TechnoStrom

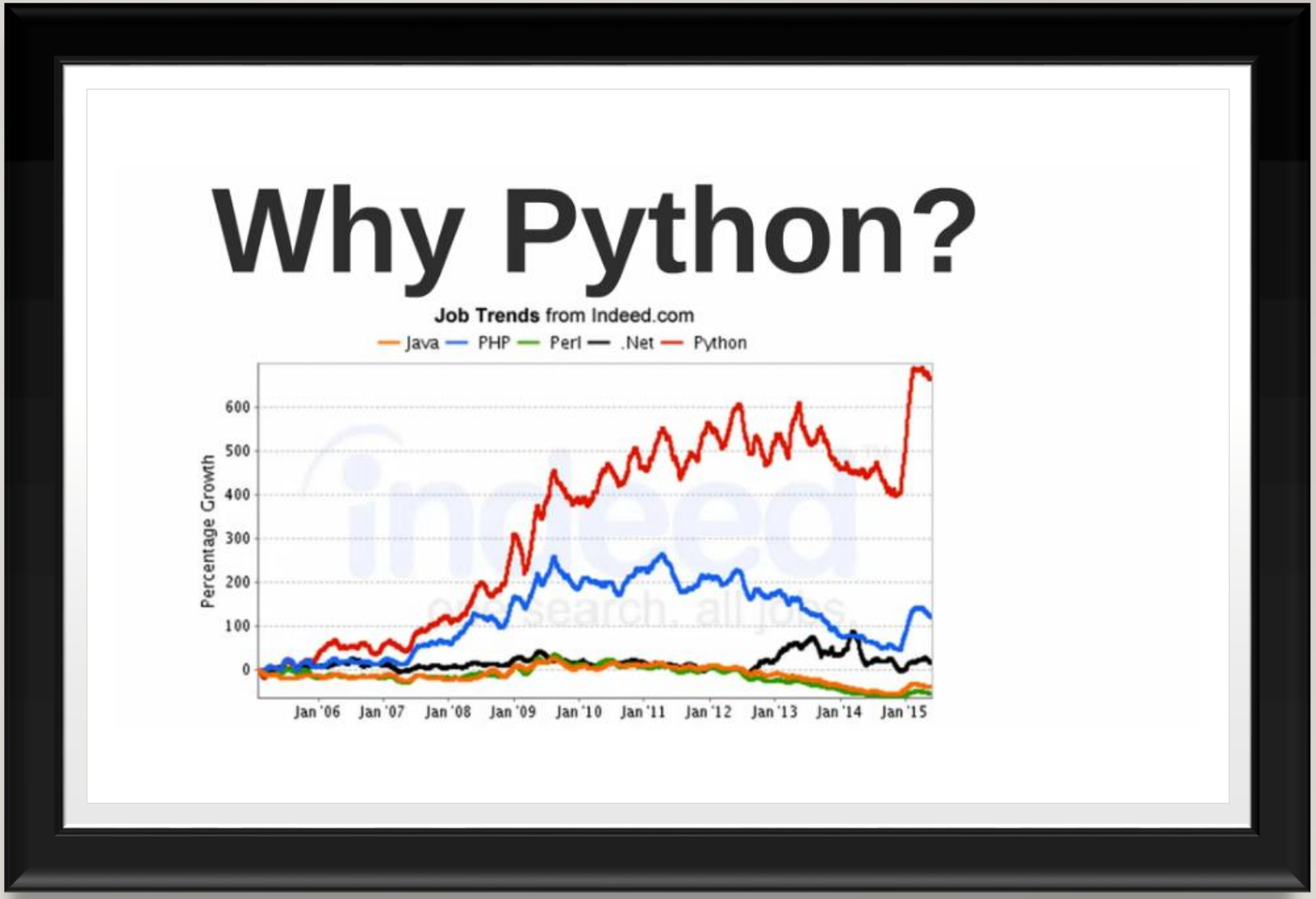
PYTHON INTRO

RAVINDRA KUDACHE :- 9730551007

OVERVIEW

- Python was 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.
- Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, SmallTalk, and Unix shell and other scripting languages.
- Python is copyrighted. Like Perl, Python source code is now available under the GNU General Public License (GPL).
- Python is now maintained by a core development team at the institute, although Guido van Rossum still holds a vital role in directing its progress.

