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Internship Domain: python

Task week : 2

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TASK 1

Description

This Python program stores and displays personal information such as name, age, country, and hobby using variables. It also calculates the expected graduation year and how many years are left until graduation based on the current year. The program then prints all this information in a formatted and readable way using f-strings.

Program

task1.py > ...

```python
#Week2 task1
#Profile information
Name = "Husnain Ali"
age = 24
current_year = 2025
country = "Pakistan"
hobby = "social anlysis"
expected_graduation_year = 2025+1

years_left = expected_graduation_year - current_year

print("My Profile Information")
print(f"Name: {Name}")
print(f"Age: {age}")
print(f"Current Year: {current_year}")
print(f"Country: {country}")
print(f"Hobby: {hobby}")
print(f"Expected Graduation Year: {expected_graduation_year}")
print(f"Years left for graduation: {years_left}")

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task1.py
My Profile Information
Name: Husnain Ali
Age: 24
Current Year: 2025
Country: Pakistan
Hobby: social anlysis
Expected Graduation Year: 2026
Years left for graduation: 1
PS F:\python>
```

TASK 2

Discription

This Python program stores and displays information for three different user profiles. Each profile contains a person's name, profession, country, and employment status using separate variables. The `is_employed` variable (with `True` or `False`) is used to check whether the person is currently employed. When displaying each profile using formatted strings (f-strings), a conditional expression is used to print "yes" if the person is employed, or "no" if not. The program prints all three profiles in a clean and readable format with clear separators for each.

PROGRAM

task2.py > ...

```python
# User Profile 1
name1 = "Ali"
profession1 = "Software Engineer"
country1 = "Pakistan"
employment_status1 = True
# User Profile 2

name2 = " samra"
profession2 = "Data Scientist"
country2 = "Pakistan"
employment_status2 = False
# user_profile3
name3 = "Danish"
profession3 = "web developer"
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
===============
 User Profile 1
===============
Name: Ali
Profession: Software Engineer
Country: Pakistan
Employment Status: True
===============
 User Profile 2
===============
Name:  samra
Profession: Data Scientist
Country: Pakistan
Profession: Data Scientist
Profession: Data Scientist
Country: Pakistan
Employment Status: False
---------------
```

TASK 3

Discription

This Python program demonstrates the use of different data types and how to convert them. It starts by declaring variables of various types including `string` (name), `integer` (age), `float` (height), `boolean` (is_student), and `complex` (complex_number). It then uses the `type()` function to display the original data types of each variable. In the second part, the code converts each variable into a different data

type using casting functions like `str()`, `int()`, `float()`, and `bool()`. Finally, it prints the new data types after conversion to show how the variables have changed.

PROGRAM

task3.py > ...

```
17  # Convert string to float (will fail)
18  try:
19      name_float = float(name)
20  except ValueError:
21      name_float = "Cannot convert string to float"
22  print(f"name to float= {name_float}      => {type(name_float)}")
23
24  # Convert integer to string
25  age_str = str(age)
26  print(f"age to str= {age_str}                                    => {type(age_str)}
27
28  # Convert float to integer
29  height_int = int(height)
30  print(f"height to int= {height_int}                                      => {type(heig
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task3.py
Print Values and Data Types:
name= Ali.......<class 'str'>
age= 25.........<class 'int'>
height= 5.9.....<class 'float'>
is_student= True.....<class 'bool'>
z= (2+3j).........<class 'complex'>

After Conversion:
name to float= Cannot convert string to float     => <class 'str'>
age to str= 25                                      => <class 'str'>
height to int= 5                                     => <class 'int'>
is_student to str= True                            => <class 'str'>
z to float=Cannot convert complex to float           => <class 'str'>
PS F:\python>
```

TASK4

Dscription

This Python program takes an input from the user and identifies its data type (integer, float, or string). It first checks whether the input contains only digits using the `.isdigit()` method — if true, it classifies the input as an integer. If the input contains a dot `"."`, it then tries to convert it to a float using `float()`. If the conversion succeeds, it prints that the input is a float; otherwise, it catches the

`ValueError` and prints that the input is a string. This is a simple type-checking program using conditional statements and exception handling.

```
task4.py > ...
1   input=input("Enter a value: ")
2   value = input.strip()
3
4
5   if value.isdigit():
6       print("Integer!")
7   elif "." in value and value.replace(".","").isdigit():
8       print("Float!")
9   else:
10      print("String!")
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task4.py
Enter a value: husnain
String!
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task4.py
Enter a value: 2
Integer!
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task4.py
Enter a value: 2.2
Float!
PS F:\python>
```

TASK 5

Discription

This Python program interacts with the user by taking multiple inputs: their name, favorite food, birth date, favorite number, and favorite language. It uses the `input()` function to collect each response from the user and stores them in separate variables. Finally, it displays a personalized message using **f-string formatting**, combining all the inputs into a single sentence that summarizes the user's details in a neat and readable way.

