Task 1: Personal Profile

In this task, I created a mini profile using variables like name, age, country, and hobby. I also calculated the expected graduation year by adding 4 to the current year. Finally, I printed all the information in proper sentence form, including how many years are left till graduation.

```python
## task 1
Name = "Zainab"
Hobby = "Reading books"
Age = 20
country = "Pakistan"
current_year=2025
graduation_year = current_year + 4
year_left = graduation_year - current_year
print(f"Full Name: {Name}")
print(f"Age: {Age} years old")
print(f"Country: {country}")
print(f"Current Year: {current_year}")
print(f"Hobby: {Hobby}")
print(f"Expected Graduation Year: {graduation_year}")
print(f"{year_left} years are left until graduation.")
```

```
Full Name: Zainab
Age: 20 years old
Country: Pakistan
Current Year: 2025
Hobby: Reading books
Expected Graduation Year: 2029
4 years are left until graduation.
```

Task 2: Table of Profiles

I created profile information for 3 people (Zainab, Ali, and Sara), including their name, profession, country, and employment status. I displayed all the data in a neat and formatted table using print() and string formatting.

```
21
22     # task 2
23     # profile of person 1
24     Name1="Zainab"
25     Profession1="Data Scientist"
26     Country1="Pakistan"
27     is_employed1=True
28
29     # profile of person 2
30     Name2="Ali"
31     Profession2="Software Engineer"
32     Country2="Pakistan"
33     is_employed2=False
34
35     # profile of person 3
36     Name3="Sara"
37     Profession3="Web Developer"
38     Country3="Pakistan"
39     is_employed3=True
40     💡
41     print("+---------+-------------------+-----------+-----------+")
42     print("|  Name   |     Profession    |  Country  |  Employed |")
43     print("+---------+-------------------+-----------+-----------+")
44     print(f"| {Name1:<7} | {Profession1:<17} | {Country1:<9} | {str(is_employed1):<9} |") Name1 = 'Zainab',
          Profession1 = 'Data Scientist', Country1 = 'Pakistan', is_employed1 = True
45     print(f"| {Name2:<7} | {Profession2:<17} | {Country2:<9} | {str(is_employed2):<9} |") Name2 = 'Ali',
          Profession2 = 'Software Engineer', Country2 = 'Pakistan', is_employed2 = False
46     print(f"| {Name3:<7} | {Profession3:<17} | {Country3:<9} | {str(is_employed3):<9} |") Name3 = 'Sara',
          Profession3 = 'Web Developer', Country3 = 'Pakistan', is_employed3 = True
47     print("+---------+-------------------+-----------+-----------+")
48     #-----------------------------------------------------------------------------------#
```

```
+---------+-------------------+-----------+-----------+
| Zainab  | Data Scientist    | Pakistan  | True      |
| Ali     | Software Engineer | Pakistan  | False     |
| Sara    | Web Developer     | Pakistan  | True      |
+---------+-------------------+-----------+-----------+
```

Task 3: Data Types and Type Conversion

I defined 5 variables (name, age, CGPA, studying status, height) and printed their values along with their data types using the type() function. Then I tried to convert their data types (e.g., string to int), which helped me understand how type conversion works and what kind of errors can occur if the data is not suitable for conversion.

```
48    #-----------------------------------------------------------------
49
50    # task 3
51    name="zainab"
52    age=20
53    cgpa=3.95
54    currentlystudying=True
55    height=5.3
56
57    print("Name",name,type(name))
58    print("Age",age,type(age)) age = 20
59    print("CGPA",cgpa,type(cgpa)) cgpa = 3.95
60    print("Student",currentlystudying,type(currentlystudying)) currentlystudying = True
61    print("Height",height,type(height)) height = 5.3
62
63    name= int(name)   # This will raise an error because 'name' is a string name = 'zainab'
64    age=float(age)   # This will raise an error because 'age' is an integer
65    cgpa=str(cgpa)   # This will raise an error because 'cgpa' is a float
66
```

```
Name zainab <class 'str'>
Age 20 <class 'int'>
CGPA 3.95 <class 'float'>
Student True <class 'bool'>
Height 5.3 <class 'float'>
```

