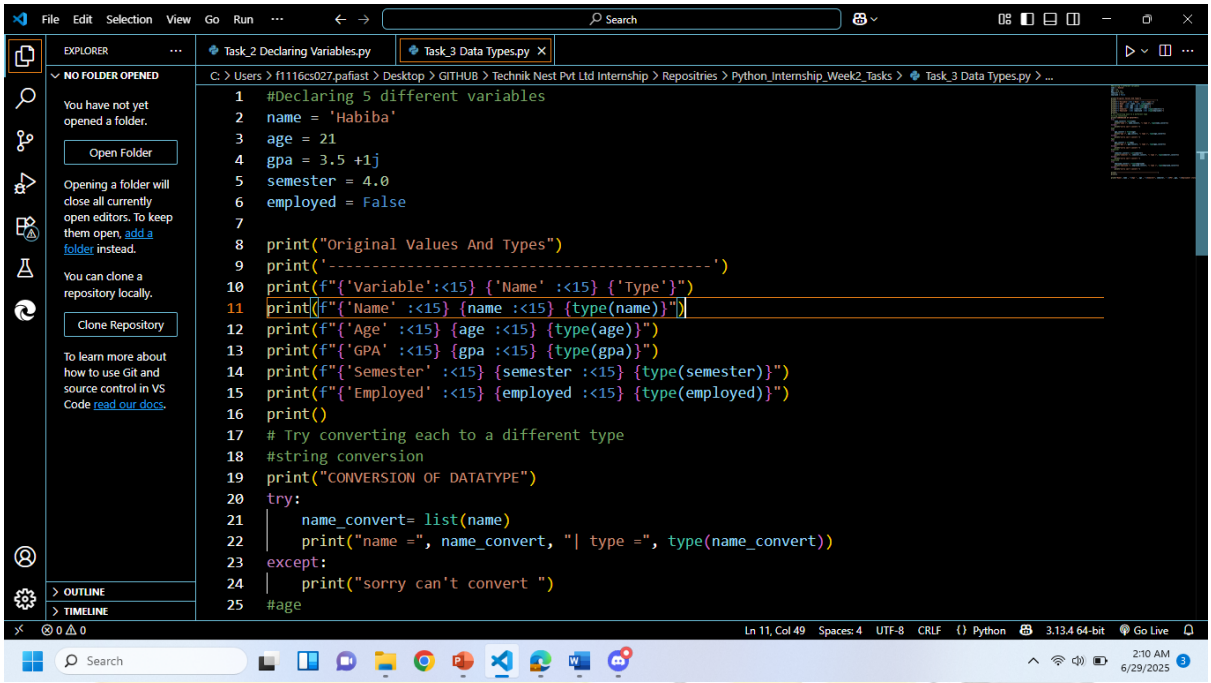
Note: You may not be able to convert all types — handle errors or comment why.

Solution :

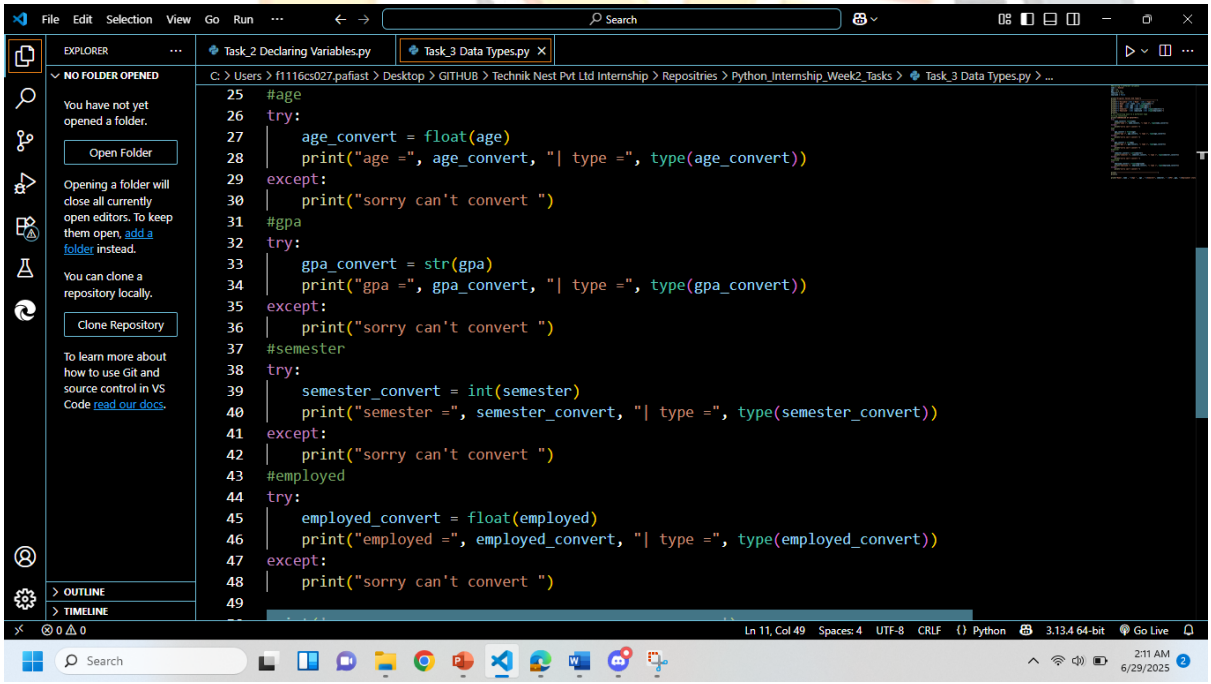
Code Snippet & Screenshot

```
#Declaring 5 different variables
name = 'Habiba'
age = 21
gpa = 3.5 +1j
semester = 4.0
employed = False
print("Original Values And Types")
print('-----------------------------------------')
print(f"{'Variable':<15} {'Name' :<15} {'Type'}")
print(f"{'Name' :<15} {name :<15} {type(name)}")
print(f"{'Age' :<15} {age :<15} {type(age)}")
print(f"{'GPA' :<15} {gpa :<15} {type(gpa)}")
print(f"{'Semester' :<15} {semester :<15} {type(semester)}")
print(f"{'Employed' :<15} {employed :<15} {type(employed)}")
print()
# Try converting each to a different type
#string conversion
print("CONVERSION OF DATATYPE")
try:
    name_convert= list(name)
    print("name =", name_convert, "| type =", type(name_convert))
except:
    print("sorry can't convert ")
#age
try:
    age_convert = float(age)
```

```
    print("age =", age_convert, "| type =", type(age_convert))
except:
    print("sorry can't convert ")
#gpa
try:
    gpa_convert = str(gpa)
    print("gpa =", gpa_convert, "| type =", type(gpa_convert))
except:
    print("sorry can't convert ")
#semester
try:
    semester_convert = int(semester)
    print("semester =", semester_convert, "| type =", type(semester_convert))
except:
    print("sorry can't convert ")
#employed
try:
    employed_convert = float(employed)
    print("employed =", employed_convert, "| type =", type(employed_convert))
except:
    print("sorry can't convert ")
print('-----------------------------------------')
print()
print("Name", name , "\nAge " , age , "\nSemester", semester, " \nGPA", gpa,
"\nEmployment status ", employed)
```