OVERVIEW


Why Python?
Job Trends from Indeed.com
Java
PHP
Perl
.Net
Python
Percentage Growth
600
500
400
300
200
100
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Jan '06
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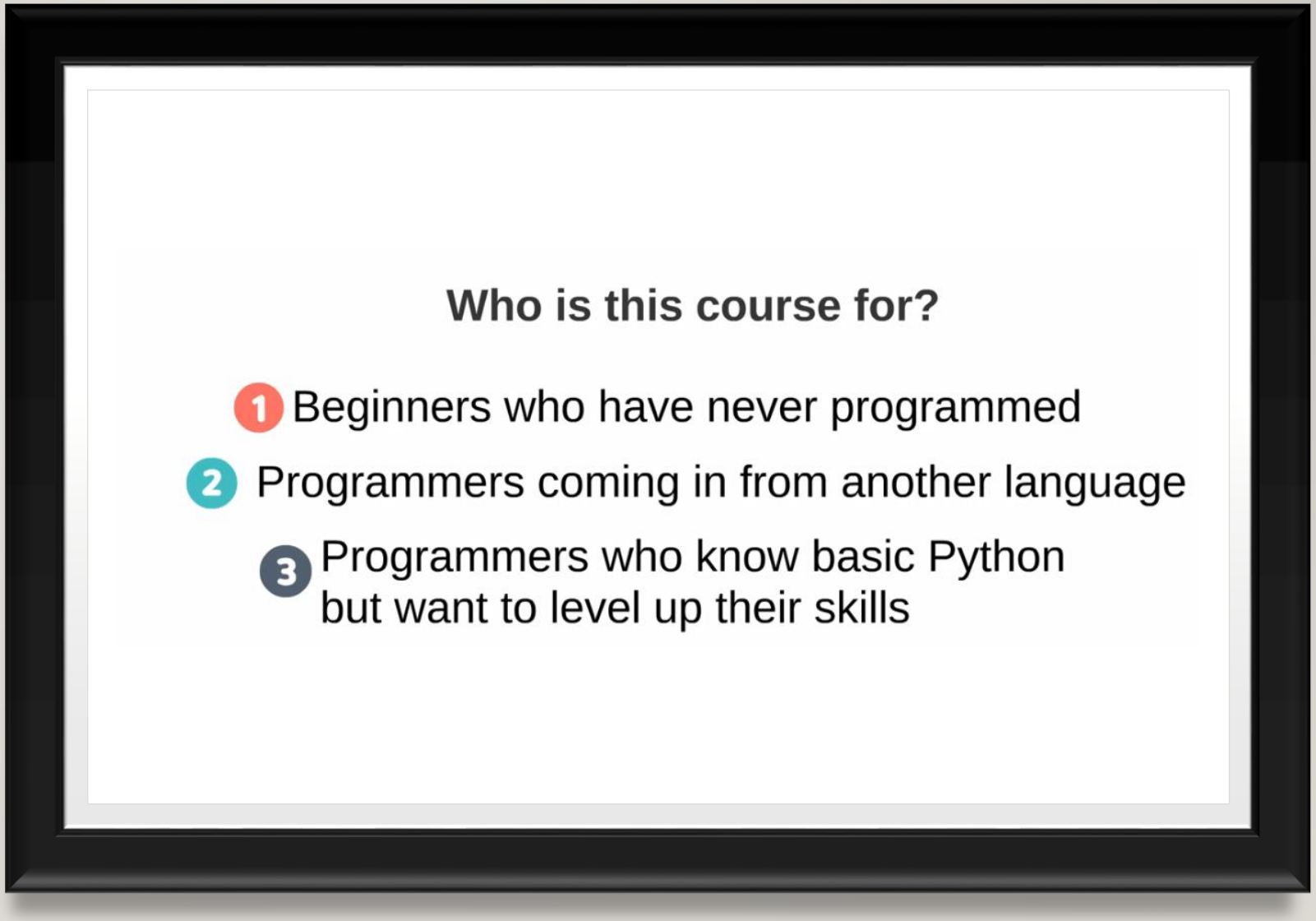
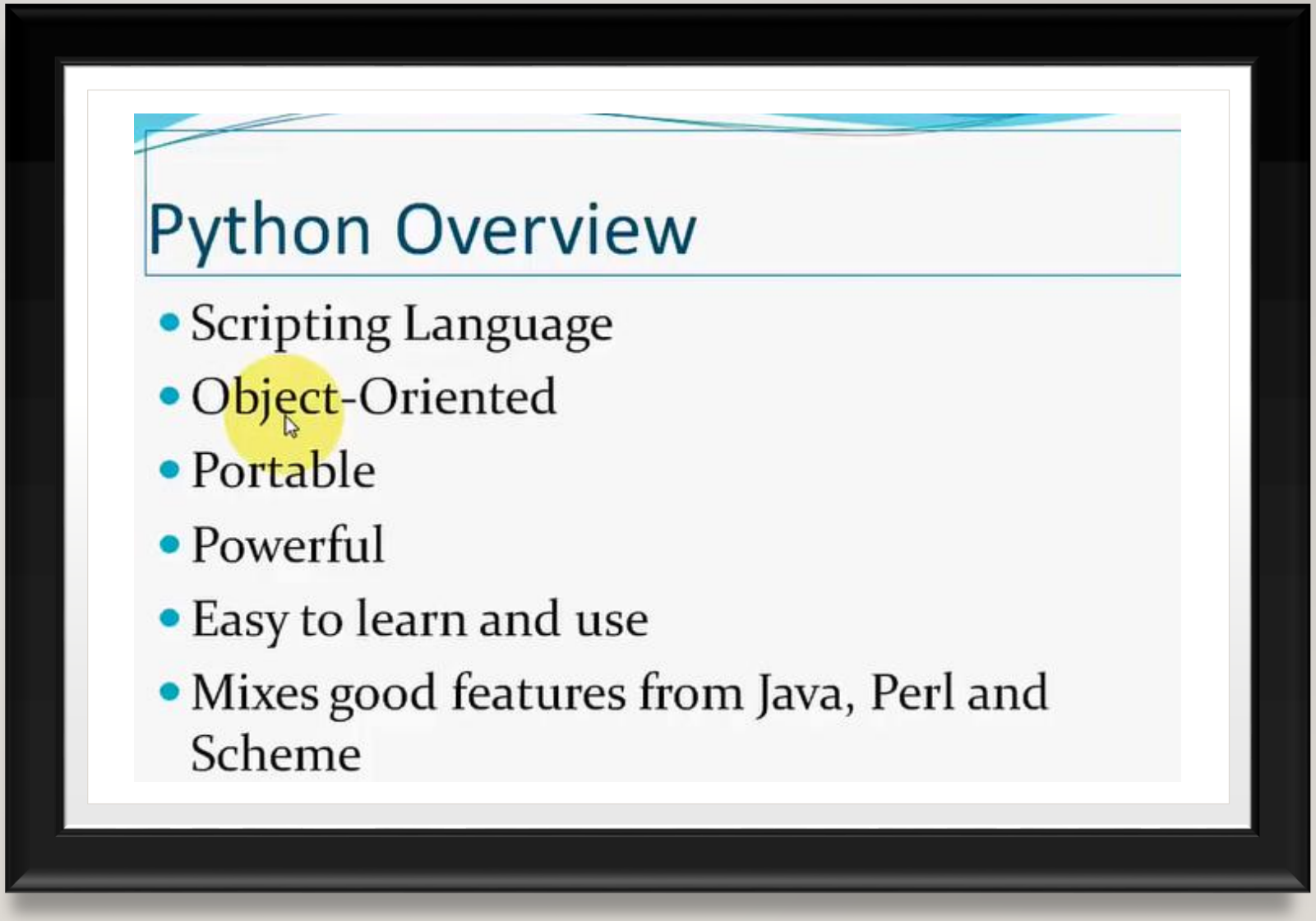
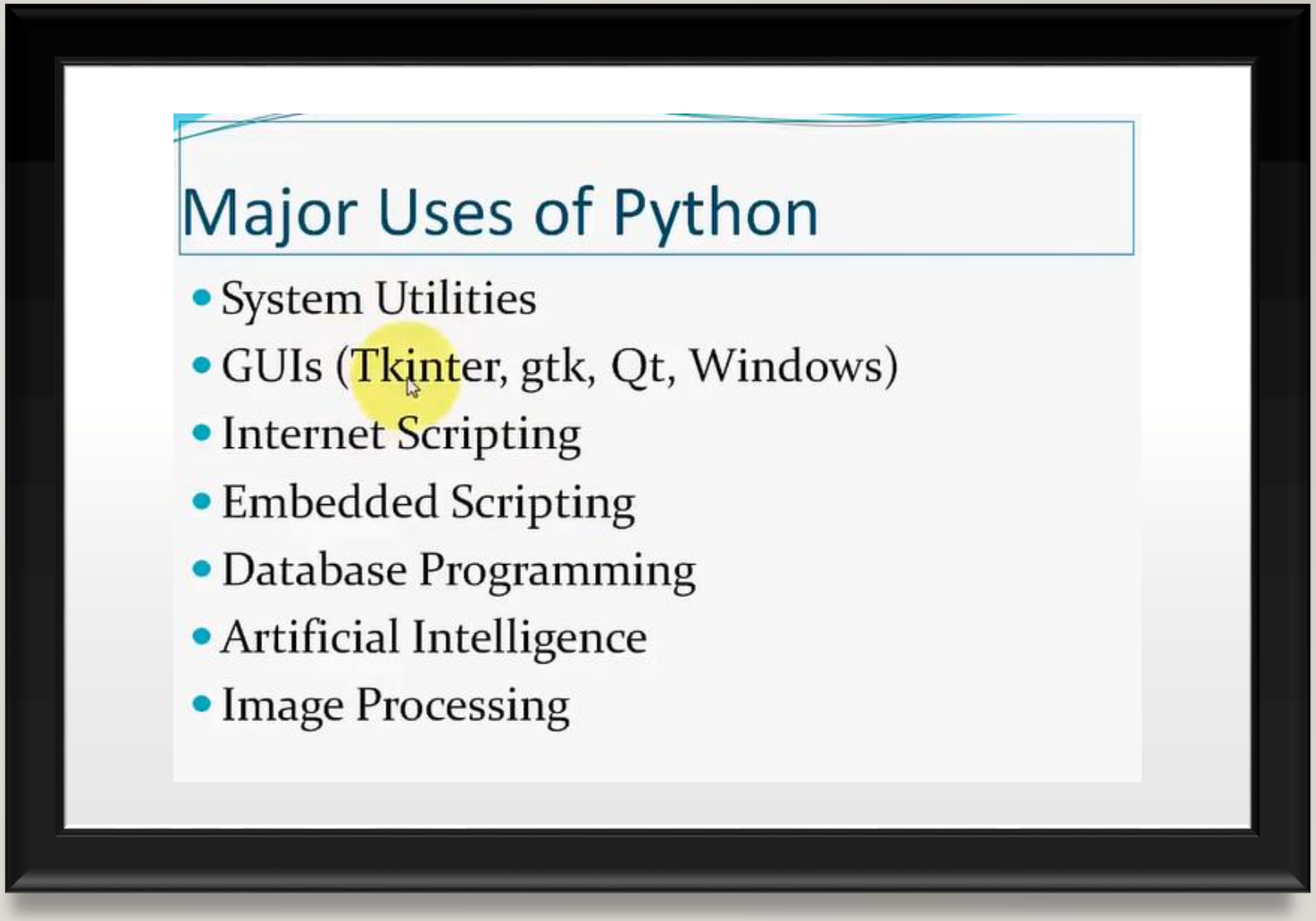
OVERVIEW


