SEMINAR REPORT

ON

BASICS OF PYTHON

CERTIFICATION DONE BY

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19K61A1201

INFORMATION TECHNOLOGY

UNDER THE GUIDANCE OF

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Department of Information Technology

CERTIFICATE

Name : . . . . . .
.

Academic Year: . . . . . Semester: . . . . . Branch: . . . .

Register No.

Certified that this is the report of work done by the above student in the Internship and seminar during the year 2022-2023.

Faculty In charge: **HOD**

Submitted for the Internship and seminar Examination held on . . . . . .
.

Internal Examiner **External Examiner**

DECLARATION

I hereby declare that the certification embodied in this dissertation entitled “Python Basics” was done by me during the year 2022-2023 for a seminar is to gain knowledge on the curriculum courses.

BY:

A.Harika

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1. ABSTRACT

Python is a popular programming language that is widely used in a variety of industries, including web development, data science, machine learning, and artificial intelligence. Python basics certification is designed to help individuals learn the fundamentals of the Python programming language, including syntax, data types, control structures, functions, and modules. This certification is ideal for beginners who are just starting to learn Python or for experienced programmers who want to brush up on their skills. By earning a Python basics certification, individuals can demonstrate their proficiency in this widely used programming language and improve their job prospects in a variety of fields.

2. INTRODUCTION

Python is a high-level, general-purpose programming language that is widely used in web development, data analysis, artificial intelligence, and machine learning. Python basics certification is a program that is designed to provide individuals with a foundational understanding of the Python programming language. This certification covers the basics of Python, such as syntax, data types, control structures, functions, and modules. By earning this certification, individuals can demonstrate their proficiency in Python and enhance their career prospects in a variety of fields. This certification is suitable for individuals who are new to programming and want to start their career as a Python developer or for experienced programmers who want to expand their skillset.

3. OBJECTIVES

The objectives of certification program may vary depending on the specific course and institution offering the certification. However, here are some general objectives of these certification programs:

Python Certification Objectives:

1. To provide a solid foundation in Python programming language, including syntax, data types, and control structures.
2. To equip candidates with the ability to write Python code for data analysis, scientific computing, and web development.
3. To provide an understanding of Python libraries and frameworks commonly used in data analysis, machine learning, and web development.
4. To ensure candidates can effectively debug and troubleshoot Python code.
5. To provide an understanding of best practices in Python programming, including code organization, testing, and documentation.
6. To provide a pathway for candidates to advance their career in Python programming language, such as further certifications or job opportunities.

4. PYTHON

4.1 Benefits of python Basics certification:

Enhance Employability: Obtaining the Python Basics Certification demonstrates to potential employers that an individual has foundational knowledge and skills in Python programming language. This certification can increase an individual's employability and open up job opportunities in various domains.

