Present day evolution of programming languages

C# OWL .NET BASIC Scala
Actionscript JavaScript PostScript MATLAB
XML RDF Node.js C++ Clojure
visualBasic SQL apache Redis Perl VBScript
MongoDB Python Rails PHP
Schema Erlang HTML SVG
MySql XPath Ruby
XQuery

Projections : Python as mainstream programming language
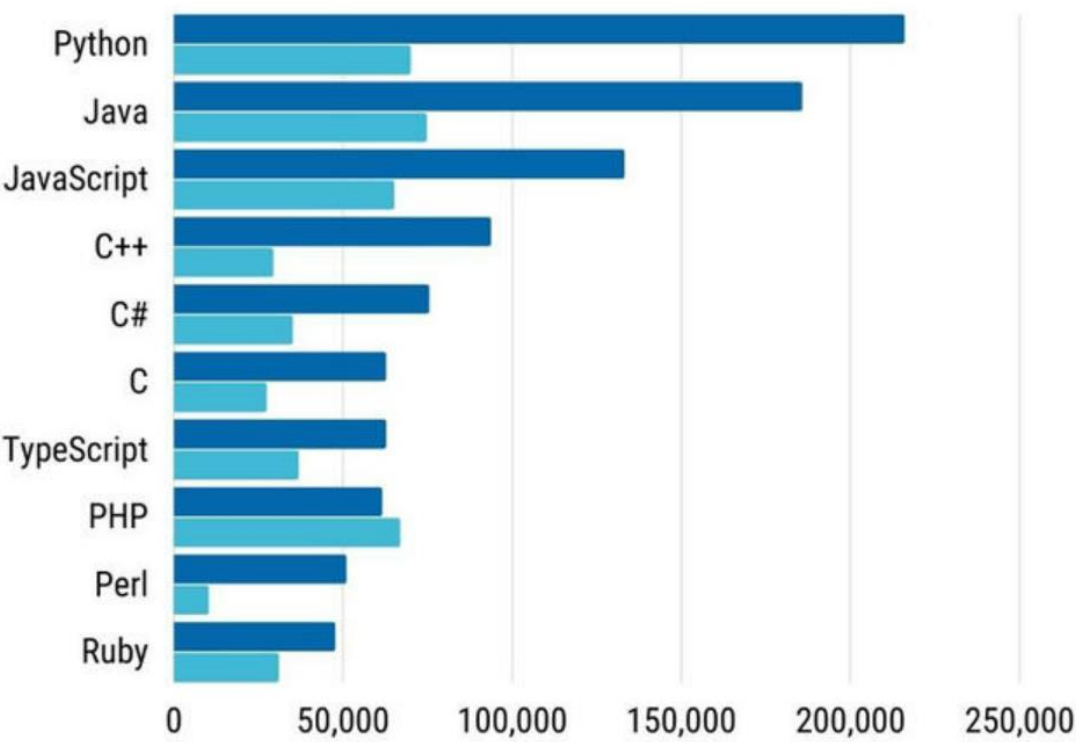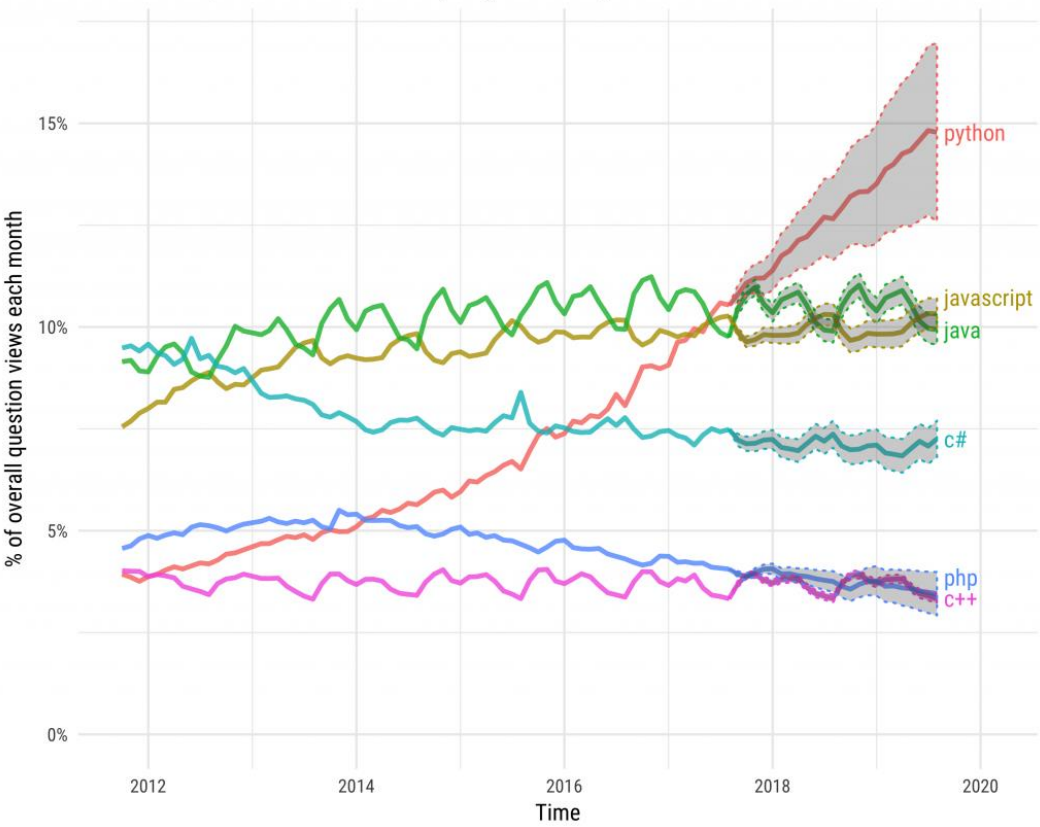
Shift in preference and usage for Python in Software industry