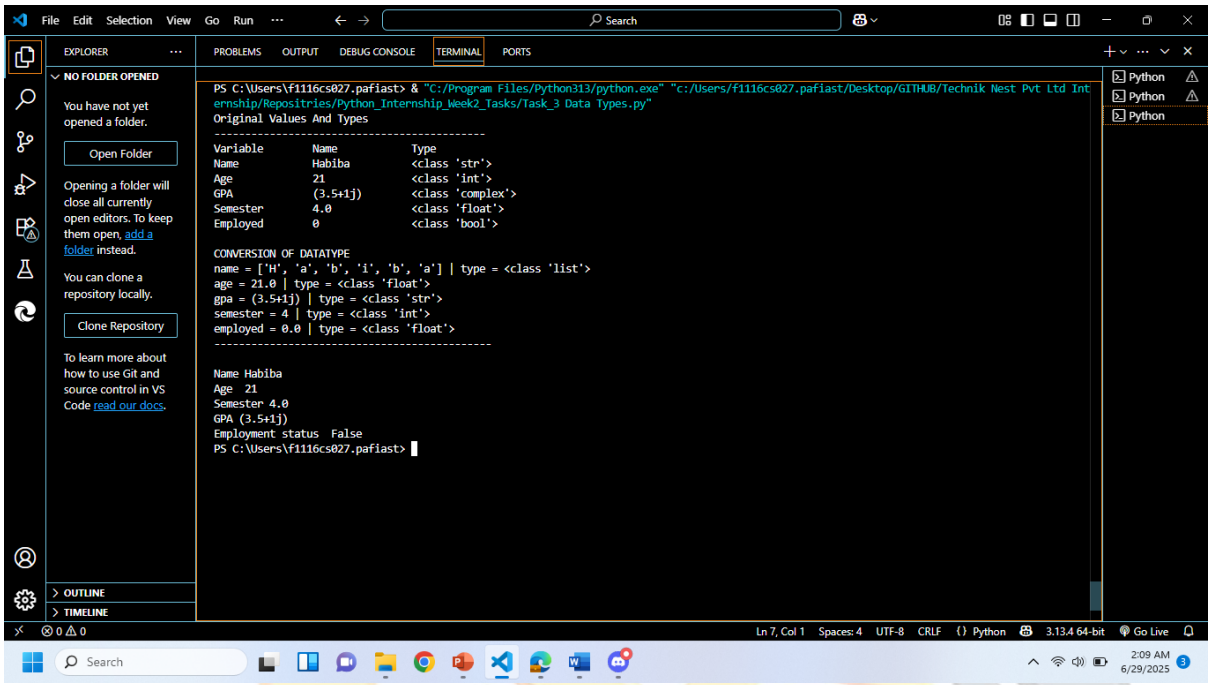
```python
#Declaring 5 different variables
name = 'Habiba'
age = 21
gpa = 3.5 +1j
semester = 4.0
employed = False

print("Original Values And Types")
print('-----------------------------------------')
print(f"{'Variable':<15} {'Name' :<15} {'Type'}")
print(f"{'Name' :<15} {name :<15} {type(name)}")
print(f"{'Age' :<15} {age :<15} {type(age)}")
print(f"{'GPA' :<15} {gpa :<15} {type(gpa)}")
print(f"{'Semester' :<15} {semester :<15} {type(semester)}")
print(f"{'Employed' :<15} {employed :<15} {type(employed)}")
print()
# Try converting each to a different type
#string conversion
print("CONVERSION OF DATATYPE")
try:
    name_convert= list(name)
    print("name =", name_convert, "| type =", type(name_convert))
except:
    print("sorry can't convert ")
#age
```



```python
#age
try:
    age_convert = float(age)
    print("age =", age_convert, "| type =", type(age_convert))
except:
    print("sorry can't convert ")
#gpa
try:
    gpa_convert = str(gpa)
    print("gpa =", gpa_convert, "| type =", type(gpa_convert))
except:
    print("sorry can't convert ")
#semester
try:
    semester_convert = int(semester)
    print("semester =", semester_convert, "| type =", type(semester_convert))
except:
    print("sorry can't convert ")
#employed
try:
    employed_convert = float(employed)
    print("employed =", employed_convert, "| type =", type(employed_convert))
except:
    print("sorry can't convert ")

