Python Programming

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Introduction to Python Programming

Learning outcomes:

Introduction to Python Programming:
- **What is Python Programming**
- **History of Python Programming**
- **Features of Python Programming**
- **Why to learn Python Programming**
- **Application of Python Programming**

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What is Python Programming

- Python is a high level, interpreted, intelligent, and object-oriented scripting language.
- Python is handled at runtime by the interpreter. You don't need to compile your code before executing it.
- Python is very interesting and easy to learn language. Learning of Python Programming is as easier as C language.

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What is Python Programming

- Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance.
- Python supports modules and packages, which encourages program modularity and code reuse.
- The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.

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History of Python Programming

- Python was created by **Guido van Rossum.**
- The design began in the late 1980.
- Soon after that, **Guido Van Rossum** began doing its application based work in December of 1989 by at Centrum Wiskunde & Informatica (CWI) which is situated in Netherland.
- The first release was on February 1991.

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History of Python Programming

"Python is an experiment in how much freedom programmers need. Too much freedom and nobody can read another's code. Too little and expressiveness is endangered."
- Guido van Rossum

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History of Python Programming

Why Python was created?

- In late 1980s, Guido Van Rossum was working on the Amoeba distributed operating system group.
- He wanted to use an interpreted language like ABC (ABC has simple easy-to-understand syntax) that could access the Amoeba system calls.
- So, he decided to create a language that was extensible. This led to design of a new language which was later named Python.

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History of Python Programming

Why the name Python?

- It wasn't named after a dangerous snake.

- Rossum was fan of a comedy series from late seventies.

- The name "Python" was adopted from the same series "Monty Python's Flying Circus".

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History of Python Programming

Release Dates of Different Versions

VERSIONS	RELEASE DATES
Python 1.0 (first standard release) Python 1.6 (Last minor version)	Jan 1994 Sep 5, 2000
Python 2.0 (Introduced list comprehensions) Python 2.7 (Last minor version)	Oct 16,2000 July 3, 2010
Python 3.0 (Emphasis on removing duplicative constructs and module) Python 3.5 (Last updated version)	Dec 3, 2008 Sep 13, 2015

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Features of Python Programming

Python is Interpreted: Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.

Python is Interactive: You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.

Python is Object-Oriented: Python supports Object-Oriented style or technique of programming that encapsulates code within objects.

Python is a Beginner's Language: Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

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Features of Python Programming

- A simple language which is easier to learn
- Free and open-source
- Portability
- Extensible and Embeddable
- A high-level, interpreted language
- Large standard libraries to solve common tasks
- Free and open source
- GUI Programming

Why to learn Python Programming

In an independent 3rd party survey, it has been found that the Python programming language is currently the most popular language for **Data Scientists** worldwide. This claim is substantiated by IEEE, which tracks programming languages by popularity. According to them, Python tops the list of the most popular programming languages in 2018.

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Why to learn Python Programming

- According to Indeed, the average **Python developer salary in the US in 2020 is $120K per year** (or $56.75 per hour), which grew by **14%** for the last 4 years.
- The entry-level Python developer salary in the USA is **$74,435**.
- Middle developers earn **$100,826.**
- Experienced Python developers are paid on average **$127,217** per year.

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Why to learn Python Programming

- **Python is used in Machine Learning and Artificial Intelligence**
- **Python is used in Web development**
- **Python has a large community**
- **Python is used in Scripting and Automation**
- **Python has many libraries and frameworks**

Application of Python Programming

- Python supports **cross-platform operating systems** which makes building applications with it all the more convenient. Some of the globally known applications such as [YouTube](#), BitTorrent, DropBox, etc. use Python to achieve their functionality.

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Application of Python Programming

- **Web Development.**
- **Game Development.**
- **Scientific and Numeric Applications.**
- **Artificial Intelligence and Machine Learning.**
- **Software Development.**
- **Enterprise-level/Business Applications. Education programs and training courses.**
- **Language Development.**
- **Desktop GUI**
- **Web Scraping Applications**
- **Business Applications**

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Thank you