Oct 2021	Oct 2020	Change	Programming Language	Ratings	Change
1	3	▲	Python	11.27%	-0.00%
2	1	▼	C	11.16%	-5.79%
3	2	▼	Java	10.46%	-2.11%
4	4		C++	7.50%	+0.57%
5	5		C#	5.26%	+1.10%
6	6		Visual Basic	5.24%	+1.27%
7	7		JavaScript	2.19%	+0.05%
8	10	▲	SQL	2.17%	+0.61%
9	8	▼	PHP	2.10%	+0.01%
10	17	▲	Assembly language	2.06%	+0.99%

Which companies use Python?

What Value Python Has Brought To Top Apps Built With It

Python

• Fast development
• Easy maintenance

• Huge mathematical calculations
• Efficient data visualizations
• Short learning curve

• Speed

• Simplicity
• Scalability
• Efficiency

• Wealth of libraries and resources
• Clear syntaxis
• Large developer community

• Production engineering
• Infrastructure scalability
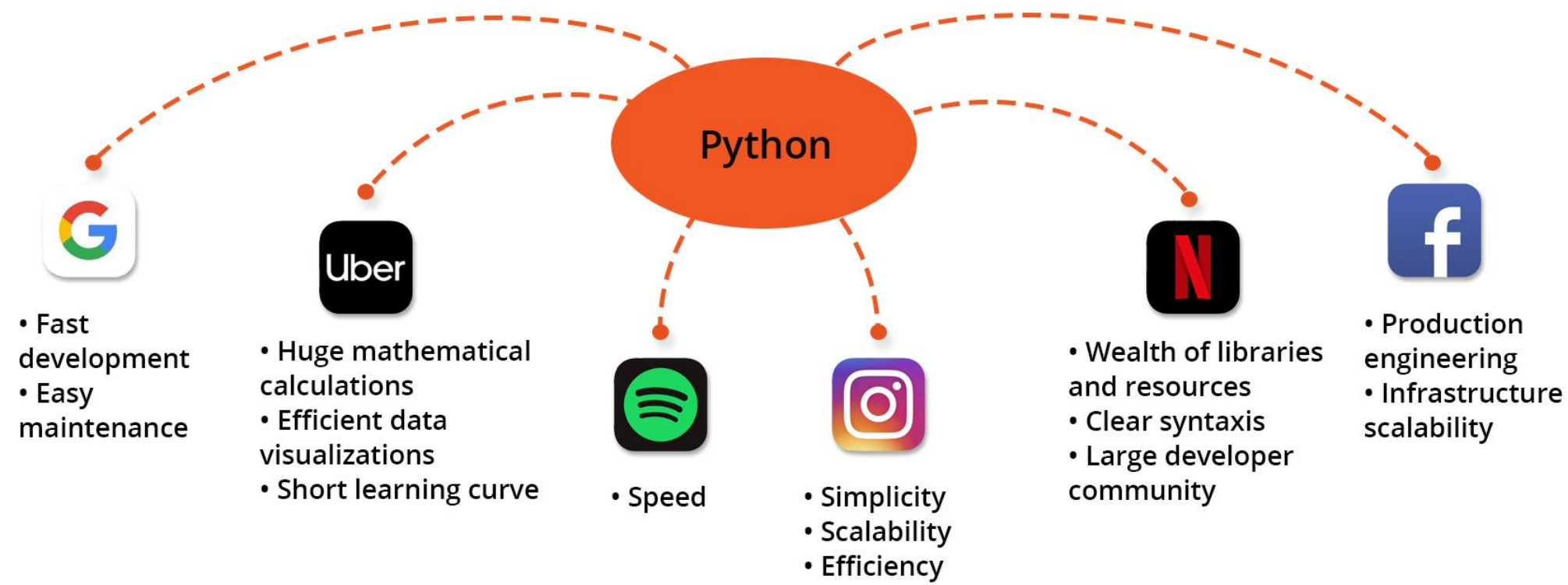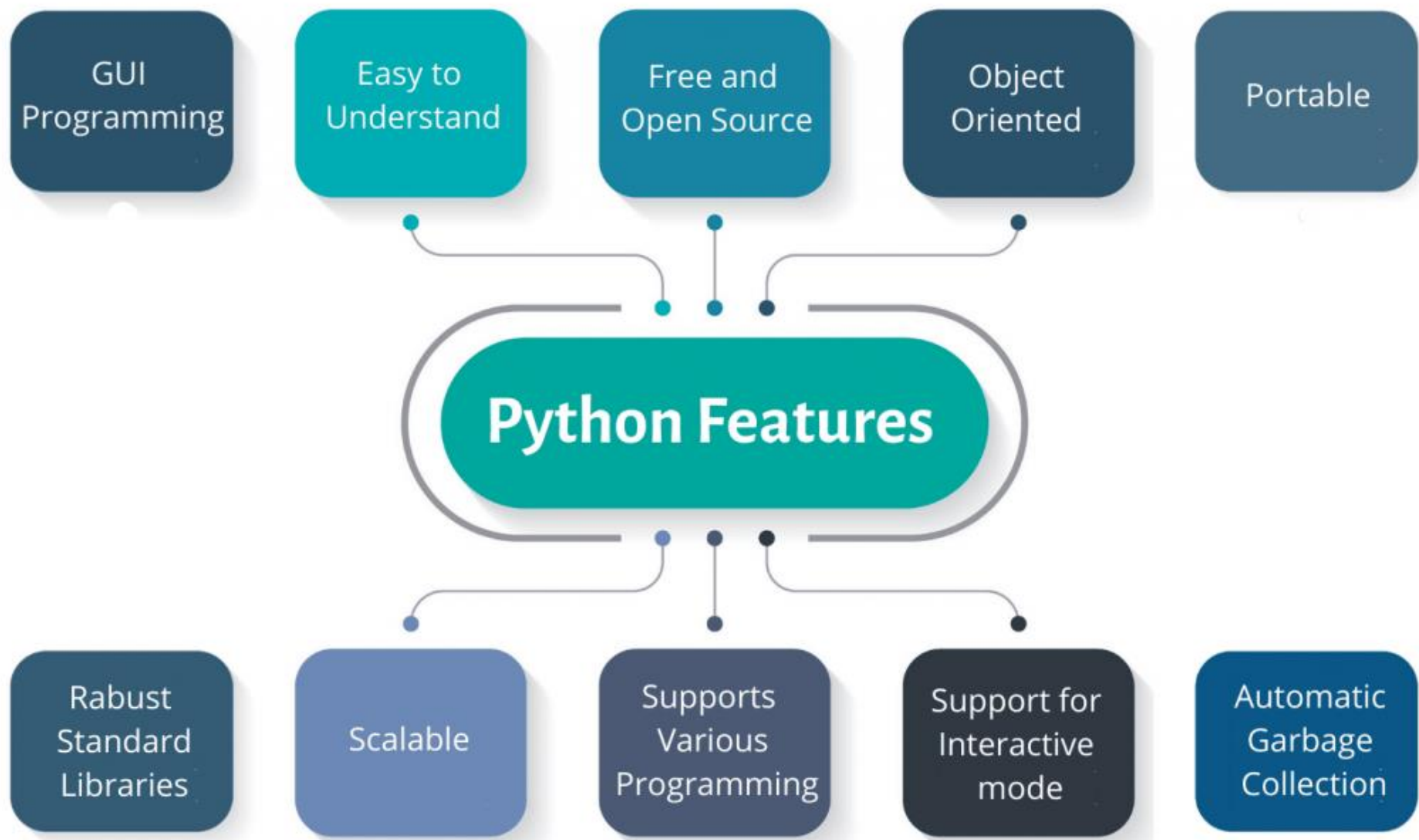