```

```python
print('-----------------------------------------')
print()

print("Name", name , "\nAge " , age , "\nSemester", semester, " \nGPA", gpa, "\nEmployment statu


```

Output:



Explanation:

- First I declare 5 variables and then print their Original values and datatypes using Type.
- And then converted their types using Try & Except. Which will prevent the program from crash if some of them wont be able to convert their type like Complex.

Task 4 :

Create a data type tester:

Ask the user to input any value. , Detect and print what Python guesses its type as (use type()).

Add conditions to identify if it's likely an integer, float, or string, and print a message like:

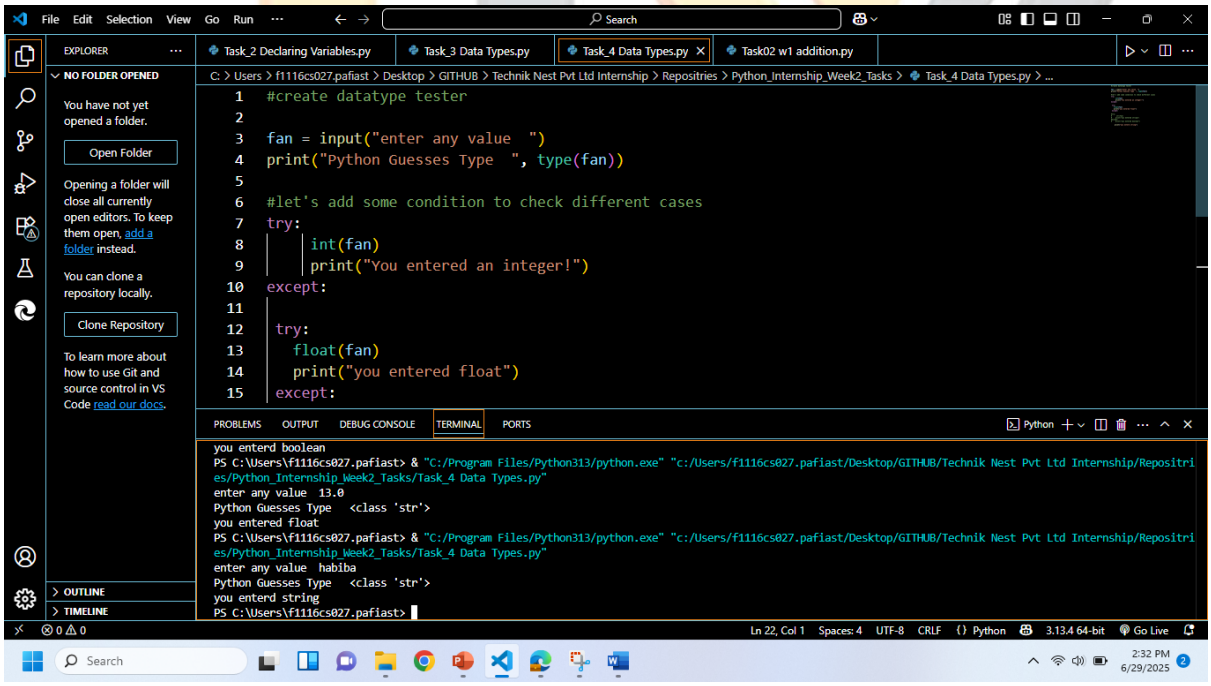
"You entered a float!"

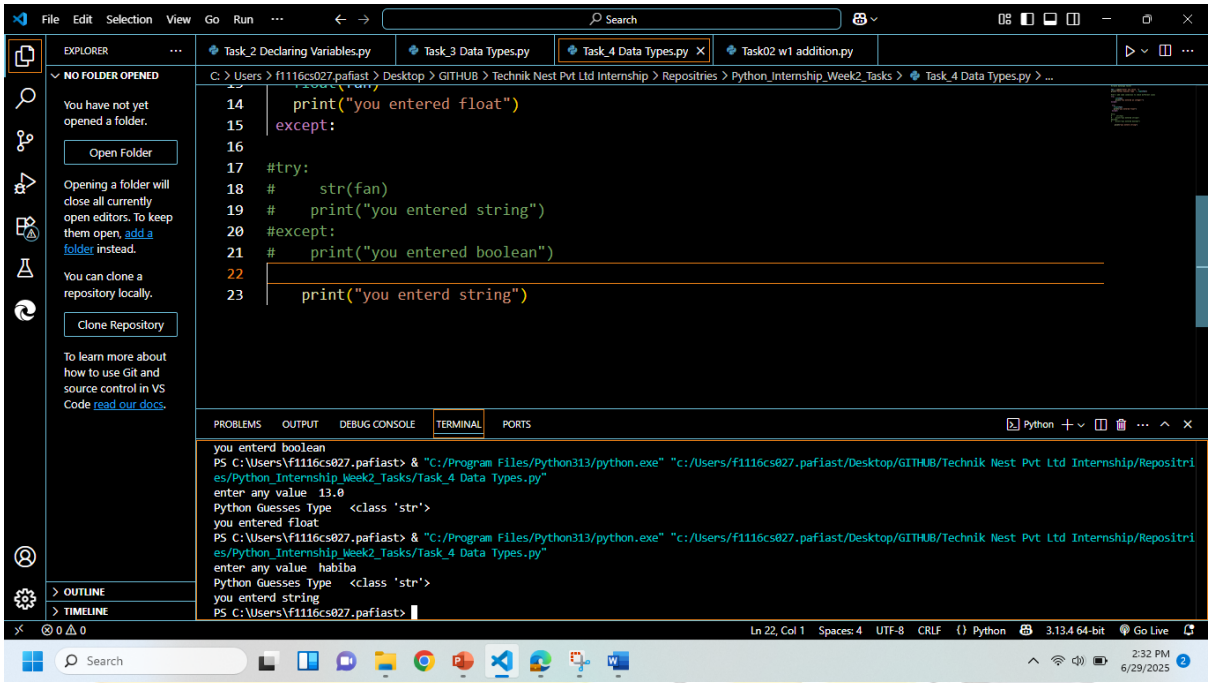
Solution :

