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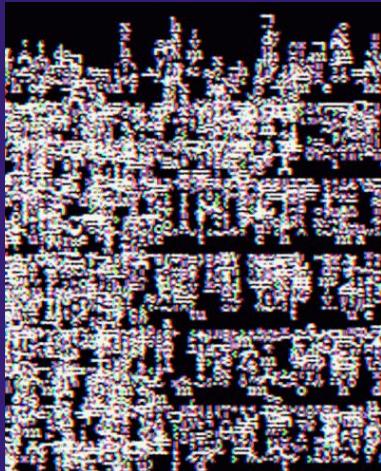
Unit 9

Unit 10

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Class: Programming & Prototyping

Guidebook





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Unit 1: Intro to Python

1.1 What is Computer Science?

1.2 Using Python

1.3 First Program

1.4 Hardware and Software

1.5 Output

1.6 Input

1.7 Data Types and Variables

1.8 Analog vs. Digital

1.9 Understanding Binary

Unit 1 Vocabulary

Assignment 1: Silly Sentences / Test 1

Unit 1 Review



Three types of data and how we use them in code.

Boolean : T/F

Number: Values, no "", can use mathematical operators

String: Cannot be evaluated must be enclosed in ""

Int: whole number

Float: decimal number

Three parts to a variable statement: Name, equal sign, Value

1. hello-world
2. Print
3. Number_l_fan
4. L_number
5. A7a777ddd7d7d7d7d7
6. #mfaproud
7. This_name
8. While
9. I love coding

#string variables needs quotes "" or "

variable_label + assignment operator (=) + value

boolean variables are used for logical operations. They must be written in uppercase True False no quotes

Algorithm: a series of commands for a task

Computers use inputs outputs processing and storage



Input & variables

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Guido Van Rossum was the creator of python



String concatenation is a way for you to combine data

1. The input function asks the user to provide information
2. The text inside () is the prompt that will appear on the screen
3. The value that the user typed in can be saved to a variable

Data Type: All values in a programming language have a "type" such as a string, number or boolean that dictates how the computer will interpret it

Expression: any valid unit of code that resolves to a value

Variable: A placeholder for a piece of information that can change

single line comment

''' multi line comment

Compiler: A program that converts commands so that a computer can understand and execute them

IDE: Software or an application that combines multiple tools in one window

CPU: the central processing unit of a computer basically a brain carrying out program instructions

Int: a built in data type that represents integers which are whole numbers + and -



Typecasting: the process of converting one data type into another

Analog: something that represents data or signals in a continuous form

Digital: data or signals that are represented in discrete using ones and zeroes

Analog and digital are different because analog is continuous while digital is not

Binary: a number system that uses only 2 digits 0 and 1

Decimal: a number that has a fractional part represented by using a decimal point

What are three types of softwares? Programs/applications, compilers, and operating systems

What are 5 things all computing devices have in common? Input, output, processing, main memory and secondary memory

What are programs? Instructions that the computer follows

What's the difference between hardware and software? Hardware is the physical machine while software is what it contains

What will this output?

a. Print ("computer \n\t\tScience")

Computer

Science

b. print ("blue")

print("sky")

Blue

Sky

What symbol do we use for comments? # for single '''' for multi line

What are the 2 main types of data in python? Numbers and strings

What is the difference between analog and digital? Analog data is from real world while digital data is information converted into numeric data to be stored in a computing device



Write the code to input numbers:

```
number = int( input("give me a number"))
Num = int( input( "enter a number."))
```

What does the str command do?