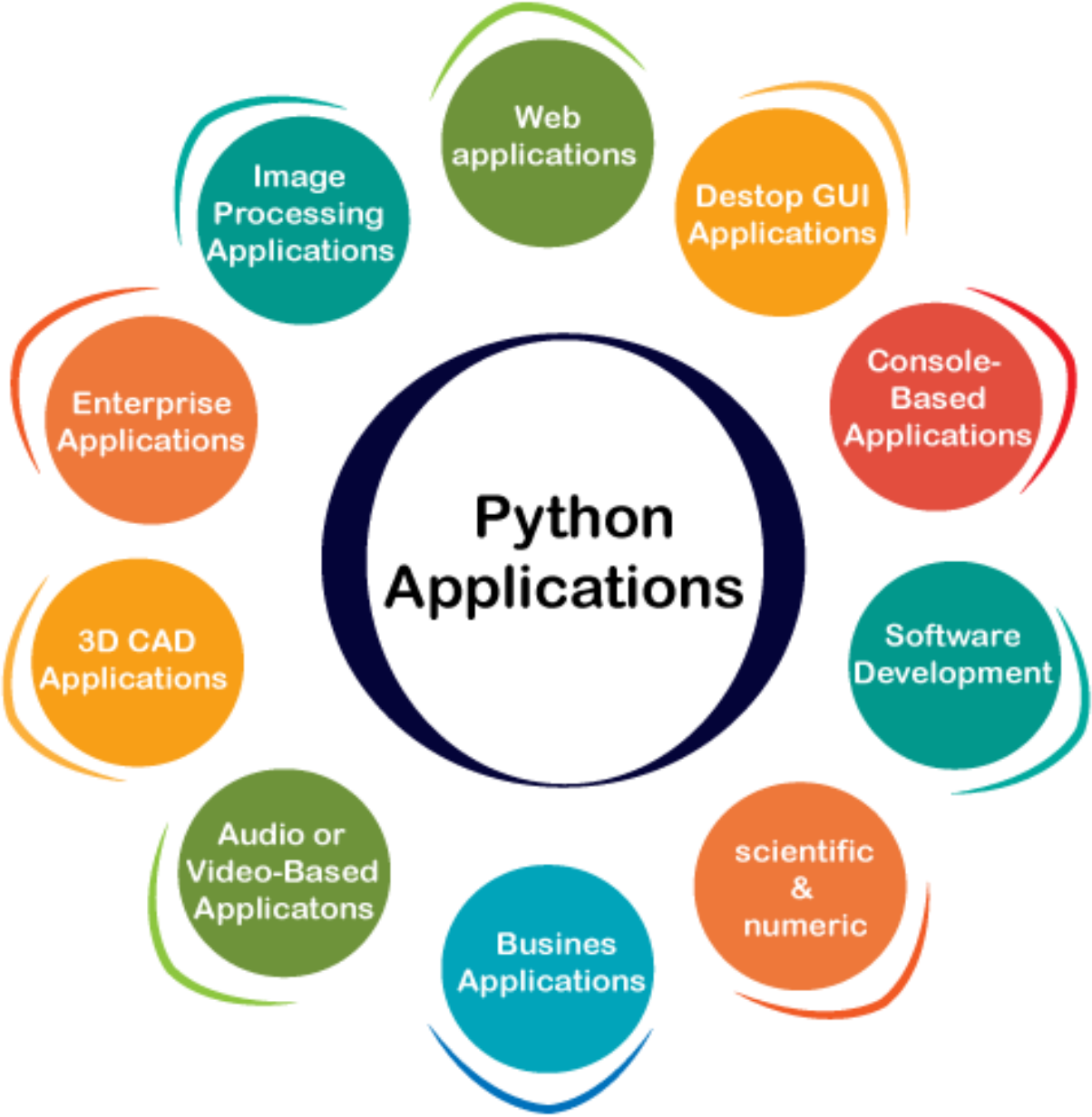
Average Python Job roles Salary
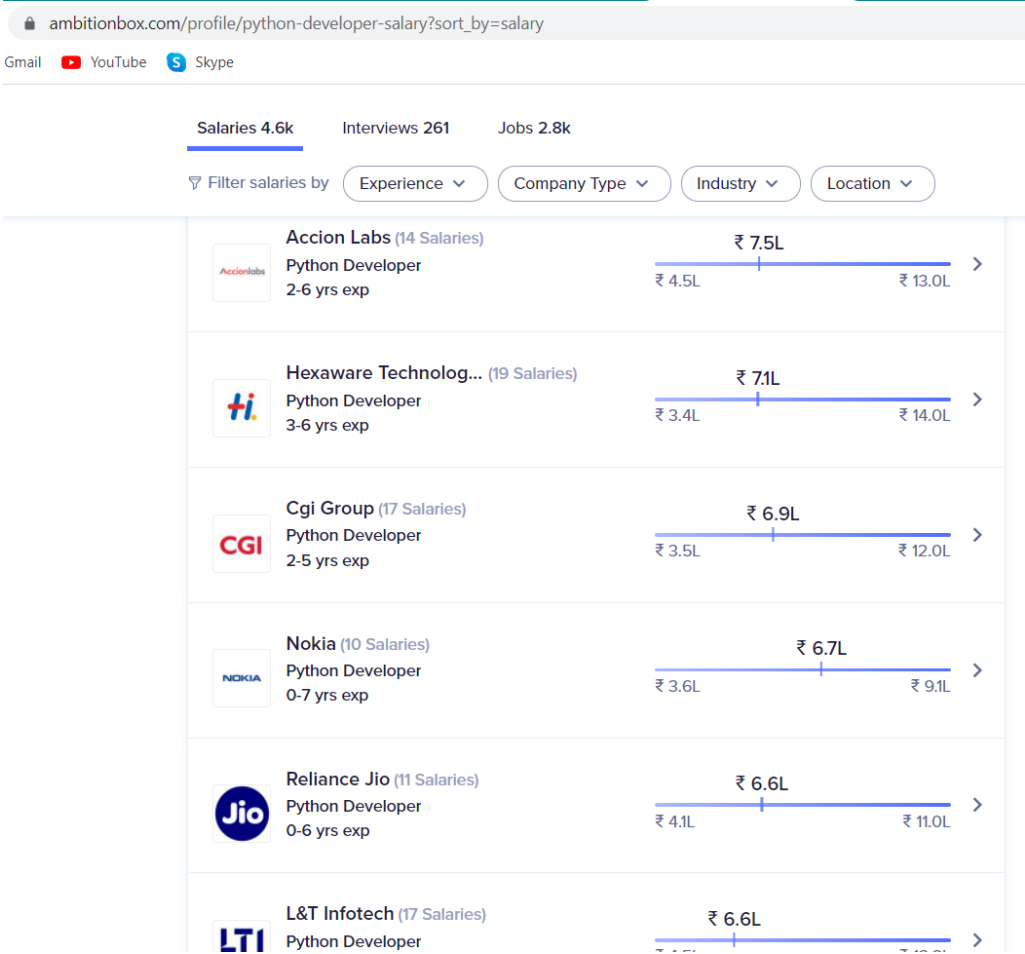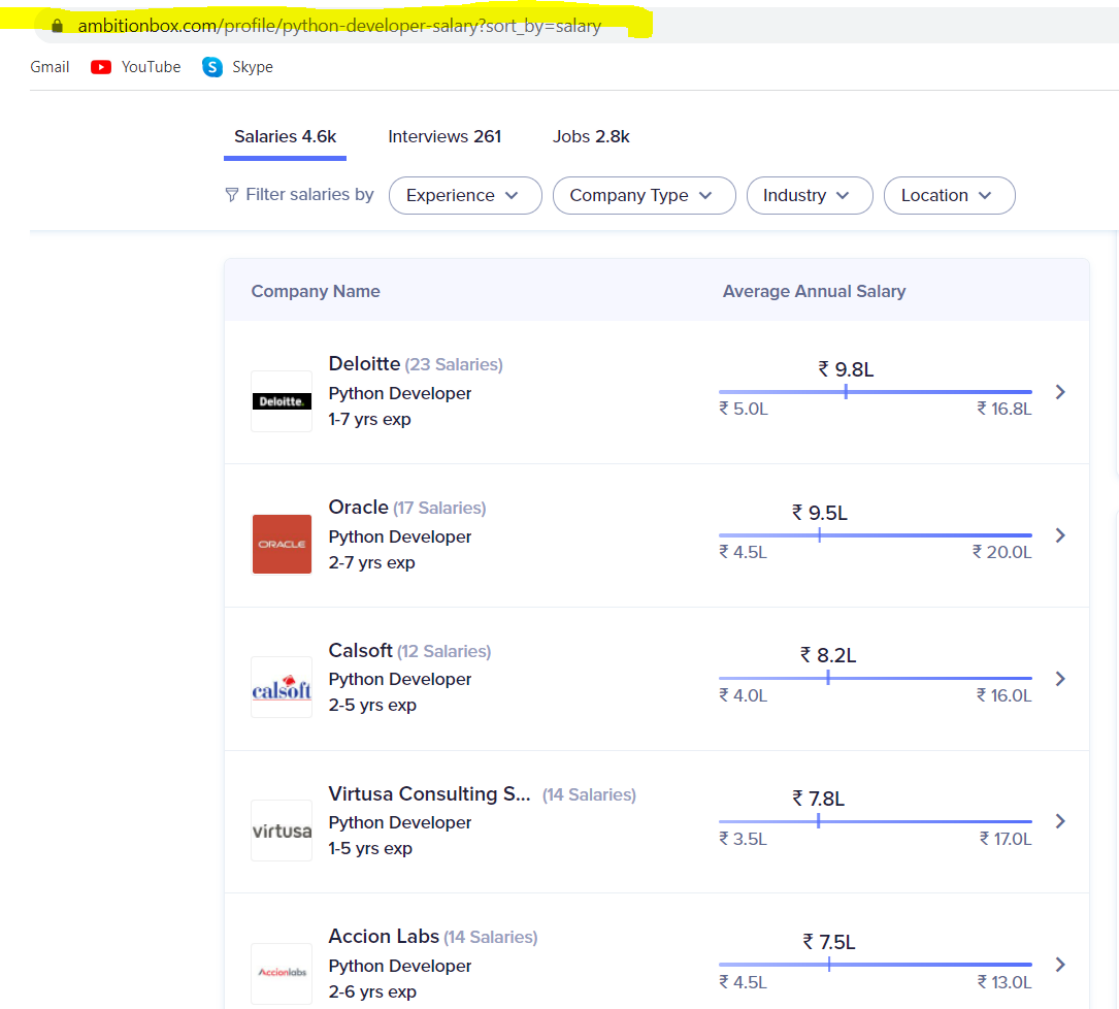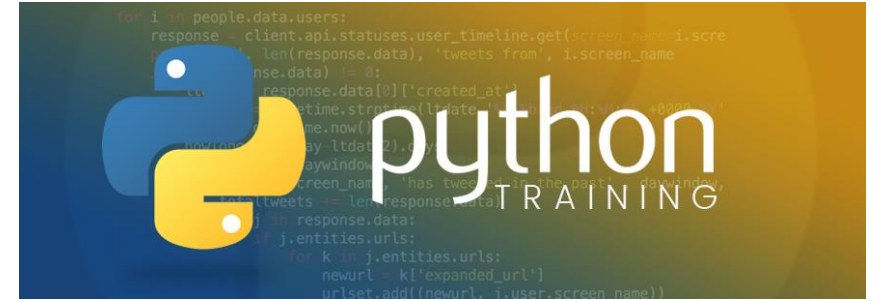
Curriculum :

