

**Task 1 :Write a program that takes your name and age as input and prints a greeting like:**

**"Hello John , you are 20 year old"**

Algorithm:

1. Start the program
2. Ask the user to enter their name
3. Stores the entered name
4. Ask the user to enter their age
5. Stores the entered age
6. Combine the name and age using a string concatenation to make a sentence

### **Pseudo code**

Start

Display "enter a name"

Read

Display "enter a age"

Read

Set message = "Hello " + name + ", you are " + age + " years old."

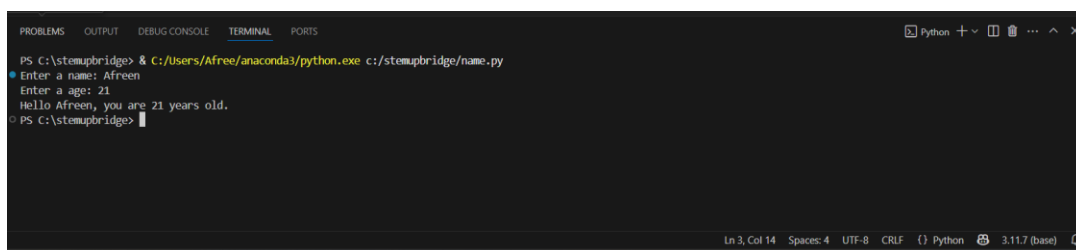
Display message

End

### **Code:**

```
name = input("Enter a name: ")
age = input("Enter a age: ")
print("Hello " + name + ", you are " + age + " years old.")
```

### **Output**



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\stemupbridge> & c:/Users/Afree/anaconda3/python.exe c:/stemupbridge/name.py
Enter a name: Afreem
Enter a age: 21
Hello Afreem, you are 21 years old.
PS C:\stemupbridge>
```

## **Task 2: Type Conversion Challenge**

**Take 2 numbers as input(strings), convert them to integers and print their sum difference and product.**

### **Algorithm:**

1. Start
2. Take input n1 and n2 as string
3. Convert n1 to integer and store in x and as follows n2 to y
4. Add x and y, store result in add
5. Subtract y from x, store result in sub
6. Multiply x and y, store result in mul
7. Print "Sum" with add
8. Print "Differences" with sub
9. Print "Multiplication" with mul
10. End

### **Pseudocode:**

START

INPUT n1

INPUT n2

$x \leftarrow \text{CONVERT } n1 \text{ TO INTEGER}$

$y \leftarrow \text{CONVERT } n2 \text{ TO INTEGER}$

$\text{add} \leftarrow x + y$

$\text{sub} \leftarrow x - y$

$\text{mul} \leftarrow x * y$

PRINT "Sum" + add

PRINT "Differences" + sub

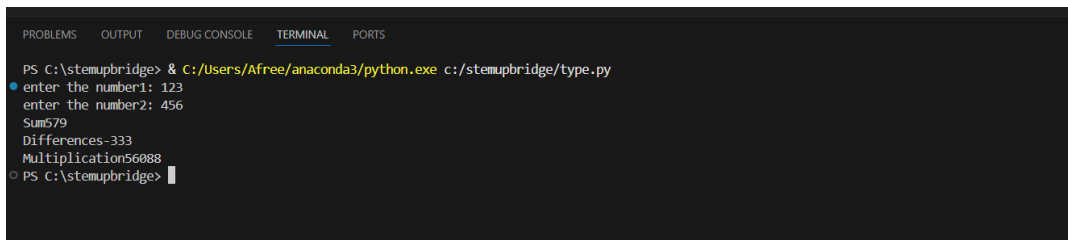
PRINT "Multiplication" + mul

END

### Code:

```
n1 = input("enter the number1: ")
n2 = input("enter the number2: ")
x = int(n1)
y = int(n2)
add = x + y
sub = x - y
mul = x * y
print("Sum" + str(add))
print("Differences" + str(sub))
print("Multiplication" + str(mul))
```

### Output:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/type.py
enter the number1: 123
enter the number2: 456
Sum579
Differences-333
Multiplication5688
PS C:\stemupbridge>
```