Code Snippet & Screenshot

```
#create datatype tester

fan = input("enter any value  ")

print("Python Guesses Type  ", type(fan))
```

```
#let's add some condition to check different cases
try:
    int(fan)
    print("You entered an integer!")
except:
 try:
   float(fan)
   print("you entered float")
 except:
#try:
#    str(fan)
#   print("you entered string")
#except:
#   print("you entered boolean")
   print("you enterd string")
```





Explanation:

- Create Tester, ask user to input value and let python guesses its data type.
- As python guesses every value as string Then I add Try & Except to check different datatypes when user enters anything.
- I did also use string in try but then I realize its already exist by default so I shift it to except.
- Now my code can recognize the 2 datatypes, int, float and off course string by default.

Task 5 :

Design a command-line survey that:

Asks the user 5 different questions (e.g., name, favorite food, birth year, favorite number, favorite language)

Then prints a summary of all responses in sentence format.

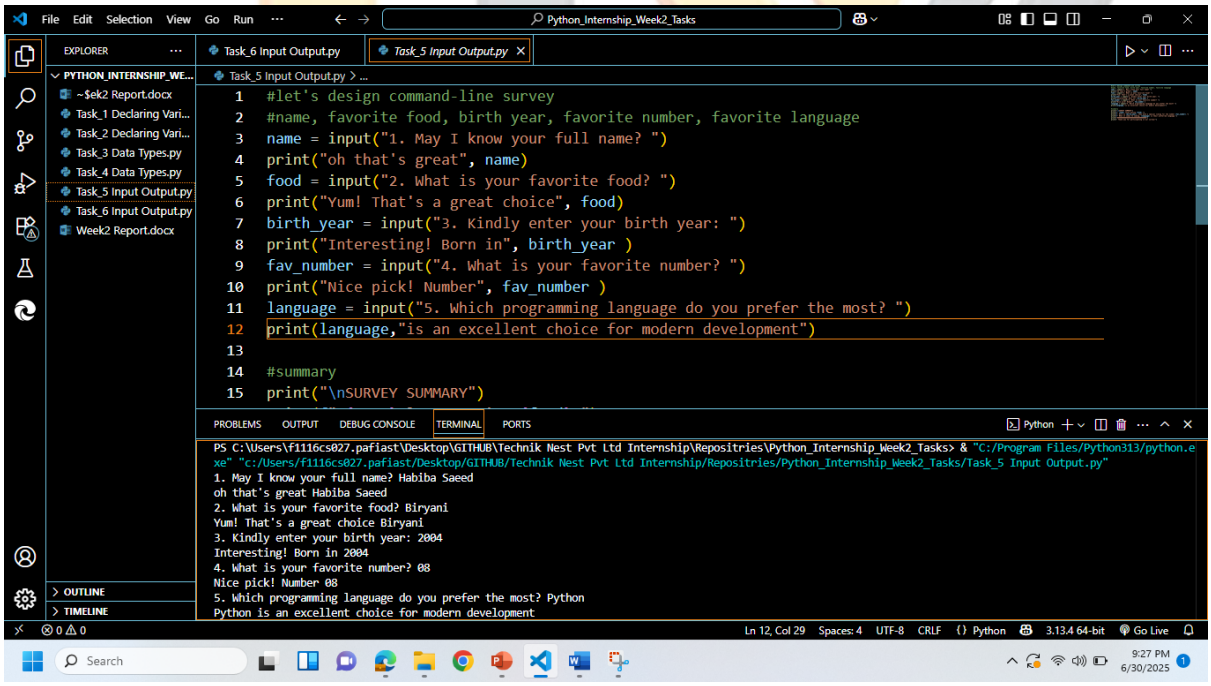
Use formatting to make the output look professional (e.g., f-strings).

