Concepts

Data Type	the **type** of the value
Variable	stores a value
Identifier	**name** of a variable

Data Types

String	Sequence of characters	"Hello World"
Integer	Whole numbers	101
Float	Decimal numbers	71.24
Boolean	True or False	4 > 3

String Concatenation

A method for combining strings
```
print( " Hel lo" + " World! ")
```

Type Casting

A method for changing the data type of a value
```
price = 2.00
print( "The apple is " + str(price) + " dol lar
 s")
```

Type Cast Functions

str()	converts a value to a string
int()	converts a value to an integer
float()	converts a value to a float
bool()	converts a value to a boolean

Basic Mathematical Operators

+	Addition
-	Subtraction
*	Multiplication
/	Division

Example of Mathematical Operations

```
num1 = 5
num2 = 3
product = num1 * num2
print( " Pro duc t:" + str(pr -
oduct))
```

Condition

an expression that uses **relation operators** and is either True or False
also known as a **boolean expression**

Relational Operators

==	Checks if the values are equal
!=	Checks if the values are not equal
>	Checks if the left value is greater than the right value
<	Checks if the left value is less than the right value
>=	Checks if the left value is greater than or equal to the right value
<=	Checks if the left value is less than or equal to the right value

If statement

used to run instructions when the condition is True
```
 if grade >= 90:
  print("Letter grade: A")
```

If-else statement

used to run instructions when the condition is True and when the condition is False
```
 if grade >= 90:
  print("Letter grade: A")
 else:
  print("You did not get an A")
```

If-elif

used to run instructions when multiple conditions are met
```
 if grade >= 90:
  print("Letter grade: A")
 elif grade >= 80:
  print("Letter grade: B")
 else:
  print("Letter grade: unknow n"
)
```

For Loop

used to repeat a set of instructions for a seque values
```
grade_list = [88,90 ,68 ,78 ,89 ,9
 0,40]
for grade in grade_ list:
    pri nt( grade)'
```
prints each grade in grade_list

range(stop)

is a function that returns a sequence of numbers starting from 0 to stop-1.
```
for x in range(6):
    pri nt(x)
```
prints x when x is 0, 1, 2, 3, 4 and 5

range(start, stop)

is a function that returns a sequence of numbers starting from start to stop-1.
```
for x in range(1, 6):
    pri nt(x)
```
prints x when x is 1, 2, 3, 4 and 5

range(start, stop, step)

is a function that returns a sequence of numbers starting from start to stop-1 while increasing by step.
```
for x in range(1, 6, 2):
    pri nt(x)
```
prints x when x is 1, 3 and 5