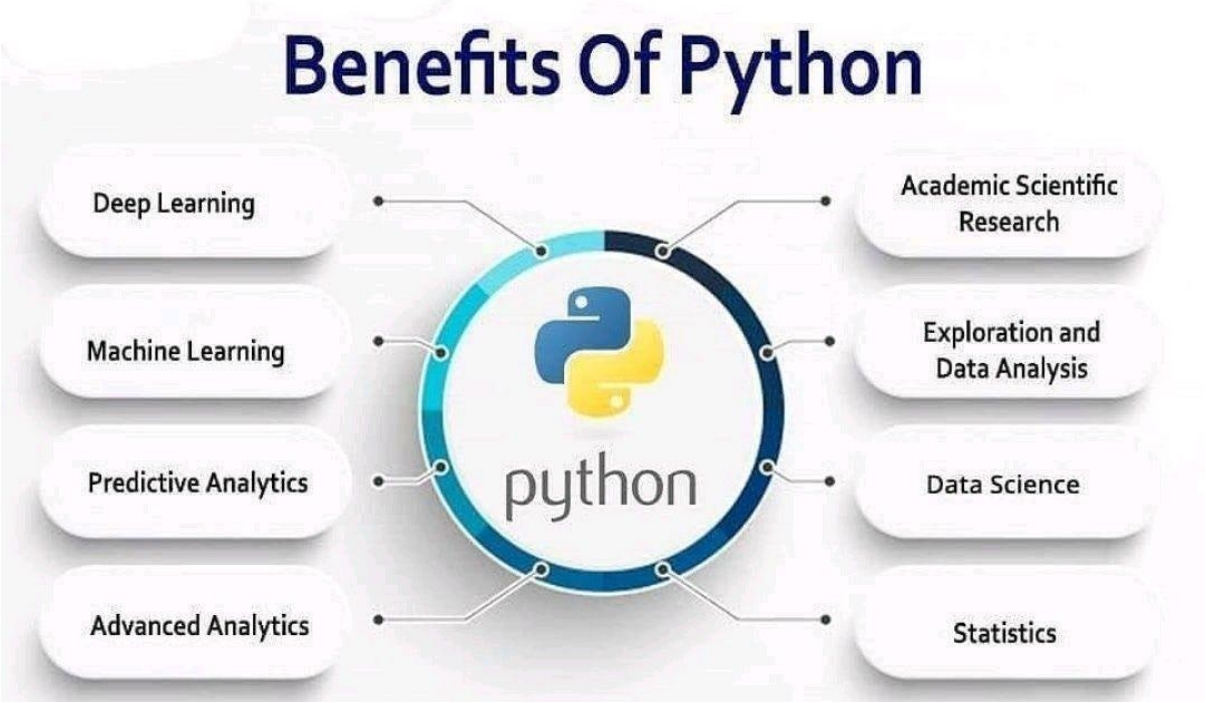
Gain a Competitive Edge: With the increasing demand for Python programming language in various domains, obtaining the Python Basics Certification can give an individual a competitive edge in the job market. This certification demonstrates that an individual is proficient in the basics of Python programming language.

Build a Strong Foundation: The Python Basics Certification program covers a range of topics related to Python programming language, including data types, control structures, functions, modules, and file handling. This certification program provides participants with a strong foundation in Python programming language, which is essential for building applications and solving problems using Python.

Boost Confidence: Obtaining the Python Basics Certification can boost an individual's confidence in their ability to program in Python. This certification program includes hands-on exercises and assessments that allow participants to practice their skills and demonstrate their proficiency in Python programming language.

Career Advancement: The Python Basics Certification can provide individuals with the opportunity to advance their careers in various domains such as web development, data analysis, and machine learning. This certification program provides participants with the foundational knowledge and skills needed to take on more advanced roles and responsibilities in their careers.

Learn from Industry Experts: The Python Basics Certification program offered by Infosys Spring Board is designed and delivered by industry experts who have extensive experience in Python programming language. Participants can learn from the experts and gain insights into best practices and techniques used in the industry.



4.2 Python basic certification topics:

Introduction to Python:

The certification program covers the basics of Python programming language, including data types, variables, and operators. Participants will learn how to set up their Python environment, write basic Python programs, and execute them. They will also learn how to use Python's interactive shell for quick testing and experimentation.

Control Structures: Participants will learn about control structures such as if-else statements, loops, and functions. They will learn how to write conditional statements to execute code based on specific conditions. Participants will also learn

how to use loops to execute a block of code repeatedly and how to define and use functions in Python programming language.

Data Structures: The certification program covers Python's built-in data structures such as lists, tuples, and dictionaries. Participants will learn how to create and manipulate lists, tuples, and dictionaries, and how to use them in Python programming language.

Functions: Participants will learn how to define and use functions in Python programming language. They will learn about function arguments, return values, and how to create and use lambda functions.

Modules: Participants will learn about modules and how to use them in Python programming language. They will learn how to import modules and how to create their own modules. Participants will also learn about Python's standard library and how to use it in their programs.

