OGUN DIGICLASS

CLASS: SECONDARY SCHOOL

SUBJECT: COMPUTER STUDIES

TOPIC: Introduction To Programming Languages

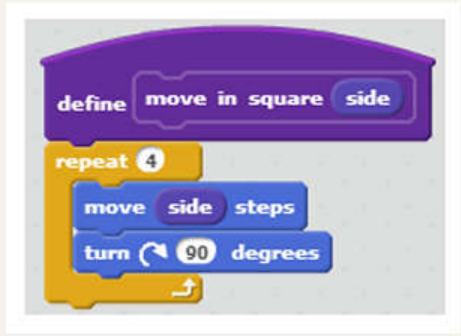
[1]:
```
print ("Good day learners, you are welcome to OgunDigiClass")
print ("I am your teacher, Olalekan Adeeko and I will be teaching you Computer Studies")
print ("The topic for today is Programming Language")
```

```
Good day learners, you are welcome to OgunDigiClass
I am your teacher, Olalekan Adeeko and I will be teaching you Computer Studies
The topic for today is Programming Language
```

[4]:
```
# importing the calendar module
import calendar
# initializing the year and month
year = 2020
month = 5
# printing the calendar
print(calendar.month(year, month))
```

```
      May 2020
Mo Tu We Th Fr Sa Su
                1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
```

Introduction To Programming




```
action move in square (
  | sprite : ♻scratch→ scratch sprite,
  | side : Number)
do
  | for 0 ≤ i < 4 do
  |   | sprite→ move(side)
  |   | sprite→ turn right(90)
  | end for
end action
```

Learning Objectives

- Define a Program, Computer Programming, and Computer Programmer.
- State types of Programming Languages and enumerate why we teach Programming.

Without coding, computers would literally do nothing. They would be completely useless

Ask this question online.

Play a video game.

Send an email.

Write a word document.

Take a selfie on your smartphone (also a computer)

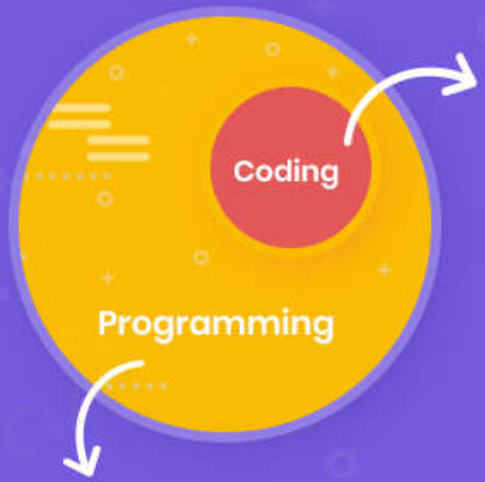
Do online transaction

Buy something online.

Watch a movie on Netflix.

Coding VS Programming

Coding is a subset of Programming



Coding

- → Machine-readable inputs
- → Writing lines of codes
- → Language and syntax

Programming

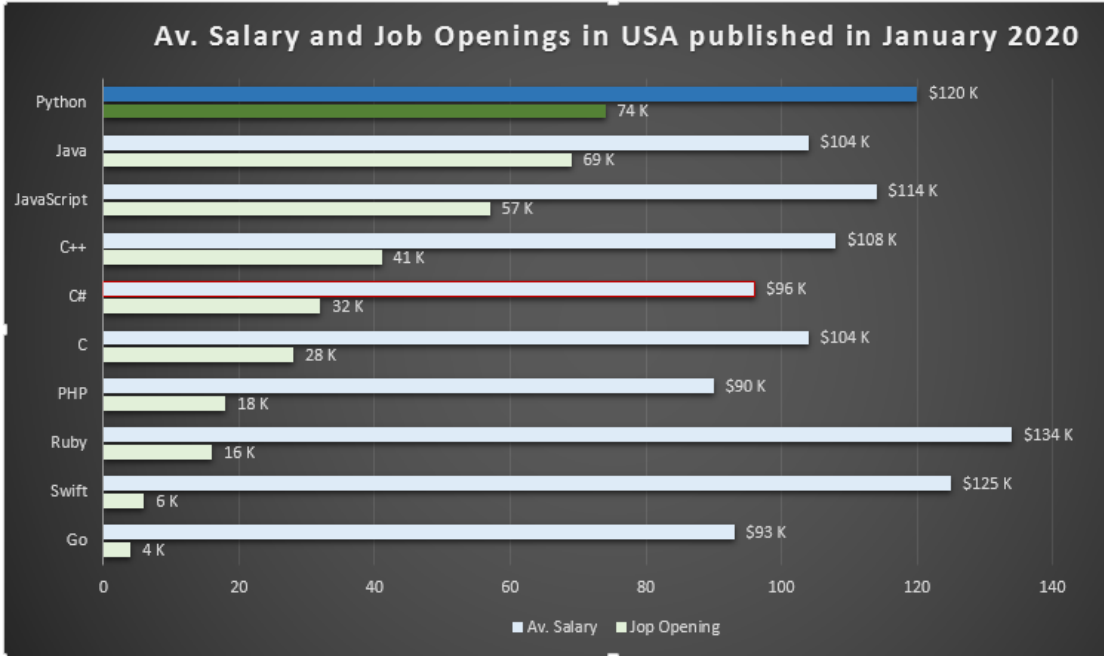
- → Creating and developing an executable machine program
- → Debugging and testing
- → Translating requirements
- → Documentation review and analysis