- ✓ **Weekdays batch** : (1 hour / day ,5 days)
  or
  Weekends batch (2 hours/day - 2 days)
- ✓ Course duration for 2 months
- ✓ Course to deliver Python + Data Analytics
- ✓ Course level : Basic -> Proficient attainment
- ✓ Pre-requisites : Basic knowledge of Computers.
- ✓ Course to focus on Hands on + Periodic assignments

Requirements

- No prior programming experience is required!
- Access to a Computer or Laptop and basic exposure to it

Course Outcome

- Understand the concept of coding, understand the importance and scope of application of Python language.
- Grasp basic code specifications and learn to write code correctly and normatively .
- Grasp Python basic grammar and learn to use Python language correctly.
- Grasp the attribute understanding and drawing function of basic graphics.
- Understand the concept of objects and classes, grasp the properties and methods of common graphic objects and multimedia objects.
- Understand the concepts of variables and functions, and learn to define and use variables and functions correctly .
- Understand conditional logic, learn to use conditional logic to analyze problems, and be able to use if conditional statement to implement conditional logic.
- Understand the concept of events, understand the basic logical relationship of events, and learn to correctly apply various event codes in the code
- Utilize Data analytics concept to filter , analyze and plot the data to arrive at conclusive results.

Course Content

Introduction

Programming Overview , Python – Overview, History, Features, language-Future, job-role prospects, Industrial usages

Environment setup

Local Environment Setup, Downloading Python, Installation, Setting-up system and Python environment , Environment-PATH, Launching Python and IDE

