

Programming Essentials (66631)

Polytechnic Curriculum

4th Semester: Electrical, Electronics & Mechanical Technology

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2.1 History of Python:

- The Python was conceived in the late 1980s
- its implementation was started in December 1989
- by Guido Van Rossum in Netherland.
- as a successor to the ABC Programming Language.
- Van Rossum is Python's principal author
- Python was named for the BBC TV show *Monty Python's Flying Circus*.
- Python 2.0 was released on October 16, 2000
- Python 3.0 was released on December 3, 2008 which is compatible with Python 2.6 and 2.7

2.2 features of Python

- **Easy-to-learn**
- **Easy-to-read**
- **Easy-to-maintain**
- **A broad standard library**
- **Interactive Mode**
- **Portable**
- **Extendable**

2.3 Structure of Python Program:

- **Interactive Mode Programming**
- **Script Mode Programming**

2.4 State Identifiers and Keywords

- **Identifiers:**

- ✓ Python এ ব্যবহৃত Variable, function, class, object ইত্যাদির নাম কে Identifier বলে।
- ✓ Identifier এর প্রথম অক্ষর A to Z অথবা a to z অথবা underscore (_) দিয়ে শুরু করতে হবে এবং পরবর্তীতে letters, underscores বা digits (0 to 9) ব্যবহার করা যাবে।
- ✓ Python প্রোগ্রাম punctuation characters যেমন @, \$, এবং % ইত্যাদি identifier এ ব্যবহার করা যাবে না।
- ✓ Python একটি case sensitive programming language.

- **Keywords:**
- Python এর reserved word সমূহকে Keyword বলে। Keyword সমূহকে কোন না কোন কাজের জন্য প্রোগ্রামে ব্যবহার করা হয়। ফলে এদেরকে identifier এর নাম হিসেবে প্রোগ্রামে ব্যবহার করা যায় না।
- All the Python keywords contain lowercase letters only.
- Some Python Keyword are print, if, elif, else, while, for, and, in, class etc.

2.5 State Lines & Indentation, Multi-Line Statements and Multiple Statements on a Single Line:

- **Lines & Indentation:**

Python provides no braces to indicate blocks of code for class and function definitions or flow control. Blocks of code are denoted by line Indentation, which is rigidly enforced.

- **Multi-Line Statements:**

Statements in Python typically end with a new line. Python does, however, allow the use of the line continuation character (`\`) to denote that the line should continue.

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```
total = item_one + \  
item_two + \  
item_three
```

Statements contained within the [], {}, or () brackets do not need to use the line continuation character

```
days = ['Monday', 'Tuesday', 'Wednesday',  
        'Thursday', 'Friday']
```


- **Multiple Statements on a Single Line:**

The semicolon (;) allows multiple statements on the single line

```
DPI="Dhaka Polytechnic Institute"; a=50; b=56.34; pi=3.14
```

2.6 State Quotation and Comments in Python

- **Quotation in Python:**

- ✓ Python accepts single ('), double (") and triple (''' or ''') quotes to denote string literals, as long as the same type of quote starts and ends the string.
- ✓ The triple quotes are used to span the string across multiple lines.

DPI='Dhaka Polytechnic Institute'

DPI="Dhaka Polytechnic Institute"

im=""I am a student Computer Department,
Dhaka Polytechnic Institute, Tejgaon, Dhaka.
Dhaka Polytechnic under the BTEB""

Comments in Python:

A hash sign (#) that is not inside a string literal begins a comment. All characters after the # and up to the end of the physical line are part of the comment and the Python ignores them.

```
# this is my first program
```

```
# Program to determine largest number from three
```



১। সংগা দাঁড়: Identifier, Keyword/Reserve word, Line Indentation.

২। Python এ Identifier তৈরির নিয়মাবলী

৩। Python এর Features/বৈশিষ্ট্য সমূহ লেখ

৪। Interactive ও Script mode এর মধ্যে পার্থক্য লেখ।

৫। Python এর Quotation ও Comments এর ব্যবহার দেখাও।

