

Introduction to Software Systems (CS6.201)

Summer 2021, IIIT Hyderabad

29 June, Tuesday (Lecture 10) – Python 1

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Python

Python is an interpreted, high-level and general-purpose programming language. It is dynamically typed and garbage-collected.

Variables

Variables do not need to be declared in Python. The first statement involving a variable would be its definition; e.g.,

```
school = "IIIT"
count = 0
```

Lists are enclosed in square brackets and their entries are comma-separated; for instance,

```
myList = ["yellow", "pink"]
```

and they can be subscripted using square brackets, as in `myList[0]`, which evaluates to `"yellow"`.

Input can be taken with the `input` command:

```
house = input("Enter your house: ")
```

Conditionals

The normal relational operators `==`, `!=`, etc. can be used, along with the logical operators `and`, `or` and `not`.

If statements are followed by a colon and the next line must be indented:

```
if (a > 5) and (a < 7):
    print("Hello")
elif (a > 7):
    print("Bye")
else
    print("Ok")
```

Loops

There are two kinds of loops: `for` and `while`.

While loops have syntax similar to that of `if` statements:

```
while (a < 5):  
    a++  
    print(a)
```

Loops can be broken out of using the **break** statement.

For loops use the following syntax:

```
for i in myList:  
    print(i)
```

For iterating over a range of numbers `[a,b)` with step value `c`, the list `range(a,b,c)` can be used. Strings can be used as lists of characters.