Initial syntaxes
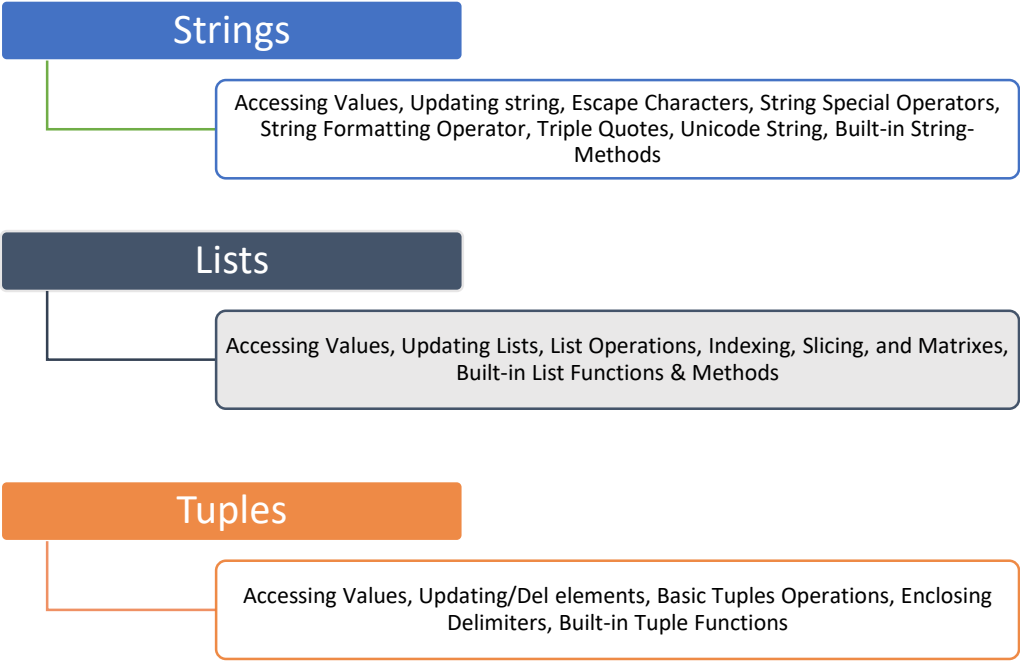
Interactive coding, script-based coding, Identifiers, Reserved keywords, Lines and Indentation, Multi-Line, Quotations, comments, user input, Multiple Statement Groups as Suites, Command Line Arguments

Identifiers

Definition, assigning values, Standard and derived data types, data type conversion

--------------------Topic relevant Assignments for Hands-on coding ------------------

Numbers

Numerical data types, type conversions, Mathematical Functions, Random Number Functions, Trigonometric Functions, Mathematical Constants

Operators

Arithmetic, Comparison, Assignment, Bitwise, Logical, Membership, Identity and Operators Precedence

Decision making

Single/Multiple statements suits, loops, practice- questions

Loops

Types of loops , control statements and keywords

Strings

Accessing Values, Updating string, Escape Characters, String Special Operators, String Formatting Operator, Triple Quotes, Unicode String, Built-in String-Methods

Lists

Accessing Values, Updating Lists, List Operations, Indexing, Slicing, and Matrixes, Built-in List Functions & Methods

Tuples

Accessing Values, Updating/Del elements, Basic Tuples Operations, Enclosing Delimiters, Built-in Tuple Functions

--------------------Topic relevant Assignments for Hands-on coding ------------------

Dictionary

Accessing Values, Updating elements, Properties of Dictionary Keys and values, Built-in Dictionary Functions & Methods

Sets

Accessing Values, updating elements, Elements, Properties of sets Built-in Sets Functions & Methods

Functions

Definitions, Calling, call by reference, arguments - keyword, default, variable length, Anonymous Functions, return Statement, Variables-scope ,Global vs. Local variables

Modules

import statement syntaxes, Locating Modules, PYTHONPATH Variable, Namespaces and Scoping, dir( ), globals() and locals() , Packages in python

Lists

Accessing Values, Updating Lists, List Operations, Indexing, Slicing, and Matrixes, Built-in List Functions & Methods

Files Open-close-read

Reading Keyboard Input, Opening and Closing Files, File methods, the file Object Attributes, Renaming, deleting, Directories in Python and its methods

--------------------Topic relevant Assignments for Hands-on coding ------------------

Exceptions and Error handling

Types, handling – except, try finally clause, Assertion, raising an exception

Classes and Objects

Overview of OOP Terminology, Creation - Classes, objects , accessing attributes , built-in class attributes , inheritances (class) ,Overriding Methods , Overloading operators

Data Science Libraries:
Pandas / NumPy /MatplotLib / Scikit Learn

Read CSV/Excel , Pandas series , data frame , analyzing data , filtering data , cleaning data , Correlations , Plotting data

Arrays , Array - indexing , slicing , Numpy , datatypes , shape , iterate, join , split , search , sort , filter , data distribution .. etc

Python Projects

Developing Scientific Calculator

Analysing a day's twitter feed published using data analytics

Covid-19 Impacts Analysis

(Case Study)

Thank You