Computer Program

- A program is a set of instructions that a computer follows in order to perform a task
- Computers need to be told how you want everything to work in your code (set of instructions).
- A program is like a recipe. It contains a list of ingredients (called variables) and a list of directions (called statements) that tell the computer what to do with the variables.

Programming Language

- A vocabulary and set of grammatical rules (syntax) for instructing a computer to perform specific tasks.
- Programming languages can be used to create computer programs.
- The term programming language usually refers to high-level languages, such as Python, C, C++, Java, Ruby, C# etc



You eventually need to convert your program into machine language so that the computer can understand it. There are two ways to do this

Compile the Program

Reads the whole source code and translates it into a complete machine code

C

C++

Rust

Interpret the Program

Reads the source code one instruction or line at a time, converts this line into machine code and executes it.

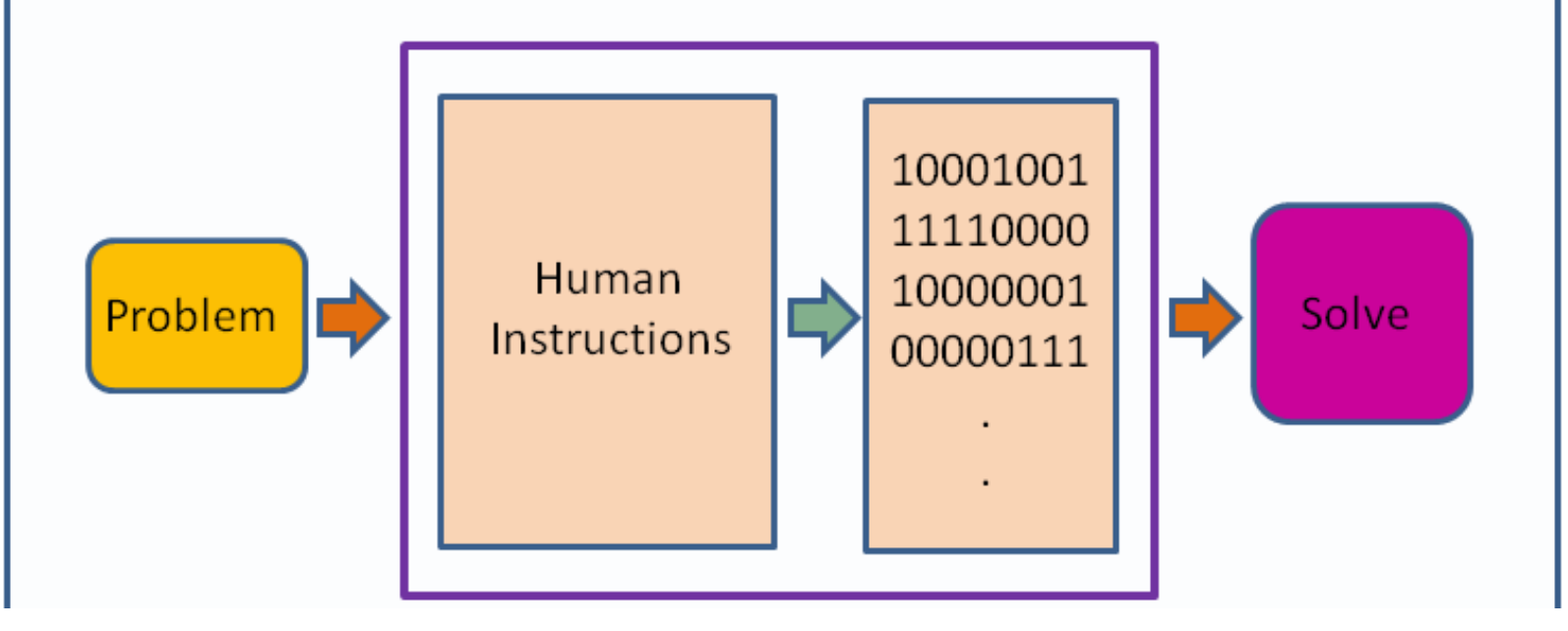
BASIC

Ruby

Python

+ Computer Programming

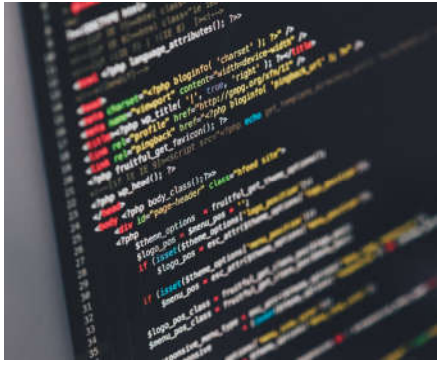
Computer programming is the process of writing, testing, debugging/troubleshooting, and maintaining the source code of computer programs. • This source code is written in a programming language like C++, JAVA, Perl etc.



