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Internship Domain: Python

Task Week: 2

Instructor Name: Hassan Ali

Solution:

Task 1

```
[2]: full_name = "Aisha Khan"
age = 20
current_year = 2025
country = "Pakistan"
hobby = "None"
expected_graduation_year = current_year + 2
years_left = expected_graduation_year - current_year

print("     ******       Mini Profile:          *******    ")
print(f"My name is {full_name}. I am {age} years old and live in {country}.")
print(f"My hobby is {hobby}. The current year is {current_year}, and I expect to graduate in {expected_graduation_year}.")
print(f"There are {years_left} years left until I graduate.")
```

```
     ******       Mini Profile:          *******
My name is Aisha Khan. I am 20 years old and live in Pakistan.
My hobby is None. The current year is 2025, and I expect to graduate in 2027.
There are 2 years left until I graduate.
```

Solution:

Task 2

```
[4]: name1 = "Ali Raza"
profession1 = "Software Engineer"
country1 = "Pakistan"
is_employed1 = True

name2 = "Sara Malik"
profession2 = "Data Analyst"
country2 = "Dubai"
is_employed2 = False

name3 = "Salma Khan"
profession3 = "Teacher"
country3 = "Germany"
is_employed3 = True

print("           ******     User Profiles:          *******")
print(f"{'Name':<15} {'Profession':<20} {'Country':<15} {'Employed':<10}")
print("-" * 60)

print(f"{name1:<15} {profession1:<20} {country1:<15} {str(is_employed1):<10}")
print(f"{name2:<15} {profession2:<20} {country2:<15} {str(is_employed2):<10}")
print(f"{name3:<15} {profession3:<20} {country3:<15} {str(is_employed3):<10}")
```

```
           ******     User Profiles:          *******
Name           Profession           Country         Employed
------------------------------------------------------------
Ali Raza       Software Engineer    Pakistan        True
Sara Malik     Data Analyst         Dubai           False
Salma Khan     Teacher              Germany         True
```

Solution:

Task 3

```
var_str = "Hello"
var_int = 42
var_float = 3.14
var_bool = True
var_complex = 2 + 3j

print("Original Values and Types:")
print(f"String: {var_str} ({type(var_str)})")
print(f"Integer: {var_int} ({type(var_int)})")
print(f"Float: {var_float} ({type(var_float)})")
print(f"Boolean: {var_bool} ({type(var_bool)})")
print(f"Complex: {var_complex} ({type(var_complex)})")

print("\n     *******      Converted Values and Types:          ******\n")
try:
    converted_str = int(var_str)
except ValueError:
    converted_str = "Conversion to int failed"
print(f"String to Int: {converted_str}")

converted_int = float(var_int)
print(f"Int to Float: {converted_int} ({type(converted_int)})")

converted_float = str(var_float)
print(f"Float to String: {converted_float} ({type(converted_float)})")

converted_bool = int(var_bool)
print(f"Boolean to Int: {converted_bool} ({type(converted_bool)})")

converted_complex = str(var_complex)
print(f"Complex to String: {converted_complex} ({type(converted_complex)})")
```

```
Original Values and Types:
String: Hello (<class 'str'>)
Integer: 42 (<class 'int'>)
Float: 3.14 (<class 'float'>)
Boolean: True (<class 'bool'>)
Complex: (2+3j) (<class 'complex'>)

     *******      Converted Values and Types:          ******

String to Int: Conversion to int failed
Int to Float: 42.0 (<class 'float'>)
Float to String: 3.14 (<class 'str'>)
Boolean to Int: 1 (<class 'int'>)
Complex to String: (2+3j) (<class 'str'>)
```

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Solution:

Task 4

```
user_input = input("\nEnter any value: ")
print(f"\nPython sees this as type: {type(user_input)}")
new = type(user_input)

if new == "int":
    print("You entered an integer!")
elif new == "str":
    print("You entered an string!")
else:
    print("You entered a float!")
```

```
Enter any value:  4.5

Python sees this as type: <class 'str'>
You entered a float!
```

Solution:

Task 5

```
[15]: print("Welcome to the Quick Survey!\n")
name = input("1. What is your name? ")
favorite_food = input("2. What is your favorite food? ")
birth_year = input("3. What year were you born in? ")
favorite_number = input("4. What is your favorite number? ")
favorite_language = input("5. What is your favorite programming language? ")

print("\n      ******      Survey Summary        *******")
print(f"Hello {name}, great to have you here!")
print(f"You love eating {favorite_food}.")
print(f"You were born in {birth_year}, which makes you quite experienced!")
print(f"Your favorite number is {favorite_number} — interesting choice!")
print(f"And your favorite programming language is {favorite_language}. Awesome!")
```

```
Welcome to the Quick Survey!

1. What is your name?  ayesha
2. What is your favorite food?  pizza
3. What year were you born in?  2005
4. What is your favorite number?  24
5. What is your favorite programming language?  python

      ******      Survey Summary        *******
Hello ayesha, great to have you here!
You love eating pizza.
You were born in 2005, which makes you quite experienced!
Your favorite number is 24 — interesting choice!
And your favorite programming language is python. Awesome!
```

Solution:

Task 6

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

```
Enter your year of birth:  20

You are 2005 years old.
You are eligible to vote.
```

Solution:

Task 7

```
[19]: print("Welcome to the Marks Percentage Calculator!\n")
m1 = int(input("Enter marks for Subject 1: "))
m2 = int(input("Enter marks for Subject 2: "))
m3 = int(input("Enter marks for Subject 3: "))
m4 = int(input("Enter marks for Subject 4: "))
m5 = int(input("Enter marks for Subject 5: "))

total_marks = m1 + m2 + m3 + m4 + m5
percentage = (total_marks / 500) * 100

if percentage >= 90:
    grade = "A"
elif percentage >= 80:
    grade = "B"
elif percentage >= 70:
    grade = "C"
else:
    grade = "Fail"

print("\n  *********         Result           **********")
print(f"Total Marks: {total_marks}/500")
print(f"Percentage: {percentage:.2f}%")
print(f"Grade: {grade}")
```

```
Welcome to the Marks Percentage Calculator!

Enter marks for Subject 1:  45
Enter marks for Subject 2:  7
Enter marks for Subject 3:  65
Enter marks for Subject 4:  98
Enter marks for Subject 5:  65

  *********         Result           **********
Total Marks: 280/500
Percentage: 56.00%
Grade: Fail
```

Solution:

Task 8

```
[20]: print("\nWelcome to the Temperature Converter!\n")
try:
    celsius = float(input("Enter temperature in Celsius: "))
    fahrenheit = (celsius * 9/5) + 32
    print(f"{celsius:.2f}°C is equal to {fahrenheit:.2f}°F")
except ValueError:
    print("Invalid input! Please enter a numeric values")

try:
    fahrenheit_input = float(input("\nNow enter temperature in Fahrenheit: "))
    celsius_converted = (fahrenheit_input - 32) * 5/9
    print(f"{fahrenheit_input:.2f}°F is equal to {celsius_converted:.2f}°C")
except ValueError:
    print("Invalid input! Please enter a numeric values")
```

```
Welcome to the Temperature Converter!

Enter temperature in Celsius:  44
44.00°C is equal to 111.20°F

Now enter temperature in Fahrenheit:  88
88.00°F is equal to 31.11°C
```