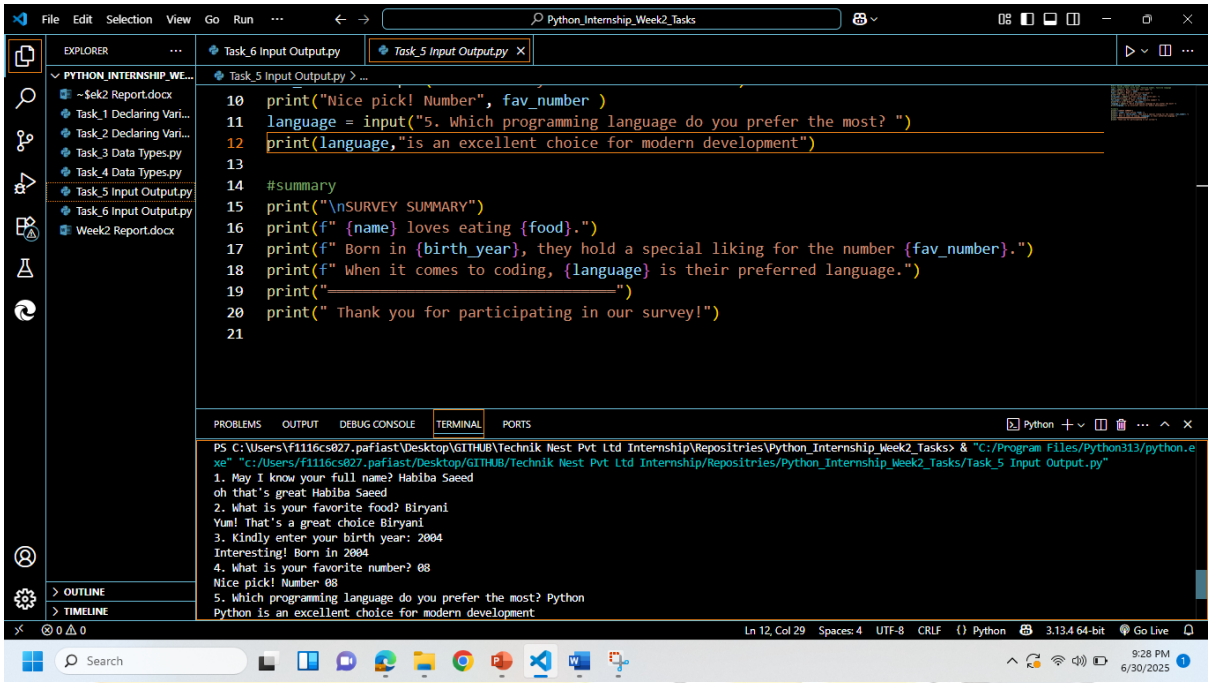
Solution :

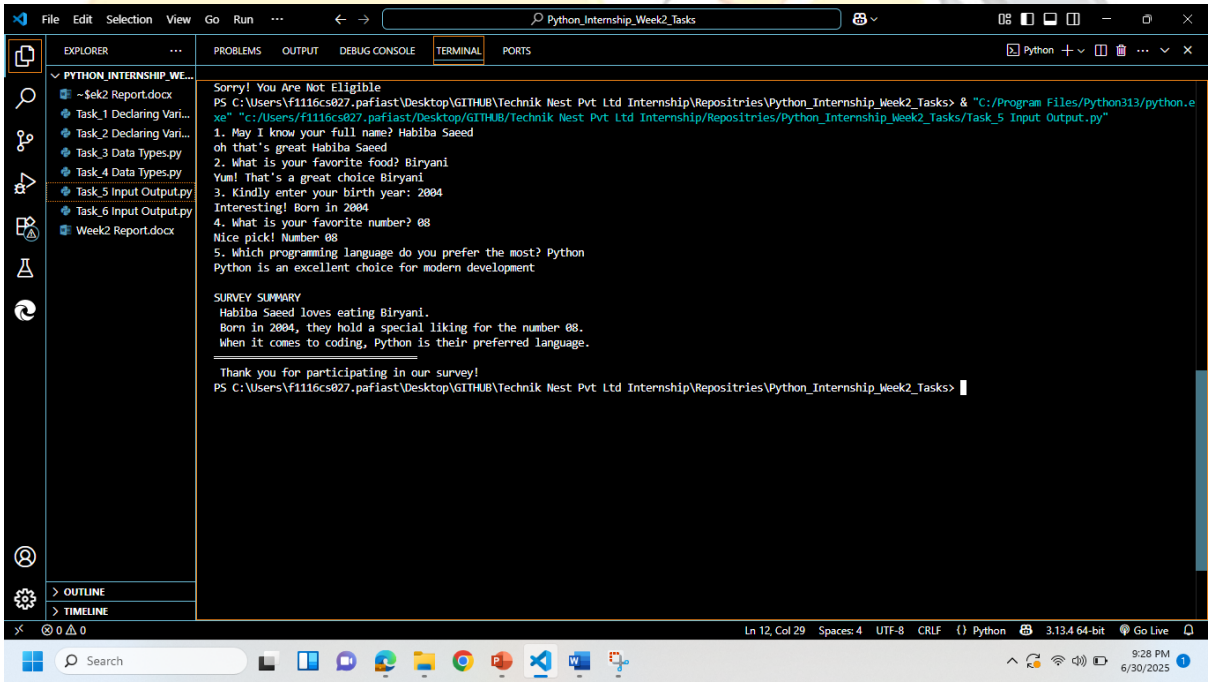
Code Snippet & Screenshot

```
#let's design command-line survey

#name, favorite food, birth year, favorite number, favorite language

name = input("1. May I know your full name? ")

print("oh that's great", name)
```

```
food = input("2. What is your favorite food? ")
print("Yum! That's a great choice", food)
birth_year = input("3. Kindly enter your birth year: ")
print("Interesting! Born in", birth_year )
fav_number = input("4. What is your favorite number? ")
print("Nice pick! Number", fav_number )
language = input("5. Which programming language do you prefer the most? ")
print(language,"is an excellent choice for modern development")
#summary
print("\nSURVEY SUMMARY")
print(f" {name} loves eating {food}.")
print(f" Born in {birth_year}, they hold a special liking for the number {fav_number}.")
print(f" When it comes to coding, {language} is their preferred language.")
print("═══════════════════════════════════════════════════")
print(" Thank you for participating in our survey!")
```







Explanation:

- I Take 5 questions from user as part of survey.
- Then print it in paragraph in professional manner to show input / output.