A Programmer

A programmer is someone who writes computer program.

Computer programmers write, test, and maintain programs or software that tell the computer what to do.



What Skills are Required to Become a Programmer?

Writing, Deductive Reasoning

Reading Comprehension

Critical Thinking - Using logic and analysis

Mathematics

Computational Thinking: approaching a problem in a systematic manner

Think Like a Computer

What is an Algorithm?

Sequence of instructions to make something happen.

What is a flowchart?

A flowchart is simply a graphical representation of steps. It shows steps in sequential order and is widely used in presenting the flow of algorithms, workflow or processes

Making the tea

If require milk

Take milk out of the fridge

Boil the kettle.

If require sugar

Pour boiled water into the cup

Add sugar

Get tea bag from the cupboard

Get the sugar out of the cupboard

Add tea bag

Drink!

Else do nothing

Add milk

Take cup out of cupboard

Else do nothing

Stir tea

Remove tea bag

Boil the kettle.

Take cup out of cupboard

Get tea bag from the cupboard

Add tea bag

Pour boiled water into the cup

If require sugar

Get the sugar out of the cupboard

Add sugar

Else do nothing

If require milk

Take milk out of the fridge

Add milk

Else do nothing

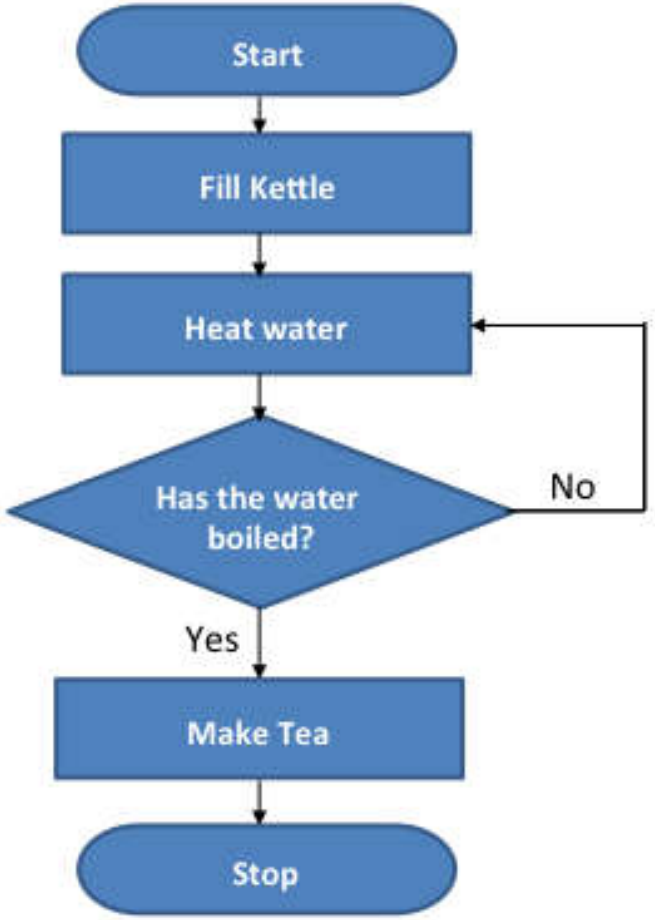
Stir tea

Remove tea bag

Drink!

Making a Cup of Tea…

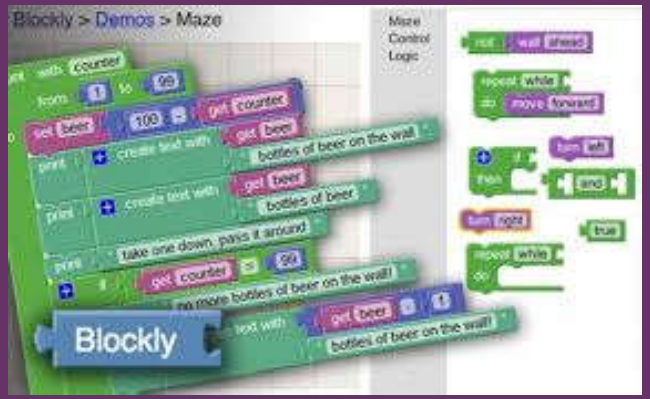
Example (Making the Tea)



BYOB (Build Your Own Blocks) Languages

Scratch

Blockly



Kodu

Daisy the Dinosaur (iOS/Android)

Higher Level Languages

Python

touchdevelop

Minecraft Pi / Edu

Sonic Pi

Assignment

- Write an algorithm to show hoe to solve the question below.

You have 17 packs of biscuits and 34 cupcakes, how would you know the total number of snacks you have