

# PYTHON PROGRAMMING

DEVELOPED FOR KNOWLEDGE



# INTRODUCTION TO PYTHON

- Python is a widely used high-level programming language, like all high-level programming languages, Python code resembles the English language which computers are unable to understand.
- Codes that we write in Python have to be interpreted by a special program known as the Python interpreter.
- The language places strong emphasis on code readability and simplicity, making it possible for programmers to develop applications rapidly.
- 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.
- Python is handled at runtime by the interpreter. You don't need to compile your code before executing it.
- Python supports modules and packages, which encourages program modularity and code reuse.

## KEY POINTS:

**HIGH-LEVEL PROGRAMMING LANGUAGE**

**CODE RESEMBLES THE ENGLISH LANGUAGE WHICH NEEDS TO BE INTERPRETED BY PYTHON INTERPRETER**

**CODE READABILITY**

**FREELY DISTRIBUTED OR OPEN SOURCE**

**HANDLED DURING RUNTIME**

# STORY BEHIND PYTHON

- IT WASN'T NAMED AFTER A DANGEROUS SNAKE. THE NAME "PYTHON" WAS ADOPTED FROM THE COMEDY SERIES "MONTY PYTHON'S FLYING CIRCUS".
- IN LATE 1980S, GUIDO VAN ROSSUM WAS WORKING ON THE AMOEBA DISTRIBUTED OPERATING SYSTEM GROUP. HE WANTED TO USE AN INTERPRETED LANGUAGE WHICH HAS SIMPLE EASY-TO-UNDERSTAND SYNTAX THAT COULD ACCESS THE AMOEBA SYSTEM CALLS. THIS LED TO DESIGN OF AN EXTENSIBLE LANGUAGE WHICH WAS LATER NAMED PYTHON.
- **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.

**“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**

# FEATURES OF PYTHON

- ✓ AS SIMPLE LANGUAGE AS ENGLISH WHICH MAKES IT EASIER TO LEARN
- ✓ FREE AND OPEN-SOURCE
- ✓ PORTABILITY
- ✓ EXTENSIBLE AND EMBEDDABLE
- ✓ HIGH-LEVEL, INTERPRETED LANGUAGE
- ✓ LARGE STANDARD LIBRARIES TO SOLVE COMMON TASKS
- ✓ GUI PROGRAMMING

# NEED TO LEARN PYTHON

- PYTHON'S POPULARITY AND ADOPTION ARE CONTINUALLY INCREASING, ENSURING THAT SKILLS IN PYTHON WILL REMAIN RELEVANT AND VALUABLE IN THE FORESEEABLE FUTURE. 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.
- PYTHON CAN EASILY INTEGRATE WITH OTHER LANGUAGES AND TECHNOLOGIES.
- PYTHON CAN AUTOMATE MUNDANE TASKS LIKE **FILE MANIPULATION, WEB SCRAPING, AND EVEN SENDING EMAILS, INCREASING PRODUCTIVITY.**
- **RELEVANCE IN DATA SCIENCE AND AI**
- **STRONG COMMUNITY AND ECOSYSTEM**

**LEARNING PYTHON CAN BE HIGHLY BENEFICIAL FOR SEVERAL REASONS, SPANNING PERSONAL GROWTH, PROFESSIONAL DEVELOPMENT, AND PRACTICAL UTILITY.**



# USE CASES

- **WEB DEVELOPMENT**
- **GAME DEVELOPMENT.**
- **SCIENTIFIC AND NUMERIC APPLICATIONS.**
- **ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING.**
- **SOFTWARE DEVELOPMENT.**
- **ENTERPRISE-LEVEL/BUSINESS APPLICATIONS.**
- **EDUCATION PROGRAMSAND TRAINING COURSES.**
- **LANGUAGE DEVELOPMENT.**
- **DESKTOP GUI**
- **WEB SCRAPING APPLICATIONS**