Task 6 :

Ask the user to:

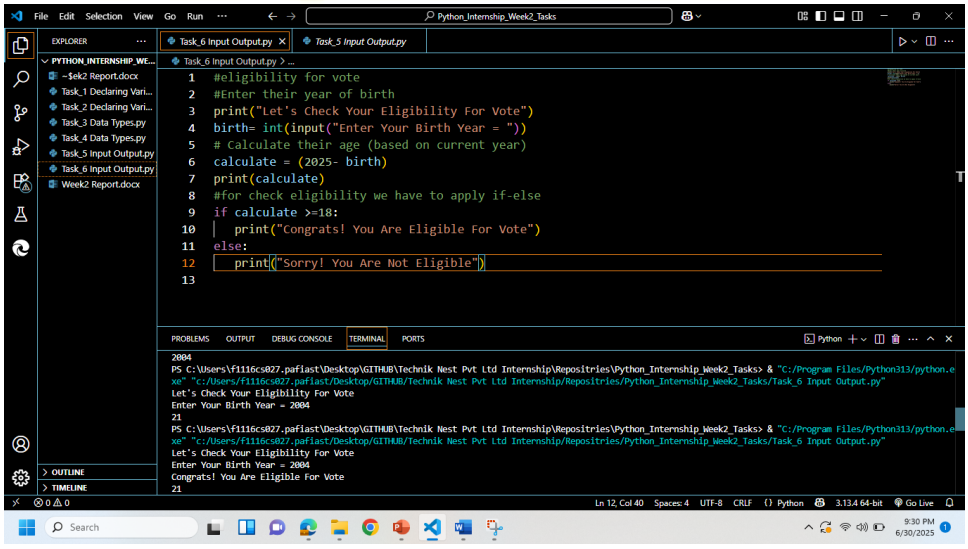
Enter their year of birth , Calculate their age (based on current year) ,Check if the user is eligible to vote (18+ years)

Display a message: "You are eligible to vote." or "You are not eligible to vote yet."

Solution :

Code Snippet & Screenshot

```
#eligibility for vote
#Enter their year of birth
print("Let's Check Your Eligibility For Vote")
birth= int(input("Enter Your Birth Year = "))
# Calculate their age (based on current year)
calculate = (2025- birth)
print(calculate)
#for check eligibility we have to apply if-else
if calculate >=18:
  print("Congrats! You Are Eligible For Vote")
else:
  print("Sorry! You Are Not Eligible")
```



Explanation:

- Take birth year from user.
- Subtract it from current year to check the age of user.
- Print their age.
- And then displays a msg if user is eligible using If/Else statement.

Task 7:

Create a marks percentage calculator:

Ask user to input marks for 5 subjects (input as strings) , Convert them to integers

Calculate the total and percentage

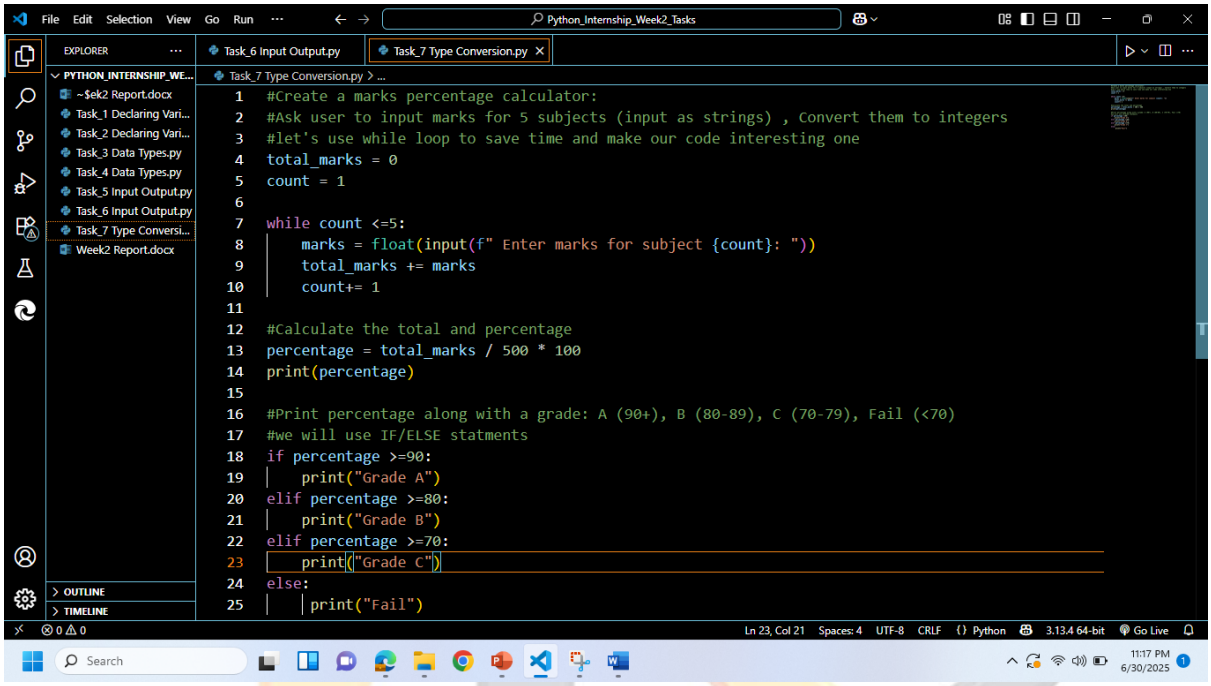
Print percentage along with a grade: A (90+), B (80-89), C (70-79), Fail (<70)

