

# 180-Day Python Learning Plan

*Note: Learning and Practice Separated*

## Schedule:

- **9:00 - 10:00 PM:** Learning (detailed lectures and concepts).
- **10:00 - 11:30 PM:** Practice (coding exercises, examples, and mini-projects).

**Note:** Every Friday is a reflection day.

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## Day 2: Variables and Data Types

### Learning (9:00 - 10:00 PM)

Today we'll cover:

1. **Variables:** What they are and how to create them.
  2. **Data types:** Strings, integers, floats, and basic type conversions.
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### 1. What is a Variable?

A variable is a named container that stores a value. Think of it as a "box" where you can store data.

- You can name a variable with letters, numbers, and underscores (\_).

- Example:

```
python name = "Alice" age = 25 height = 5.7
```

In the above example:

- name holds a string ("Alice")

- age holds an integer (25)

- height holds a float (5.7)

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### 2. Common Data Types in Python

#### 1. String (str):

Text enclosed in quotes.

Example: "Hello, world!"

```
python greeting = "Hello, world!" print(greeting)
```

#### 2. Integer (int):

Whole numbers (positive or negative).

Example: 42

```
python number = 42 print(number)
```

#### 3. Float (float):

Decimal numbers.

Example: 3.14

```
python pi = 3.14 print(pi)
```

#### 4. **Boolean (bool):**

True or False.

```
python is_sunny = True print(is_sunny)
```

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### 3. Type Conversion (Casting)

You can convert one type to another using `int()`, `float()`, `str()`, etc.

Examples:

```
python age = "30" # This is a string age_as_int = int(age) #  
Converts to integer print(age_as_int)  
python number = 42 # Integer number_as_str = str(number) #  
Converts to string print(number_as_str)
```

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### Practice Exercises (10:00 - 11:30 PM)

1. **Exercise 1:** Create and print variables of different types:
2. A string variable holding your name.
3. An integer variable for your age.
4. A float variable for your height.

5. A boolean variable indicating if you like pizza.

Example:

```
python name = "John" age = 28 height = 5.9 likes_pizza = True  
print(name, age, height, likes_pizza)
```

6. **Exercise 2:** Use type conversion to do the following:

7. Convert a float to an integer.

8. Convert an integer to a string and print it.

Example:

```
python number = 3.75 number_as_int = int(number)  
print(number_as_int) # Output: 3
```

9. **Exercise 3:** Create a program that asks the user for their name and age, then prints a message like:

```
"Hello, [name]! You are [age] years old."
```

Example:

```
python name = input("Enter your name: ") age = input("Enter  
your age: ") print(f"Hello, {name}! You are {age} years  
old.")
```

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Let me know when you're done, or if you have any questions while practicing! 😊

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