



# python™ & Algorithms For Beginners



```
def rust(self):
    self.color = self.rusty_color

def clean(self):
    self.color = self.clean_color

def flip(self):
    heads_options = [True, False]
    choice = random.choice(heads_options)
    self.head = choice

# Dollar inherit from Coin class
class Dollar(Coin):

    # undefined value in the inherited class need to be defined in the constructor

    def __init__(self):
        data = {
            "original_value": 1.00,
            "clean_color": "gold",
            "rusty_color": "greenish",
            "num_edges": 1,
            "diameter": 22,
            "thickness": 3,
            "mass": 9.5
        }
        # pack the above data and
```

It's useful

## Let's master Python!

Python is the most popular programming language with its high productivity and wide variety of libraries, especially AI and computational sciences. Python is a high-level and easy to learn language and is a perfect starting point to learn full functional computer language used in many industries.

- ✓ All fundamentals from basic syntax to Web application development
- ✓ Many mini-projects and exercises
- ✓ File access, database access, and many libraries in the latter half of the program

Day  
Time  
Period  
No class dates  
Number of classes  
Fee

Let's get the edge with STEAM Dojo

# After this program

Your child will be able to develop Python programs that use a function, object-oriented programming, recursion, file access, database access, and many libraries such as graph drawing with matplotlib.

## Syllabus (Subject to change)

- 1) Week 1 –Week 15  
Fundamentals of Python and Algorithms
- 2) Week 16 – Week 32  
File access, SQL and Non-SQL DB access, Graphing with MatPlotLib

## Prerequisite

No previous programming experience required.

## Hardware & Software requirements

Please prepare a Google account that allows your child to use Google Collaboratory. For the first half of the course, until the mid of December, your child needs to have a PC, a Mac, or a relatively new Chromebook. Old Chromebook and tablets can have performance problem with Zoom, so we do not recommend using one.

From January, your child will need a PC or a Mac since they need to install databases and set up a local Python environment. Chromebooks do not work.

We recommend having an additional device to view the Zoom screen while fully using the main device for programming.