**1. IDLE** – integrated development & learning environment.

Input – computation – output

***2. Basic Expressions***;

* **Arithmetic operations** – numbers

-math

-lines

|  |  |  |
| --- | --- | --- |
| OPERATOR | MEANING | EXAMPLES |
| + | Addition | 3+3 |
| - | Subtraction | 5-3 |
| \* | Multiplication | 3\*3 |
| / | Division | 9/3 ; 10/3 (float) |
| // | Whole number division | 10//3 |
| % | Module | 10%3 |
| \*\* | exponent | 2\*\*3 – 2\*2\*2 |

* 10/3 is called float.(decimals)
* **Comparison** –gives results as either true or false.(decision making)

|  |  |  |  |
| --- | --- | --- | --- |
| OPERATOR | MEANING | EXAMPLES | RESULTS |
| == | Equal to | 3==3  3==4 | True  false |
| != | Not equal to | 3!=3  3!=4 | False  true |
| < | Less than | 3<4  4<3 | True  false |
| > | Greater than | 3>4  4>3 | False  true |
| >= | Greater than or equal to | 4>=3  4>=5 | True  false |
| <= | Less than or equal to | 3<=4  3<=2 | True  false |

3. Data types;

* Numbers = integers/whole numbers/floats/decimals.
* Strings
* Float - decimals

4. Variables = stores data to be used later

* Type casting – converting variables from one type to the other.

Strings

* Combination of alphanumeric keys.
* Is described with the word “print” to print out variables

\n – used to type variables in a new line. (Line feud)

\t – creates a tab (big space)

\b – backspace

{ } – curly braces

‘a’+’b’+’c’ – concatenation.

* Formatting –format/{}/print

String Methods

* Upper method.
* S.upper. ()
* Lowe method
* S.lower. ()
* Capitalize.
* S.Capitalize. ()
* Ends with
* S.endswith(‘x’)
* Starts with.
* S.startswith(‘a’)
* Alphabet.
* S.isalpha()
* Alphanumeric.
* S.isalnum()
* Replacing.
* S.replace(‘a’,’b’)
* Length.
* Determines the length of the string.

Len(s)

String Indexing

* Uses square brackets.
* S[0]
* Defines what is stored in character.
* Also named using negative numbers.
* Named using positive numbers, beginning with 0.

Slicing.

* Used to find all the characters in a variable.
* S[3:9]
* S[-9:-5]