### **Task 3: Data type classification**

**Identify the data type of the following inputs in your language of choice :**

#### **Algorithm:**

1. Start
2. Create or use values: "123", 123, 123.45, True, "Hello"
3. Use the type() function to find the data type of each value
4. Print the result for each
5. End

#### **Pseudocode:**

START

SET value1 = "123"

SET value2 = 123

SET value3 = 123.45

SET value4 = True

SET value5 = "Hello"

PRINT type of value1

PRINT type of value2

PRINT type of value3

PRINT type of value4

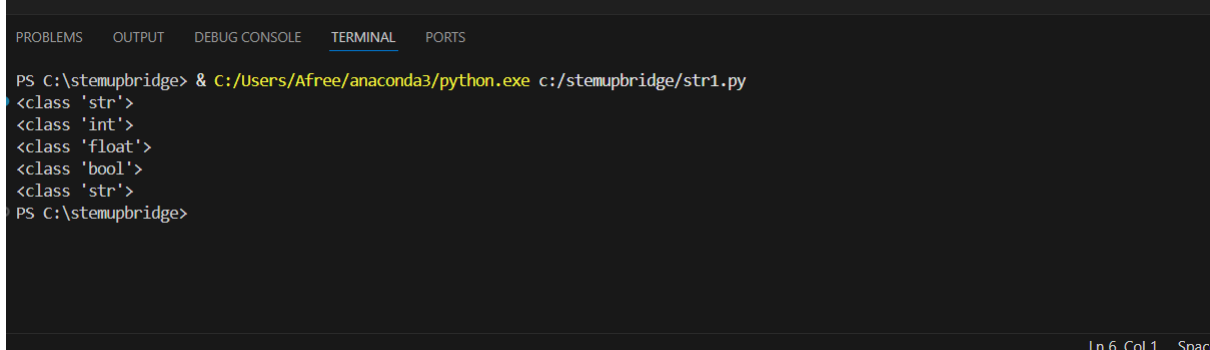
PRINT type of value5

END

## Code:

```
print(type("123"))  
print(type(123))  
print(type(123.45))  
print(type(True))  
print(type("Hello"))
```

## Output



The screenshot shows a terminal window with a dark background. At the top, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected), and 'PORTS'. The terminal content shows a PowerShell prompt 'PS C:\stemupbridge>' followed by the command '& C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/str1.py'. The output of the script is displayed on the next four lines: '<class 'str'>', '<class 'int'>', '<class 'float'>', and '<class 'bool'>'. The prompt returns to 'PS C:\stemupbridge>'. At the bottom right of the terminal, the text 'Ln 6, Col 1' is visible.

```
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/str1.py  
<class 'str'>  
<class 'int'>  
<class 'float'>  
<class 'bool'>  
<class 'str'>  
PS C:\stemupbridge>
```

## Task 4: Temperature converter

Write a program that converts Celsius to Fahrenheit using variable and formula

### Algorithm:

1. Start
2. Input temperature in Celsius
3. Apply formula:  $\text{Fahrenheit} = (\text{Celsius} \times 9/5) + 32$
4. Display Fahrenheit value
5. End

### Pseudo code:

START

INPUT celsius

fahrenheit  $\leftarrow$  (celsius  $\times$  9 / 5) + 32

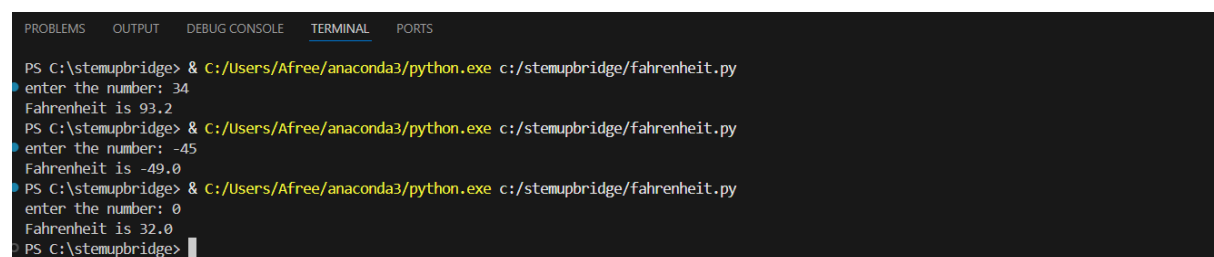
PRINT "Temperature in Fahrenheit: ", fahrenheit