Task 4: Data Type Tester

I created a simple program that asks the user to enter anything. Then, the program checks and prints
whether the entered value is a string, integer, or float. This helped me learn about how Python handles
input types.

```
#-----------------------------------------------------------------

## task 4

oftype=input("Enter any thing for testing purpose: ")
if type(oftype) == str:
    print("You Entered a String")
elif type(oftype) == int:
    print("You Entered an Integer")
elif type(oftype) == float:
    print("You Entered a Float")
```

Task 5: Command-Line Survey

In this task, I designed a mini survey where the user enters personal preferences like name, favorite food, birth year, favorite number, and favorite language. The program then displays a short summary report of the collected answers.

```
79   #------------------------------------------------------------------------#
80
81   # task 5   Design a command-line survey
82
83   Name=input("Enter your Name :")
84   favroitefood=input("Enter your favorite food :")
85   birthyear=int(input("Enter your Birth year :"))
86   favoritenumber=int(input("Enter your favorite number :"))
87   favoritelanguage=input("Enter your favorite language :")
88   print(f'Survey Results:\nName: {Name}\nFavorite Food: {favroitefood}\nBirth Year: {birthyear}\nFavorite Number:
     {favoritenumber}\nFavorite Language: {favoritelanguage}')
89
90
```

Task 6: Age and Voting Eligibility

The program asked the user for their birth year and calculated their current age. Based on the age, it printed whether the user is eligible to vote (18 or older). This task helped me practice using if-else statements.

```
#------------------------------------------------------------------------
#task 6
yearofbirth=int(input("Enter your Birth year:"))
currentage=2025-yearofbirth
print(f"Your current age is: {currentage}")
if currentage >= 18:
    print("You are eligible to vote.")
else:
    (f"You are not eligible to vote. ")
```

Task 7: Marks Percentage & Grade Calculator

This task collected marks for 5 subjects from the user. It calculated the percentage and displayed the grade based on the result. However, the if conditions had some logical issues. For example, the program incorrectly placed nested if-statements which caused multiple messages to appear incorrectly. This task helped me understand the importance of correct if-elif-else structure.

```python
#task 7

English=int(input("Enter your English marks: "))
Urdu=int(input("Enter your Urdu marks: "))
Maths=int(input("Enter your Maths marks: "))
Science=int(input("Enter your Science marks: "))
Computer=int(input("Enter your Computer marks: "))

percentage=(English+Urdu+Maths+Science+Computer)/5
if percentage >= 90:
    grade = "A+"
    print(f"Your percentage is {percentage}%, which is an A+ grade.")
    if 80 <= percentage <= 89:
        grade = "B"
    print(f"Your percentage is {percentage}%, which is an A grade.")
    if 70 <= percentage <= 79:
      grade = "B"
    print(f"Your percentage is {percentage}%, which is a B grade.")
elif percentage > 70:
    grade = "fail"
    print(f"Your percentage is {percentage}%, which is a C grade.")
```

Task 8: Temperature Converter

In this task, I created a Celsius-to-Fahrenheit and Fahrenheit-to-Celsius converter. I also added error handling using try-except to catch invalid inputs. This task helped me practice mathematical formulas and exception handling.

```python
#task 8
try:
    temperature = float(input("Enter the temperature in Celsius: "))
    fahrenheit = (temperature * 9/5) + 32
    print(f"The temperature in Fahrenheit is: {fahrenheit}°F")
    fahrenheit_input = float(input("Enter the temperature in Fahrenheit: "))
    celsius = (fahrenheit_input - 32) * 5/9
    print(f"The temperature in Celsius is: {celsius}°C")
except ValueError:
    print("Invalid input!")
```