

# Python Training Program

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## Preface

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## Revision History

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## Approval

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# **1 Python environment setup**

- 1.1 Installing python**
- 1.2 Running python code**

# **2 Python basic syntax**

- 2.1 Python programming modes**
- 2.2 Python identifiers**
- 2.3 Reserved words**
- 2.4 Lines and indentation**
- 2.5 Multi-line statements**
- 2.6 Quotation in Python**
- 2.7 Comments**

# **3 Python data types**

- 3.1 Assigning values to variables**
- 3.2 Multiple assignment**
- 3.3 Python standard data types**

- 1. Numbers
- 2. String
- 3. List
- 4. Tuple
- 5. Dictionary
- 6. Booleans

- 3.4 Data type conversion**

# **4 Python operators**

- 4.1 Arithmetic Operators**
- 4.2 Comparison Operators**
- 4.3 Assignment Operators**
- 4.4 Logical Operators**
- 4.5 Bitwise Operators**
- 4.6 Membership Operators**

- 4.7 Identity Operators**
- 4.8 Chaining of different operators**

## **5 Python control flow tools**

- 5.1 If statements**
- 5.2 If...else statements**
- 5.3 Nested if statements**
- 5.4 for statements (for loop)**
- 5.5 while statements (while loop)**
- 5.6 Nested loops**
- 5.7 The range() function**
- 5.8 break, continue and pass statements**
- 5.9 Defining functions**
- 5.10 Passing arguments to a function**
- 5.11 Default arguments**

## **6 Data structure**

- 6.1 Indexing and slicing with strings**
- 6.2 Built-in string methods**

1. str.capitalize()
2. str.count()
3. str.encode()
4. str.find()
5. str.format()
6. str.index()
7. str.join()
8. str.lower()
9. str.replace()
10. str.strip()
11. str.split()
12. str.splitlines()
13. str.upper()

### **6.3 String formatting**

### **6.4 Indexing and slicing with lists**

### **6.5 Built-in list functions**

1. `cmp(list1, list2)`
2. `len(list)`
3. `max(list)`
4. `min(list)`
5. `list(seq)`

### **6.6 Built-in list methods**

1. `list.append()`
2. `list.count()`
3. `list.extend()`
4. `list.index()`
5. `list.insert()`
6. `list.pop()`
7. `list.remove()`
8. `list.reverse()`
9. `list.sort()`

### **6.7 List comprehensions**

### **6.8 Indexing and slicing with tuples**

### **6.9 Built-in tuple functions**

1. `cmp(tuple1, tuple2)`
2. `len(tuple)`
3. `max(tuple)`
4. `min(tuple)`
5. `tuple(seq)`

### **6.10 Built-in dictionary functions**

1. `cmp(dict1, dict2)`
2. `len(dict)`



3. `str(dict)`
4. `type(variable)`

## **6.11 Built-in dictionary methods**

1. `dict.clear()`
2. `dict.copy()`
3. `dict.fromkeys()`
4. `dict.get()`
5. `dict.has_key()`
6. `dict.items()`
7. `dict.keys()`
8. `dict.setdefault()`
9. `dict.update()`
10. `dict.values()`

## **7 Object oriented programming**

- 7.1 Python scopes and namespaces**
- 7.2 Defining classes**
- 7.3 Objects**
- 7.4 Class and instance variables**
- 7.5 Inheritance**

## **8 Modules and packages**

- 8.1 The import statement**
- 8.2 The from...import statement**
- 8.3 The from...import \* statement**
- 8.4 The import as statement**
- 8.5 Executing a Module as a Script**
- 8.6 Python packages**
- 8.7 Package initialization**
- 8.8 PIP command**

## **9 Errors and exception handling**

- 9.1 Syntax errors**
- 9.2 Exceptions**
- 9.3 Handling exceptions**
- 9.4 The try-finally clause**

## **10 Reading and writing files**

- 10.1 Opening files in Python**
- 10.2 Closing files in Python**
- 10.3 Writing to files in Python**
- 10.4 Reading files in Python**

## **11 Advanced python modules**

- 11.1 Access command-line arguments using sys module**
- 11.2 Python OS module**
- 11.3 Python datetime module**
- 11.4 Python time module**
- 11.5 Python subprocess module**