Introduction to Programming

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Lecture 1

Python Programming Language

Computational thinking

inputs → algorithms → outputs

Components 〉 Output

```
print(“Hello World!”);
```

Components 〉 Examples

```
print(“Hello Amit”);
```

Components 〉 Examples

```
print(“                    Hello World!”);
```

Components 〉 Examples

```
print(“Hello World!\n Hello Amit”);
```

Components 〉 Output

Character Escape Sequence:

1. \n: New line
2. \t: Tab
3. \a: alert bell

Character Escape Sequence:

1. \n: New line
2. \t: Tab
3. \a: alert bell
4. \\: \
5. . . .

Components 〉 Output

Same Output every time

Not so Useful...

Output dependent on input

Taking Input → Storage space

Components 〉 Storage

Storage Space

1. Name
2. Type
3. Size

Components 〉 Types of Storage

Different Types of Storage

- Integers (1,2984,0x10)
- Floating point numbers (1.5,0.847,3.65e-2)
- Complex numbers (2+3j)
- Strings (“Hello World!”)

Components 〉 Storage

Storage operations

- write to storage space
- read from storage space

```
Integers:
x = 15
```

```
Integers:
x = 15
y = 5
z = x - y
```

```
x = 0x15
y = 0o5
z = 0b10
```

```
Floating point:
x = 1.532
y = .4e7
z = x / y
```

```
Strings:
x = “Hello World”
y = ’ ’ ’ This is a
multiline string’ ’ ’
z = r’Raw Strings’
```

```
Strings:
x = ‘Hello \
World’
y=’Hello \’World\’
```

Booleans:

```
x = True
y= False
```

```
x = 15
print(“x”)
```

```
x = 15
print(“x”)
```

Wrong

```
x = 15
print(x)
```

```
x = 34.87
print(x)
```

```
x = “g is a character”
print(x)
```

Components 〉 Conversion of Types

`ascii()`	String representation
`bin()`	Binary representation
`bool()`	Boolean representation
`chr()`	character representation
`complex()`	complex number representation
`float()`	floating point representation
`hex()`	hexadecimal representation
`int()`	integer representation
`type()`	Type of variable

That's It 〉 Questions?

Thank You

For Your Kind Attention