END

### Code:

```
c = int(input("enter the number: "))  
f = (c * 9/5) + 32  
print("Fahrenheit is " + str(f))
```

### Output



```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/fahrenheit.py  
enter the number: 34  
Fahrenheit is 93.2  
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/fahrenheit.py  
enter the number: -45  
Fahrenheit is -49.0  
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/fahrenheit.py  
enter the number: 0  
Fahrenheit is 32.0  
PS C:\stemupbridge>
```

## Task 5 :Simple calculator

Create a basic calculator that performs +,-,\*, and / between two user provided numbers.

### Algorithm:

```
n1 = int(input("Enter first number: "))
n2 = int(input("Enter second number: "))
print("Choose operation: + - * /")
op = input("Enter operator: ")
match op:
    case '+':
        print("Addition: " + str(n1 + n2))
    case '-':
        print("Subtraction: " + str(n1 - n2))
    case '*':
        print("Multiplication: " + str(n1 * n2))
    case '/':
        if n2 != 0:
            print("Division: " + str(n1 / n2))
        else:
            print("Cannot divide by zero.")
```

### Output:

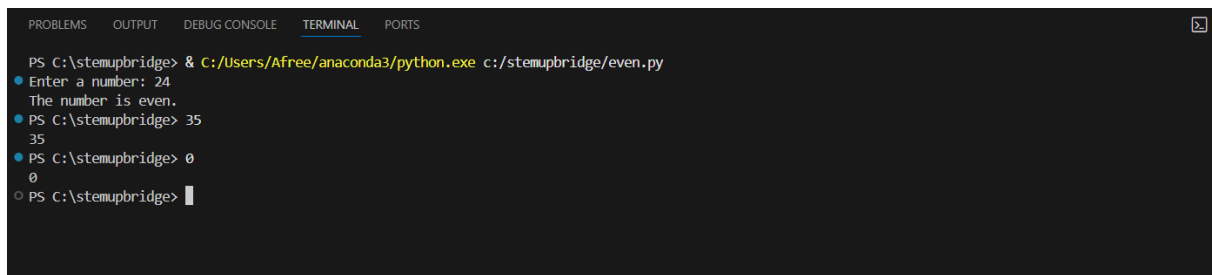
```
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/calculator.py
Enter first number: 2
Enter second number: 3
Choose operation: + - * /
Enter operator: +
Addition: 5
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/calculator.py
Enter first number: 3
Enter second number: 4
Choose operation: + - * /
Enter operator: /
Division: 0.75
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/calculator.py
Enter first number: 5
Enter second number: 6
Choose operation: + - * /
Enter operator: -
Subtraction: -1
PS C:\stemupbridge>
```

## Task 6: Even Or odd

### Code:

```
n = int(input("Enter a number: "))  
  
if n % 2 == 0:  
    print("The number is even.")  
else:  
    print("The number is odd.")
```

### Output:



The screenshot shows a terminal window with a dark background. At the top, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is active), and 'PORTS'. The terminal content shows a command prompt where the user runs a Python script. The script prompts for a number, and the user enters 24, 35, and 0 in separate runs. The output for 24 is 'The number is even.', and for 35 and 0, the output is not visible in the screenshot.

```
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/even.py  
• Enter a number: 24  
  The number is even.  
• PS C:\stemupbridge> 35  
  35  
• PS C:\stemupbridge> 0  
  0  
○ PS C:\stemupbridge>
```

