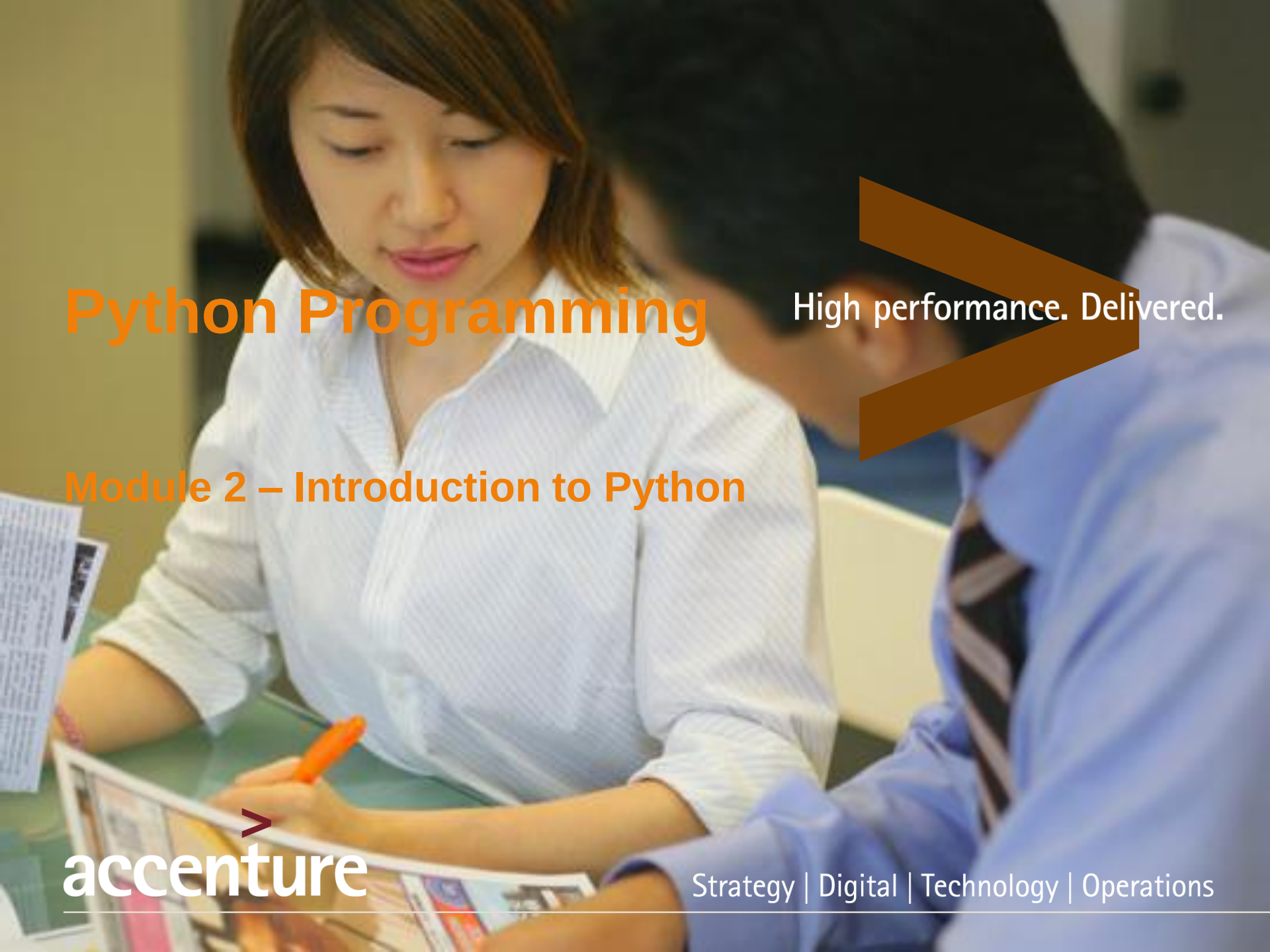
Python Programming
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Module 2 – Introduction to Python
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Agenda

- The evolution of Python Programming Language
- The History of Python Language
- The Features of Python Language
- Python Releases
- Applications of Python
- Python Package Index (PyPI)

Module Objectives

At the end of this module you will be able to Understand…

- The evolution of Python Programming Language
- The History of Python Language
- The Features of Python Language
- Python Releases
- Applications of Python
- Python Package Index (PyPI)

About Python

- Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language.
- Created by Guido van Rossum (Python's principal author) during 1985-1990.
- Python is designed to be highly readable.
- Python source code is available under the GNU General Public License (GPL).

Creator of Python

“Python is an experiment in how much freedom programmers need. Too much freedom and nobody can read another's code; too little and expressive-ness is endangered.”

- Guido van Rossum

Python Language Overview (1 of 3)

- Python is a widely used general-purpose, high-level programming language.
- Its syntax allows programmers to express concepts in fewer lines of code than would be possible in languages
- It emphasizes code **readability**
- **Interpreted:** Python instructions are processed at runtime by the python interpreter. There is no need to compile the program before executing it. This is similar to PERL and PHP.

Python Language Overview (2 of 3)

- **Interactive:** Instructions can be given at the Python prompt and the programmer can interact with the interpreter directly.
- **Object-Oriented**: Python supports Object-Oriented programming that encapsulates code within objects.
- **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.

Python Language Overview (3 of 3)

- **Uses English keywords**: It uses English keywords which are easy to understand syntactical constructions unlike other programming languages.
- **Multi-purpose** (Web, GUI, Scripting, etc.)

History of Python

- Developed by **Guido van Rossum** in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.
- Named after Monty Python (A Comedy Group).
- Open sourced.
- Managed by Python Software Foundation
- Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, Smalltalk, and Unix shell and other scripting languages.
- Considered a scripting language, but is much more.

Python Features (1 of 4)

Python's features include:

- **Easy-to-learn:** Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.
- **Easy-to-read:** Python code is more clearly defined and visible to the eyes.
- **Easy-to-maintain:** Python's source code is fairly easy-to-maintain.
- **A broad standard library:** Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.

Python Features (2 of 4)

Python's features include:

- **Interactive Mode:** Python has support for an interactive mode which allows interactive testing and debugging of snippets of code.
- **Portable:** Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable:** You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases:** Python provides interfaces to all major commercial databases.

Python Features (3 of 4)

Python Features include..

- **GUI Programming:** Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable:** Python provides a better structure and support for large programs than shell scripting.
- **supports functional , structured and OO programming methods**:
- It can be used as a scripting language or can be compiled to byte-code for building large applications.

Python Features (4 of 4)

Python features include..

- It provides very high-level dynamic data types and supports dynamic type checking.
- IT supports automatic garbage collection.
- It can be easily integrated with C, C++, COM, ActiveX, CORBA, and Java.

Python Releases

- Created in 1989 by Guido Van Rossum
- Python 1.0 released in 1994
- Python 2.0 released in 2000
- Python 2.7.0 released in 2010.
- Python 2.7.11 released in 2015
- Python 3.0 released in 2008.
- Python 3.3 released in 2012.
- Python 3.4 released in 2014.
- Python 3.5 released in September 2015.

Note: ***Python 2.x is legacy, Python 3.x is the present and future of the language.***

Python Applications

- Python is used for Web and Internet Development
- Python is widely used in scientific and numeric computing
- Python is often used as a support language by software developers, for build control and management, testing, and in many other ways.

Python Package Index (PyPI)

- The **Python Package Index** is a repository of software (libraries) for the Python programming language.
- There are currently **75171** packages for Python.

Questions and Comments

- What questions or comments do you have?