

Summarization

Data Types: Integers (whole numbers), Floating-point (numbers with decimals), Strings (series of characters), Boolean(True, False)

Variables: Rules to obey

1. Can only be one word
2. Only use letters, numbers and underscores (_)
3. Can't begin with a number
4. Leading and trailing single or double underscores indicate/trigger certain aspects for the variable

TypeCasting: Using Functions that allow you to change the type of variable

1. `str()`
2. `int()`
3. `float()`
4. `bool()`

I/O:

INPUT: using the `input()` function, takes input from user and converts it to string.

`Input()` function can output a default message without using the `print()` function.

To print an input you can use placeholders `'{}'` Curly brackets and the `.format(var)` method, or using formatted strings `f'..., {var}'` to directly print the input without using the `.format()` method.

```
Ex:  my_name = input('What is your name? ') # default message
      print('Hi, {}'.format(my_name))    # or print(f'Hi, {my_name}')
      # What is your name? Salma
      # Hi, Salma
```

OUTPUT: using the `print()` function. Some useful keywords used with the `print()` function are, using `'end'` keyword avoids the newline after the output, or can be used to end the output with a different string. The `'sep'` keyword is used to separate multiple objects with an output.

```
Ex:  print('I'm', 'Pickle', 'Rick', sep=',')
      # I'm,Pickle,Rick
Ex:  print('I'm', 'Pickle', 'Rick', end='-')
      # I'm-Pickle-Rick-
```

Conditions: If statements are conditionals that check the condition to perform a certain task (if, elif, else)

Loops:

1. while loop runs the code for unknown number of times
2. For loop runs the code for an assigned number of times
- 3.

Math lib: the math module has useful functions and constants like the value of pi, e, sqrt (square root), ceil (rounds up), floor (round down)

Ex: Import math
 print(math.pi)

Strings methods/functions :

1. `len()` returns the length of string
2. `.find("char")` method returns the first occurrence of a given character
3. `.rfind("char")` method returns the last occurrence of a given character
4. `.capitalize()` capitalizes first letter of a string
5. `.upper()` converts all letters to uppercase
6. `.lower()` converts all letters to lowercase
7. `.isdigit()` returns true if string contains only digits
8. `.isalpha()` returns true if string contains only alphabetical character
9. `.count("char")` count how many characters are in within a string
10. `.replace("char", "char")` replaces all occurrences of a character with another character
11. Etc..