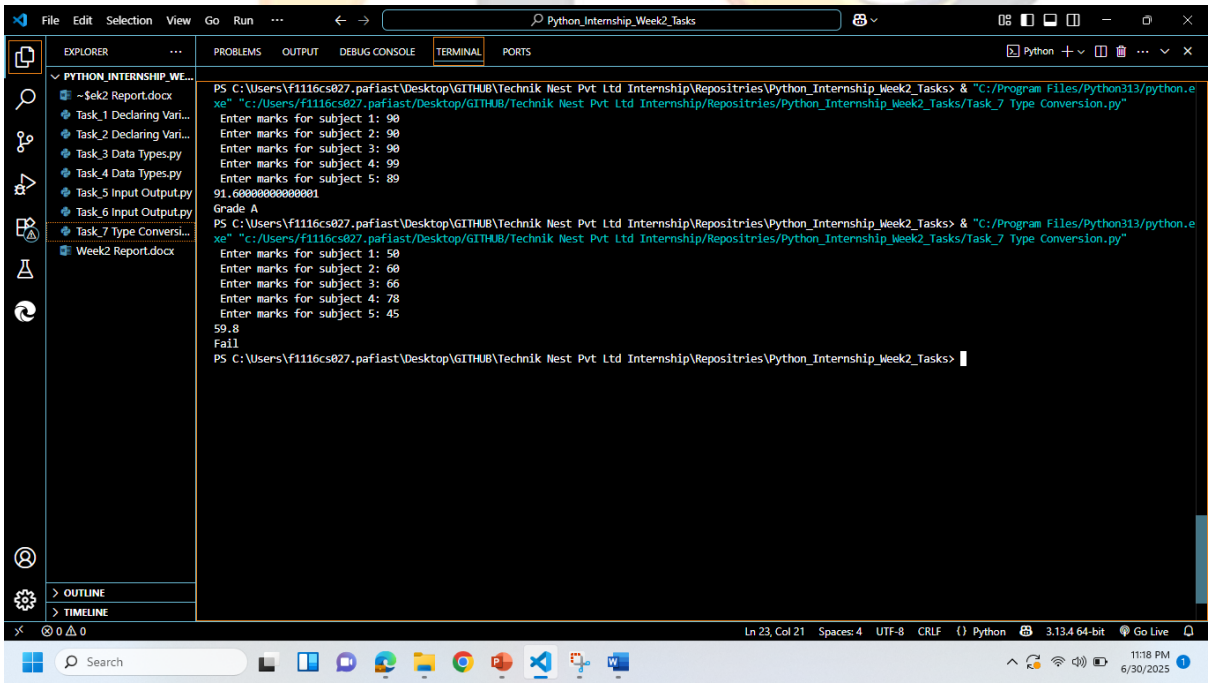
Solution :

Code Snippet & Screenshot

```
#Create a marks percentage calculator:
#Ask user to input marks for 5 subjects (input as strings) , Convert them to integers
#let's use while loop to save time and make our code interesting one
total_marks = 0
count = 1
while count <=5:
    marks = float(input(f" Enter marks for subject {count}: "))
    total_marks += marks
    count+= 1
#Calculate the total and percentage
percentage = total_marks / 500 * 100
print(percentage)
#Print percentage along with a grade: A (90+), B (80-89), C (70-79), Fail (<70)
#we will use IF/ELSE statments
if percentage >=90:
    print("Grade A")
elif percentage >=80:
```

```
    print("Grade B")
elif percentage >=70:
    print("Grade C")
else:
     print("Fail")
```





Explanation:

- I started from While Loop as it is quite boring to collect data in a similar way in every code.
- It also makes my code looks good and saves my time as well.
- I was stuck on count += 1 because that was not in the loop, and I kept on fixing other things.
- Then I counted percentage.
- Uses if/else to adjust the conditions for grading.

Task 8:

Create a temperature converter:

Ask the user to input temperature in Celsius.

Convert it to Fahrenheit using: F = (C * 9/5) + 32 , Then reverse: Ask for Fahrenheit, convert it to Celsius.

