I. ABOUT THE PROGRAM

In 1998, a small company from California, with the help of the Python programming language, changed the way we search for relevant information on the Internet. The company had an unusual-sounding name: Google. Twelve years on, this name is valued at 111 billion US dollars, making it one of the most valuable brands in the world. It is safe to assume that without Python, the World Wide Web would not exist in its present form. Not only Google, but also many other companies and open-source communities have changed the web, and with it our lives, using Python.

Agility is the hallmark of our times and Python is the programming language of the agile era. The Python universal programming language is the turbocharger of the IT and Web systems. Compared with other modern programming languages such as Java or C, Python achieves superior results in significantly shorter timescales for a number of different reasons.

The objective of the Basic Part of the course is to provide a working knowledge about the Python programming language with some emphasis on manipulating numerical data sets. The Python modules like the NumPy, Pandas and Matplotlib modules will be introduced for handling large array objects and plotting. Applications-Actuarial Domain deals with Python in the domain of Actuaries.

Why Actuaries to master PYTHON language?

For over 20 years, Python has been used successfully throughout the world as a programming language in industry, in the service and financial sectors, and also in research and science to meet a wide range of different requirements. The Python programming language is easy to learn. It has blurred the boundaries between users and developers. Increasing numbers of scientists, engineers, financial experts and others with little programming experience are using Python to solve specific complex technical problems. At the time of Actuaries expanding their horizon to Data science and analytics, the Python makes a huge difference between those who “Know and do not Know”

Most of the employers looking for actuarial resources, irrespective of the class and category of employment prefers candidates who have knowledge of Python, R or SQL, hence the right time to become competent in the market.

II. PROGRAM SCHEDULE:

Webinars will start on 20th September, 2021 which will be spread over 34 days to be conducted in 16 sessions of 2 hours each duration. Participants are expected to work on their assignments on a regular basis to maintain the continuity of learning and practice. The program will include learning Basics of Python in 10 sessions along with 6 sessions of Applications of Python in Actuarial Domain

The program schedule is available in ANNEXURE-I

Recorded videos of all webinars will be made available in the member’s login page till 30th November, 2021. However, it is highly recommended to attend all LIVE sessions without fail for optimum benefit out of the program.
III. **REGISTRATION:**

- Registration fee: Rupees Six thousand (₹6,000.00) only (18% GST extra)
- Registration menu: Login to IAI >>> Class room coaching >>> Registration
- Registration opens: On 7th September, 2021 6.00PM.
- Registration closes: On 18th September, 2021 6.00PM.

IV. **FACULTY**

1. **Dr. B P Ajith Kumar**, M.Sc. & PhD (in nuclear physics) from University of Calicut and M.Sc. in Accelerator Physics, from University of Manitoba, is a retired scientist, Level H, from Inter University Accelerator Centre, New Delhi. He has been a regular invited speaker in various PyCon India (largest gathering of Pythonistas in India for Python programming language). He is also author of the book Python for Education published by Calicut University Press for Benefit of students.

2. **Mr. Ajay Shekhar** FIAI, is a fellow member of the Institute of Actuaries of India. He is currently Vice President at IDEAL Fastener & in-charge of India operations, where he uses python extensively to develop analytical frameworks in engineering, operations and for automated quality inspections using computer vision. Prior to IDEAL, he was with Ford Motor Company as a part of the Global Data Insights & Analytics team in US & India

V. **COVERAGES:**

1. Introduction to High level languages, Installation of Python Interpreter
2. Basic concepts like Variables, Data types and Operators
3. Control flow statements: conditional execution and iteration
4. Interactive Input, Formatted printing and File I/O
5. Functions, Modules and Packages: Importing Python modules
6. Classes and Objects, object oriented programming in Python
7. The NumPy module. Handling Array objects
8. Plotting with Matplotlib, data visualization.
10. Data manipulation using Pandas.
11. Deployment in Python: Template Reporting, Desktop Applications & Web Servers
12. Handling Structured & Unstructured Data
13. Web Scraping in Python with Beautiful Soup & Selenium
14. Operational Risk Modelling in Python
15. Markov Chain Modelling in Python

VI. **BENEFITS OF ATTENDING THE PROGRAM:**

- To enter the magic world of Python Language
- To adopt Python for all data, research and analytics in the office work
- To take the first step towards mastering the current and future language of data scientists, IT and Web developers
- To become a freelance trainer for Python
To interact with expert faculty
To gain new job opportunities in the areas of data analytics and data science
To gain unique skill in the current employment
To utilise the best services by highly subsidised fees.

VII. CONTACT:

Point of contact for all related queries: Mr. Ravindra Mastekar at: ravindra@actuariesindia.org or 022 62433348
## Program Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Program</th>
<th>Topic</th>
</tr>
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<tbody>
<tr>
<td>20th Sept</td>
<td>Monday</td>
<td>Basic</td>
<td>Introduction to High level languages, Installation of Python Interpreter</td>
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<tr>
<td>22nd Sept</td>
<td>Wednesday</td>
<td>Basic</td>
<td>Basic concepts like Variables, Data types and Operators</td>
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<tr>
<td>24th Sept</td>
<td>Friday</td>
<td>Basic</td>
<td>Control flow statements: conditional execution and iteration</td>
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<tr>
<td>27th Sept</td>
<td>Monday</td>
<td>Basic</td>
<td>Interactive Input, Formatted printing and File I/O</td>
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<tr>
<td>29th Sept</td>
<td>Wednesday</td>
<td>Basic</td>
<td>Functions, Modules and Packages: Importing Python modules</td>
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<tr>
<td>1st Oct</td>
<td>Friday</td>
<td>Basic</td>
<td>Classes and Objects, object oriented programming in Python</td>
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<tr>
<td>4th Oct</td>
<td>Monday</td>
<td>Basic</td>
<td>The NumPy module. Handling Array objects</td>
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<tr>
<td>6th Oct</td>
<td>Wednesday</td>
<td>Basic</td>
<td>Plotting with Matplotlib, data visualization.</td>
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<td>8th Oct</td>
<td>Friday</td>
<td>Basic</td>
<td>The Pandas Module.</td>
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<tr>
<td>11th Oct</td>
<td>Monday</td>
<td>Basic</td>
<td>Data manipulation using Pandas.</td>
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<tr>
<td>13th Oct</td>
<td>Wednesday</td>
<td>Applications in Actuarial Domain</td>
<td>Deployment in Python: Template Reporting, Desktop Applications &amp; Web Servers</td>
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<tr>
<td>15th Oct</td>
<td>Friday</td>
<td>Applications in Actuarial Domain</td>
<td>Handling Structured &amp; Unstructured Data</td>
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<tr>
<td>16th Oct</td>
<td>Saturday</td>
<td>Applications in Actuarial Domain</td>
<td>Web Scraping in Python with Beautiful Soup &amp; Selenium</td>
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<tr>
<td>17th Oct</td>
<td>Sunday</td>
<td>Applications in Actuarial Domain</td>
<td>Operational Risk Modelling in Python</td>
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<tr>
<td>22nd Oct</td>
<td>Friday</td>
<td>Applications in Actuarial Domain</td>
<td>Markov Chain Modelling in Python</td>
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<tr>
<td>23rd Oct</td>
<td>Saturday</td>
<td>Applications in Actuarial Domain</td>
<td>Defined Contribution Simulation for Optimal Retirement Planning</td>
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