1.0-basic

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0.1 Syntax and Semantics in Python

Syntax refers to the set of rules that defines the combintions of symbols that are considered to be correctly structured programs in a language. In simpler terms, syntax is about the correct arrangement of words and symbols in a code.

Semntics refers to the meaning or the interpretation of the symbols, characters, and commands in a language. It is about what the code is supposed to do when it runs.

[1]:
```
## Basic Syntax Rule In Python
## Case sensitivity- Python is case sensitive

name = "Uditya"
Name = "UDITYA"

print(name)
print(Name)
```

```
Uditya
UDITYA
```

0.2 Indentation

Indentation in Python is used to define the structure and hierarchy of the code. Unlike many other programming languages that use braces{} to delimit blocks of code, Python uses indentation to determine the grouping of statements. This means that all the statements within a block must be indented at the same level.

[2]:
```
## Indentation

age =32
if age>30:
        print(f"Age is {30}")
```

```
Age is 30
```

[3]:
```
## single line comment
print("hello")
```

```
hello
```

[4]:
```
## Line continuation
# if you give the (\) meanse it is continue the line in next line
total = 1+3+3+4+3+\
10+10
print(total)
```

```
34
```

[5]:
```
## Multiple statement in single line
x = 5; y = 90; z=x+y
print(z)
```

```
95
```

[6]:
```
## Type Inference
variable =10
print(type(variable))
variable = "Uditya"
print(type(variable))
```

```
<class 'int'>
<class 'str'>
```

[7]:
```
## Code example of indentation
if True:
        print("Correct indentation")
        if False:
                print("This out print") ## this is not printed
        print("This will print")
print("Outside the block")
```

```
Correct indentation
This will print
Outside the block
```