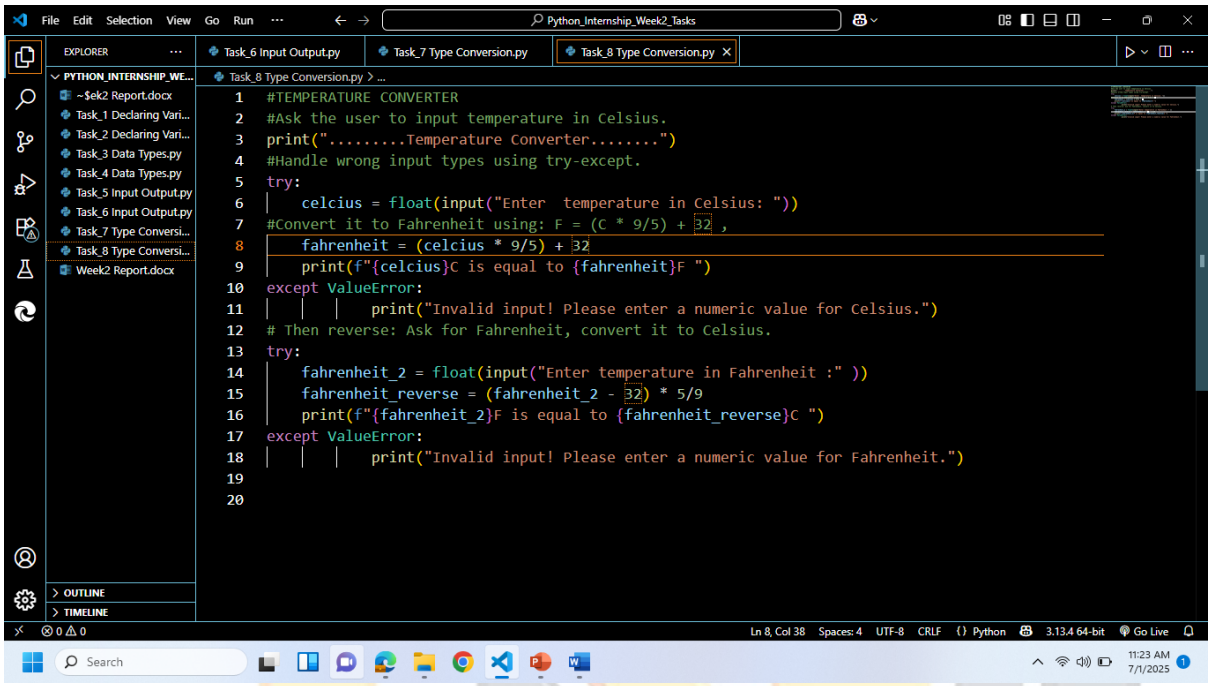
Handle wrong input types using try-except.

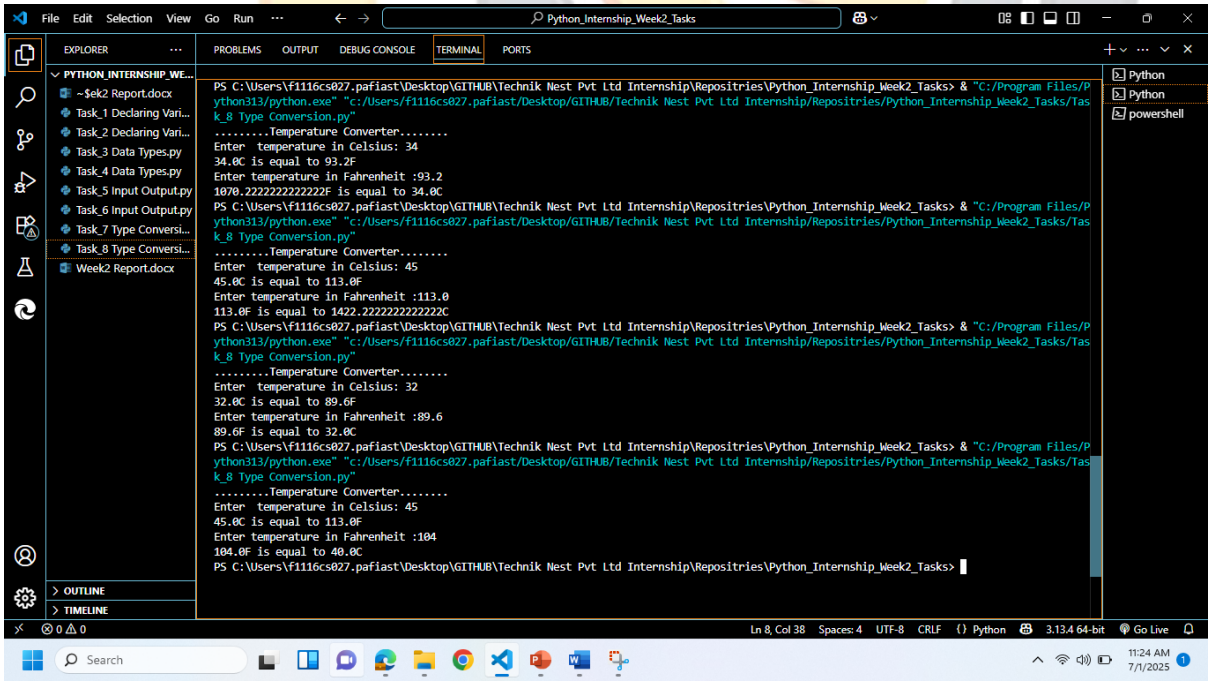
Solution :

Code Snippet & Screenshot

```
#TEMPERATURE CONVERTER
#Ask the user to input temperature in Celsius.
print(".....Temperature Converter.....")
#Handle wrong input types using try-except.
try:
    celcius = float(input("Enter  temperature in Celsius: "))
#Convert it to Fahrenheit using: F = (C * 9/5) + 32 ,
    fahrenheit = (celcius * 9/5) + 32
    print(f"{celcius}C is equal to {fahrenheit}F ")
except ValueError:
        print("Invalid input! Please enter a numeric value for Celsius.")
# Then reverse: Ask for Fahrenheit, convert it to Celsius.
try:
    fahrenheit_2 = float(input("Enter temperature in Fahrenheit :" ))
    fahrenheit_reverse = (fahrenheit_2 - 32) * 5/9
    print(f"{fahrenheit_2}F is equal to {fahrenheit_reverse}C ")
```

```
except ValueError:
        print("Invalid input! Please enter a numeric value for Fahrenheit.")
```





Explanation:

- Take values from user and convert them using formulas.
- I did minor mistakes while calculations and run the terminal accordingly to fix errors.
- Try/except logic is also used for to handle wrong input.