Program

task5.py > ...

```python
print("===survay===\n")
name= input("Enter your name: ")
fvrt_food= input("Enter your favorite food: ")
birth_year= input("Enter your birth year: ")
fvrt_num= input("Enter your favorite number: ")
language= input("Enter your favorite programming language: ")
print("\n=== Print Result===\n")
print(f"Name: {name}")
print(f"Favorite Food: {fvrt_food}")
print(f"Birth Year: {birth_year}")
print(f"Favorite Number: {fvrt_num}")
print(f"Favorite Programming Language: {language}")
print("\n=== Thanks ===\n")
```

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```
Enter your name: husnain
Enter your favorite food: baryani
Enter your birth year: 2002
Enter your favorite number: 9
Enter your favorite programming language: Punjabi

=== Print Result===

Name: husnain
Favorite Food: baryani
Birth Year: 2002
Favorite Number: 9
Favorite Programming Language: Punjabi

=== Thanks ===
```

Task 6

Discretion

This Python program calculates a user's age based on the birth year and current year provided by the user through input. It converts both inputs from strings to integers and calculates the age by subtracting the birth year from the current year. After calculating the age, the program uses an `if-else` condition to check if the user is 18 or older. If the user is under 18, it prints that they are not eligible to vote; otherwise, it prints that they are eligible to vote.

Program

task6.py > ...

```python
birth_year= int(input("Enter your year of birth: "))
current_year =2025
age = current_year - birth_year
print(f"You are {age} years old.")
if age>18:
    print("You are eligible to vote.")
else:
    print("You are not eligible to vote ")
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task6.py
Enter your year of birth: 2002
You are 23 years old.
You are eligible to vote.
PS F:\python>
```

TASK:7

DISCRIPTION

This Python program calculates the total marks, percentage, and grade of a student based on the marks entered for five subjects. It takes input from the user for each subject, calculates the total by adding all five, and then computes the percentage assuming the total possible marks are 500. Based on the percentage, the program uses an `if-elif-else` structure to assign a grade: "A" for 90% and above, "B" for 80–89%, "C" for 70–79%, and "Fail" for anything below 70%. Finally, it prints the total marks, percentage (rounded to 2 decimal places), and the grade.

task7.py > ...

```python
print("=== Marks Percentage Calculator ===")
subjects = ["Math", "Science", "English", "Social Studies", "Computer Science"]
marks = []

for subject in subjects:
    mark = int(input(f"Enter marks for {subject} (out of 60): "))
    marks.append(mark)

total = sum(marks)
percentage = (total / 300) * 100

# Determine grade
if percentage >= 90:
    grade = "A"
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe f:/python/task7.py
=== Marks Percentage Calculator ===
Enter marks for Math (out of 60): 50
Enter marks for Science (out of 60): 23
Enter marks for English (out of 60): 45
Enter marks for Social Studies (out of 60): 34
Enter marks for Computer Science (out of 60): 50

Total Marks: 202/500
Percentage: 67.33%
Grade: D
PS F:\python>
```

Task 8

Description

This Python program performs temperature conversion between Celsius and Fahrenheit. It first asks the user to input a temperature in Celsius, converts it to Fahrenheit using the formula `(C × 9/5) + 32`, and displays the result with two decimal places. Then, it asks for a temperature in Fahrenheit, converts it back to Celsius using the formula `(F − 32) × 5/9`, and prints the converted temperature. The program uses `float()` for handling decimal input and `f-strings` for formatted output.

Program

task8.py > ...

```
print("=== Temperature Converter ===")

# Celsius to Fahrenheit
try:
    celsius = float(input("Enter temperature in Celsius: "))
    fahrenheit = (celsius * 9/5) + 32
    print(f"{celsius}°C is {fahrenheit:.2f}°F")
except ValueError:
    print("Invalid input! Please enter a numeric value for Celsius

# Fahrenheit to Celsius
try:
    fahrenheit_input = float(input("Enter temperature in Fahrenhei
    celsius_converted = (fahrenheit_input - 32) * 5/9
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS F:\python> & C:/Users/hp/AppData/Local/Programs/Python/Python313/python.exe
=== Temperature Converter ===
Enter temperature in Celsius: 30
30.0°C is 86.00°F
Enter temperature in Fahrenheit: 97
97.0°F is 36.11°C
PS F:\python>
```