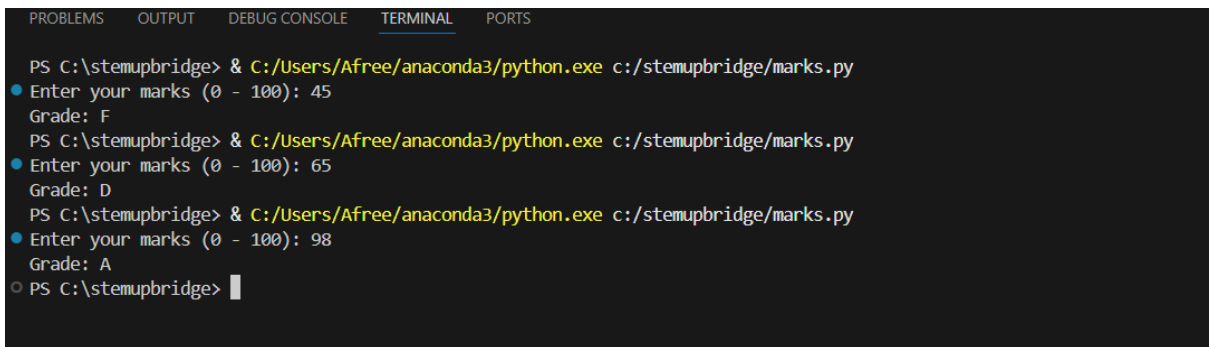


## Task 7: Grade Calculator

### Code:

```
marks = int(input("Enter your marks (0 - 100): "))
if marks > 100 or marks < 0:
    print("Invalid marks entered.")
elif marks >= 90 and marks <= 100:
    print("Grade: A")
elif marks >= 80:
    print("Grade: B")
elif marks >= 70:
    print("Grade: C")
elif marks >= 60:
    print("Grade: D")
elif marks < 60:
    print("Grade: F")
```

### Output:



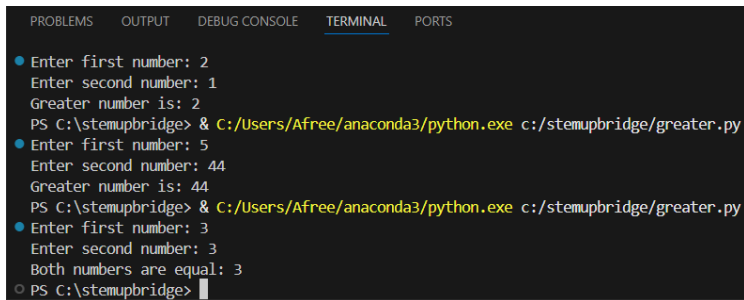
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/marks.py
Enter your marks (0 - 100): 45
Grade: F
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/marks.py
Enter your marks (0 - 100): 65
Grade: D
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/marks.py
Enter your marks (0 - 100): 98
Grade: A
PS C:\stemupbridge>
```

## Task 8: Number comparison

### Code:

```
n1= int(input("Enter first number: "))
n2 = int(input("Enter second number: "))
if n1 > n2:
    print("Greater number is: " + str(n1))
elif n2 > n1:
    print("Greater number is: " + str(n2))
else:
    print("Both numbers are equal: " + str(n1))
```

### Output:



The screenshot shows a terminal window with a dark background and light-colored text. At the top, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL', and 'PORTS'. The 'TERMINAL' tab is active. The terminal displays the following sequence of input and output for the Python script:

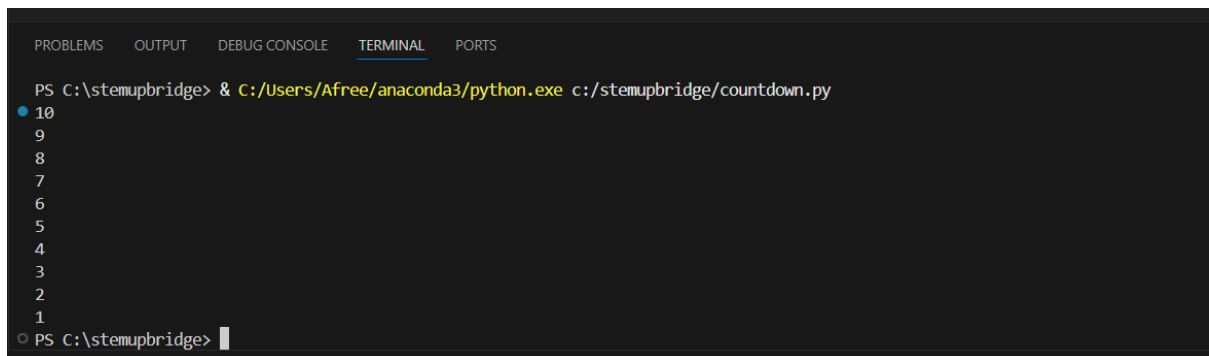
- Enter first number: 2
- Enter second number: 1
- Greater number is: 2
- PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/greater.py
- Enter first number: 5
- Enter second number: 44
- Greater number is: 44
- PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/greater.py
- Enter first number: 3
- Enter second number: 3
- Both numbers are equal: 3
- PS C:\stemupbridge>

## Task 9 : Countdown Timmer

### Code:

