

Python in Education

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what
Are the Best

Python
Programming

online courses for Kids

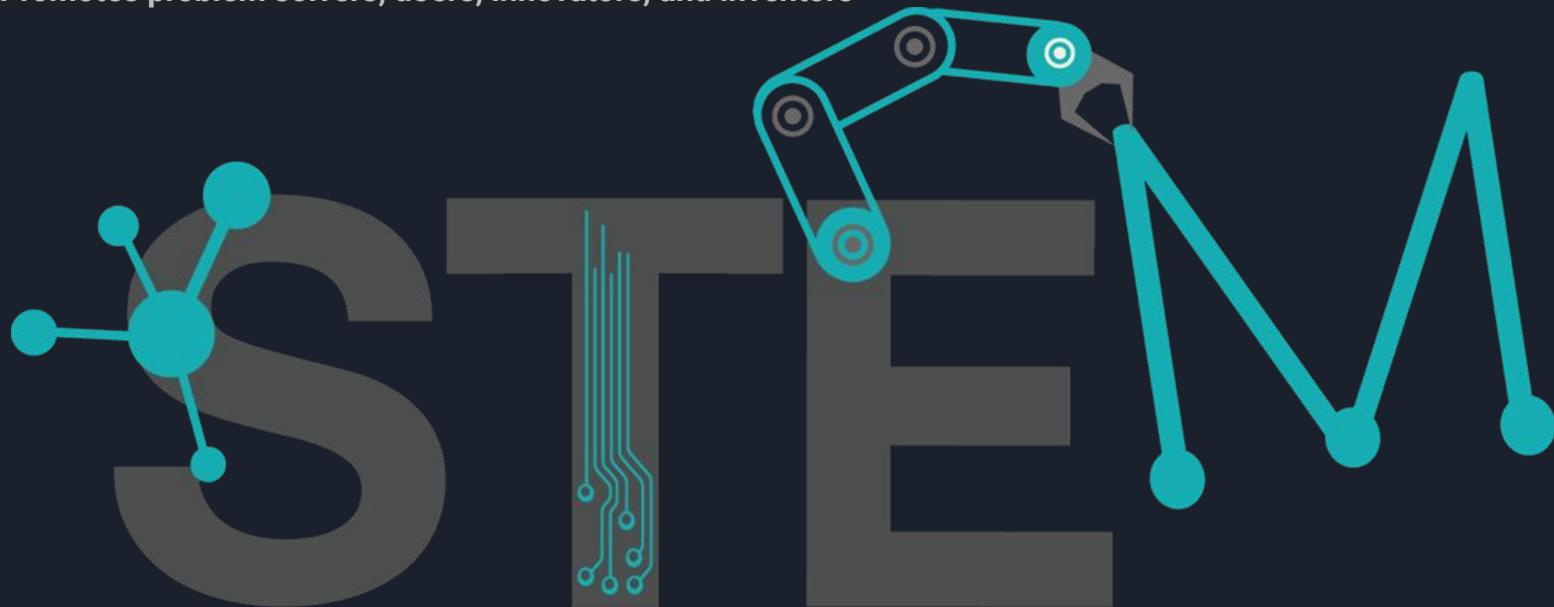


Overview

- Introduce STEM concepts early
- Introduce Computer Science concepts early
- Python scripting language - simple, quick, create
- A Multipurpose language–library, frameworks
- Endless Opportunities

STEM

- Promotes critical thinkers,
- Promotes problem solvers, doers, innovators, and inventors



SCIENCE TECHNOLOGY ENGINEERING MATH

Computer Science Concepts

- Introduce data structures & algorithms easier
- Introduction to concepts of computing & programming are lighter
 - Expressions, Variables, Literals, Types

Go Deep, Not Wide



**Python
Array
Explained:**
how is it different from
the arrays in other languages?

200	201	202	203	204	205
0	1	2	3	4	5

A R R A Y S

Simple, Quick, Create

- No jargon & overstimulation
- Loosely typed language
- Instant results on the screen

```
1 a = "apple"
2 b = 400
3 c = 250.749
4 d = b + c
5 e = {}
6 f = [a, b, c, d, e]
7
8 print(f)
```

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL

```
Windows PowerShell
PS C:\Users\wootb\Documents\IT276GameDevC> & C:
sentationcode.py"
['apple', 400, 250.749, 650.749, {}]
PS C:\Users\wootb\Documents\IT276GameDevC> []
```

Dictionary implementation in Java vs Python

```
1 import java.util.*;
2
3 class My_Dictionary
4 {
5     public static void main(String[] args)
6     {
7         // creating a My HashTable Dictionary
8         Hashtable<String, String> my_dict = new Hashtable<String, String>();
9
10    // Using a few dictionary Class methods
11    // using put method
12    my_dict.put("01", "Apple");
13    my_dict.put("10", "Banana");
14
15    // using get() method
16    System.out.println("\nValue at key = 10 : " + my_dict.get("10"));
17    System.out.println("Value at key = 11 : " + my_dict.get("11"));
18}
```

```
10    dictionary = {"balloons": 0, "clowns":"you", "Pranked": True}
11
12    for item, key in dictionary.items():
13        print(item, key);
14
```

PROBLEMS 2 OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\Users\wootb\Documents\IT276GameDevC> & C:/Python310/python.exe "c:/Us
sentationcode.py"
balloons 0
clowns you
Pranked True
PS C:\Users\wootb\Documents\IT276GameDevC> []
```

Various Libraries & Frameworks

- Data Sciences (NumPy, Pandas, TensorFlow)
- Web Development (Flask, Django)
- Task automation



Code Example : Minecraft afk-machine

```
16 import os
17 import keyboard
18 import time
19 import random
20
21 listOfThings = [
22     "what da dog doin",
23     "Hello world",
24     "Stay hydrated!",
25     "Hi mom!",
26     "MAM, GET THE CAMERA",
27     "WOO, WOO",
28     "Hello, Christian",
29     "Hello, comrade.",
30 ]
31
```

```
-- 32 def afkFunction():
33     randNum = random.randint(0, 21)
34     time.sleep(1);
35     keyboard.press_and_release('t');
36     time.sleep(1);
37     keyboard.write(listOfThings[randNum]);
38     keyboard.press_and_release('enter');
39     time.sleep(30);
40 count = 0
41 while count <= 30000:
42     afkFunction();
43     count += 1;
44
```

The Sky is the Limit

- Introduce early
- Is it for me?
- Proceed



Thank You!

Q & A

- Any questions?



Works Cited

“How to Create a Dictionary in Java.” *Educativ*e,
<https://www.educative.io/edpresso/how-to-create-a-dictionary-in-java>.

** Numerous pictures used in slide are from Google Images