Who is this course for?
1 Beginners who have never programmed
2 Programmers coming in from another language
3 Programmers who know basic Python but want to level up their skills

OVERVIEW


Python Overview
Scripting Language
Object-Oriented
Portable
Powerful
Easy to learn and use
Mixes good features from Java, Perl and Scheme

OVERVIEW


Major Uses of Python
System Utilities
GUIs (Tkinter, gtk, Qt, Windows)
Internet Scripting
Embedded Scripting
Database Programming
Artificial Intelligence
Image Processing

OVERVIEW

- **Easy-to-learn:** Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up t
- **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, a
- **Interactive Mode:**Python has support for an interactive mode which allows interactive testing and debugging of snippets of
- **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 cus more efficient.
- **Databases:** Python provides interfaces to all major commercial databases.
- **GUI Programming:** Python supports GUI applications that can be created and ported to many system calls, libraries and wi Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable:** Python provides a better structure and support for large programs than shell scripting.
- Apart from the above-mentioned features, Python has a big list of good features, few are listed below:
- It supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for building large applications.
- 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.

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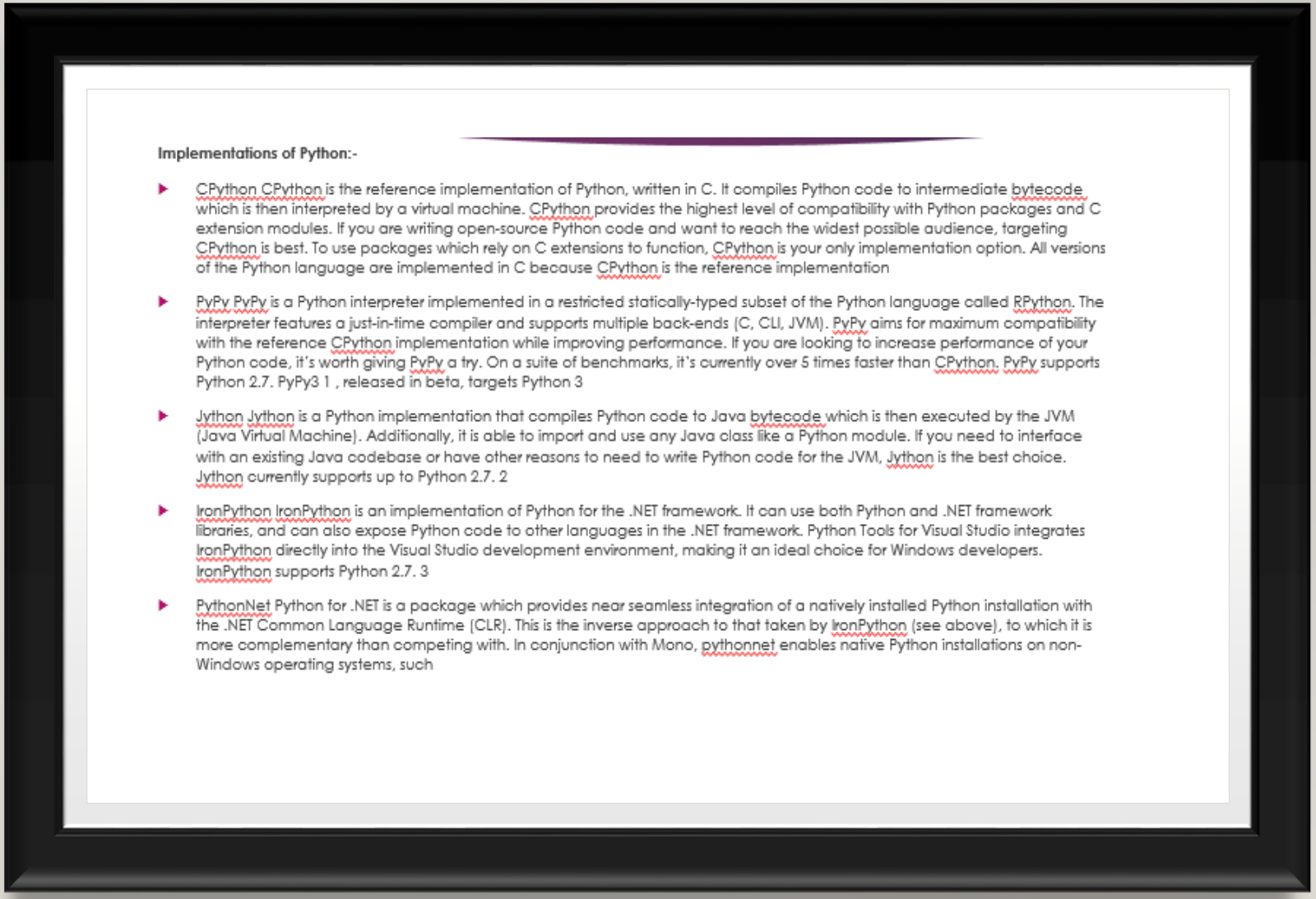
- Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.
- **Python is Interpreted:** 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.