```
import time
count = 10
while count >= 1:
    print(count)
    time.sleep(1)
    count -= 1
```

### Output:



The screenshot shows a terminal window with a dark background. At the top, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is active), and 'PORTS'. The terminal content shows a PowerShell prompt 'PS C:\stemupbridge>' followed by the command '& C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/countdown.py'. Below the command, the numbers 10 through 1 are printed on separate lines, representing the countdown. At the bottom, the prompt 'PS C:\stemupbridge>' is shown again with a cursor.

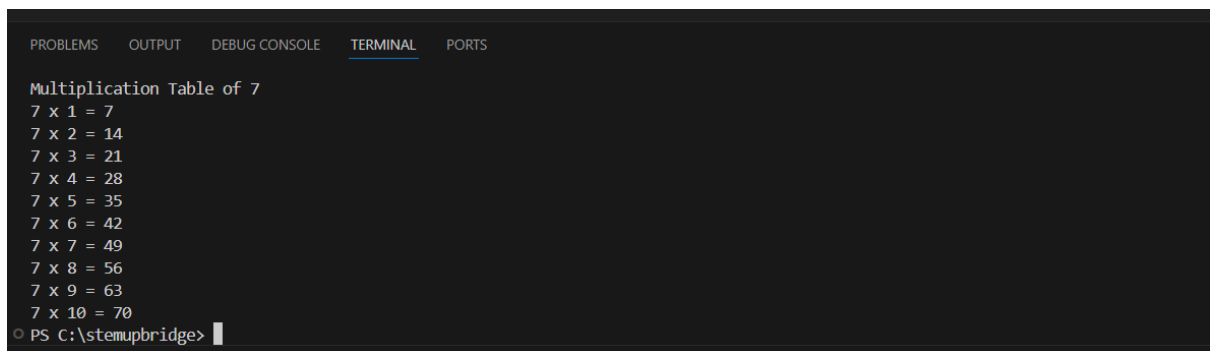
```
PS C:\stemupbridge> & C:/Users/Afree/anaconda3/python.exe c:/stemupbridge/countdown.py
10
9
8
7
6
5
4
3
2
1
PS C:\stemupbridge>
```

## Task 10 : Multiplication Table Generator

### Code:

```
n = int(input("Enter a number: "))  
print("Multiplication Table of", n)  
for i in range(1, 11):  
    print(str(n) + " x " + str(i) + " = " + str(n * i))
```

### Output:



The screenshot shows a terminal window with a dark background. At the top, there are tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected), and 'PORTS'. The terminal output displays the multiplication table for the number 7. The first line is 'Multiplication Table of 7'. This is followed by ten lines of multiplication results, from '7 x 1 = 7' to '7 x 10 = 70'. At the bottom of the terminal, the command prompt shows 'PS C:\stemupbridge>' with a cursor.

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  
  
Multiplication Table of 7  
7 x 1 = 7  
7 x 2 = 14  
7 x 3 = 21  
7 x 4 = 28  
7 x 5 = 35  
7 x 6 = 42  
7 x 7 = 49  
7 x 8 = 56  
7 x 9 = 63  
7 x 10 = 70  
PS C:\stemupbridge>
```