Data Types

Strings

```
In [ ]:  print("Hello"[-1])

         print("123" + "345")
```

Integer

```
In [ ]:  123_456_789 + 234_567_789
```

Float and Boolean

```
In [ ]:  #float
         3.1415
         #boolen
         true
         false
```

```
In [ ]:  num_char = len(input("What is your name?"))
         # print("Your name has "+num_char+" characters.")
         print(type(num_char))
```

Type Casting

```
In [ ]:  # num_char = len(input("What's your name? "))

         # new_num_char = str(num_char)

         # print("Your name has "+new_num_char+" characters.")

         a = float(123)

         print(type(a))

         print(70 + float("100.5"))
         print(str(70) + str(100))
```

Data Type Exercise: Write a program that adds the digits in a 2 digit number

```
In [ ]:  two_digit_number = input("Type a two digit number: ")
         first_digit = int(two_digit_number[0])
         second_digit = int(two_digit_number[1])

         result = first_digit + second_digit
         print(result)
```

Mathematical Operations

```python
3 + 5
7 - 3
3 * 2
6 / 3
2 ** 3


# PEMDASLR
# P: Paranthesis
# E: Exponent
# M: Multiplication
# D: Division
# A: Addition
# S: Subtraction
# LR: Left to Right


print(3 * (3 + 3) / 3 - 3)
```

BMI(Body Mass Index) Calculator Exercise

```python
# Calculates the BMI of a person
height = input("enter your height in m: ")
weight = input("enter your weight in kg: ")

new_height = float(height)
new_weight = int(weight)
type(new_height)
type(new_weight)
body_mass_index = new_weight / new_height ** 2
bmi_as_int = int(body_mass_index)
print(bmi_as_int)
```

Number Manipulation and F string

```python
print(round(8 / 3,2))
print(8 // 3)


result = 4 / 2


result /= 2
print(result)


score = 0


# User scores a point
score += 1
print(score)
```

```python
score = 0
height = 1.8
isWinning = True


#f-string
print(f"Your score is {score}, your height is {height}, you are winning is\
 you are winning is {isWinning}")
```

Exercise Life in Weeks

Instruction: Create a program using maths and f strings that tells us how many days, weeks, months we have left if we live until 90 years old

```
In [5]:  age = input("What is your current age? ")
         age_as_int = int(age)

         days = (365 * 90) - (365 * age_as_int)
         weeks = (52 * 90) - (52 * age_as_int)
         months = (12 * 90) - (12 * age_as_int)
         print(f"You have {days} days, {weeks} weeks, and {months} months left.")
```

```
What is your current age? 18
You have 26280 days, 3744 weeks, and 864 months left.
```

Tip Calculator

```
In [25]:  # Program for a tip calculator
          print("Welcome to the tip calculator.")
          bill = input("What was the total bill? ")
          bill_as_int = float(bill)
          total_bill = float(bill)
          split_bill = input("How many people to split the bill? ")
          split_as_int = int(split_bill)
          percentage = input("What percentage tip would you like to give? 10, 12, or 15? ")
          percent_as_int = int(percentage)

          new_bill = (((percent_as_int/100)  * bill_as_int) + total_bill)/split_as_int
          total_bill = "{:.2f}".format(new_bill,2)

          print(f"Each person should pay: {total_bill}")
```

```
Welcome to the tip calculator.
What was the total bill? 150
How many people to split the bill? 5
What percentage tip would you like to give? 10, 12, or 15? 12
Each person should pay: 33.60
```