OVERVIEW



Implementations of Python:-

- CPython CPython is the reference implementation of Python, written in C. It compiles Python code to intermediate bytecode which is then interpreted by a virtual machine. CPython provides the highest level of compatibility with Python packages and C extension modules. If you are writing open-source Python code and want to reach the widest possible audience, targeting CPython is best. To use packages which rely on C extensions to function, CPython is your only implementation option. All versions of the Python language are implemented in C because CPython is the reference implementation
- PyPy PyPy is a Python interpreter implemented in a restricted statically-typed subset of the Python language called RPython. The interpreter features a just-in-time compiler and supports multiple back-ends (C, CLI, JVM). PyPy aims for maximum compatibility with the reference CPython implementation while improving performance. If you are looking to increase performance of your Python code, it's worth giving PyPy a try. On a suite of benchmarks, it's currently over 5 times faster than CPython. PyPy supports Python 2.7. PyPy3 1 , released in beta, targets Python 3
- Jython Jython is a Python implementation that compiles Python code to Java bytecode which is then executed by the JVM (Java Virtual Machine). Additionally, it is able to import and use any Java class like a Python module. If you need to interface with an existing Java codebase or have other reasons to need to write Python code for the JVM, Jython is the best choice. Jython currently supports up to Python 2.7. 2
- IronPython IronPython is an implementation of Python for the .NET framework. It can use both Python and .NET framework libraries, and can also expose Python code to other languages in the .NET framework. Python Tools for Visual Studio integrates IronPython directly into the Visual Studio development environment, making it an ideal choice for Windows developers. IronPython supports Python 2.7. 3
- PythonNet Python for .NET is a package which provides near seamless integration of a natively installed Python installation with the .NET Common Language Runtime (CLR). This is the inverse approach to that taken by IronPython (see above), to which it is more complementary than competing with. In conjunction with Mono, pythonnet enables native Python installations on non-Windows operating systems, such

OVERVIEW

We will See you on Next Session

Thank You