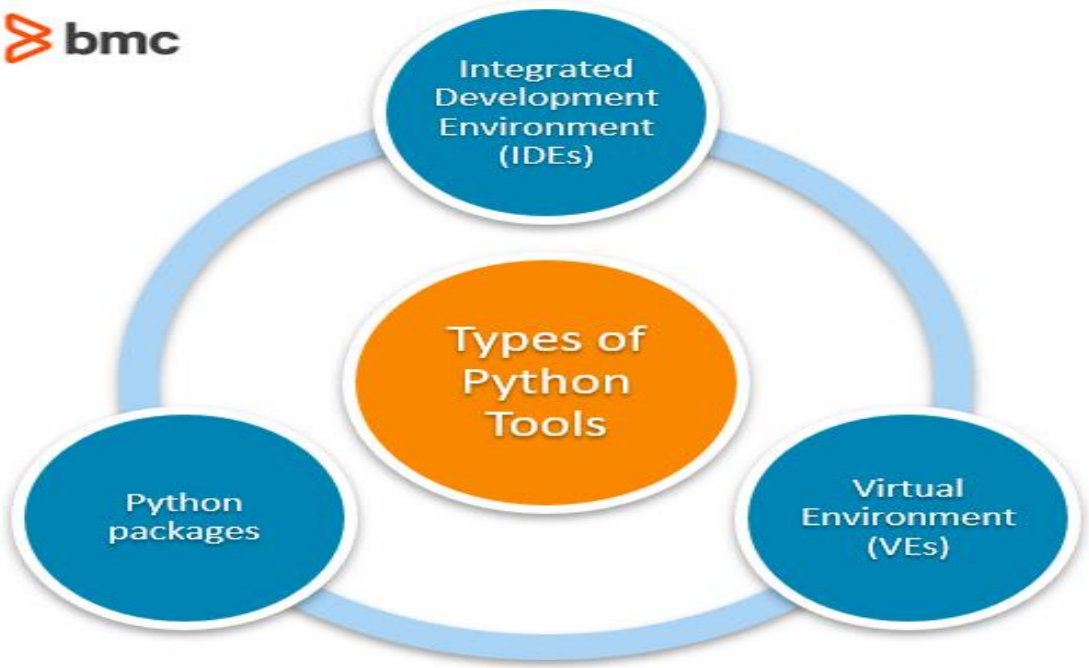
File Handling: Participants will learn how to read from and write to files in Python programming language. They will learn how to open and close files, how to read from files, and how to write to files. They will also learn how to handle exceptions related to file handling.

Exception Handling: The certification program covers exception handling in Python programming language. Participants will learn how to handle exceptions, raise exceptions, and define their own exceptions.

Object-Oriented Programming: Participants will learn about object-oriented programming (OOP) concepts such as classes, objects, and inheritance. They will learn how to define classes and objects, and how to use inheritance to create new classes.

Regular Expressions: Participants will learn about regular expressions and how to use them in Python programming language. They will learn how to create and use regular expressions to search, match, and replace text.

Debugging and Testing: The certification program covers debugging and testing Python code. Participants will learn how to debug their programs using Python's built-in debugger, and how to write and run automated tests using Python's unit test module.



4.3 Web Development of Python:

Introduction to Web Development with Python: An overview of web development with Python, including the use of popular Python web frameworks like Flask and Django.

Flask: An in-depth look at Flask, a popular and lightweight Python web framework that allows you to build web applications quickly and easily. You can explore the Flask architecture, routing, templates, and extensions.

Django: An in-depth look at Django, a popular and full-featured Python web framework that includes many built-in features, such as an ORM, admin interface, and authentication. You can explore the Django architecture, models, views, templates, and forms.

HTML, CSS, and JavaScript: An introduction to web development basics, including HTML for content structure, CSS for styling, and JavaScript for interactivity.

Web APIs: An overview of web APIs and how to build them with Python. You can explore the use of popular web API frameworks like Flask-RESTful and Django REST framework.

Database Integration: An overview of database integration with Python web frameworks. You can explore the use of popular databases like SQLite, PostgreSQL, and MySQL, and how to use them with Python web frameworks.

Deployment: An overview of web application deployment with Python. You can explore how to deploy a Python web application to a production server, including options like virtualization, containerization, and cloud-based deployment.

4.4 Python Automation:

Web Automation with Python: An introduction to web automation with Python, including the use of Selenium, a popular web automation library that allows you to automate web browsers like Chrome and Firefox.

GUI Automation with Python: An introduction to GUI automation with Python, including the use of PyAutoGUI, a popular GUI automation library that allows you to automate mouse and keyboard actions, and take screenshots.

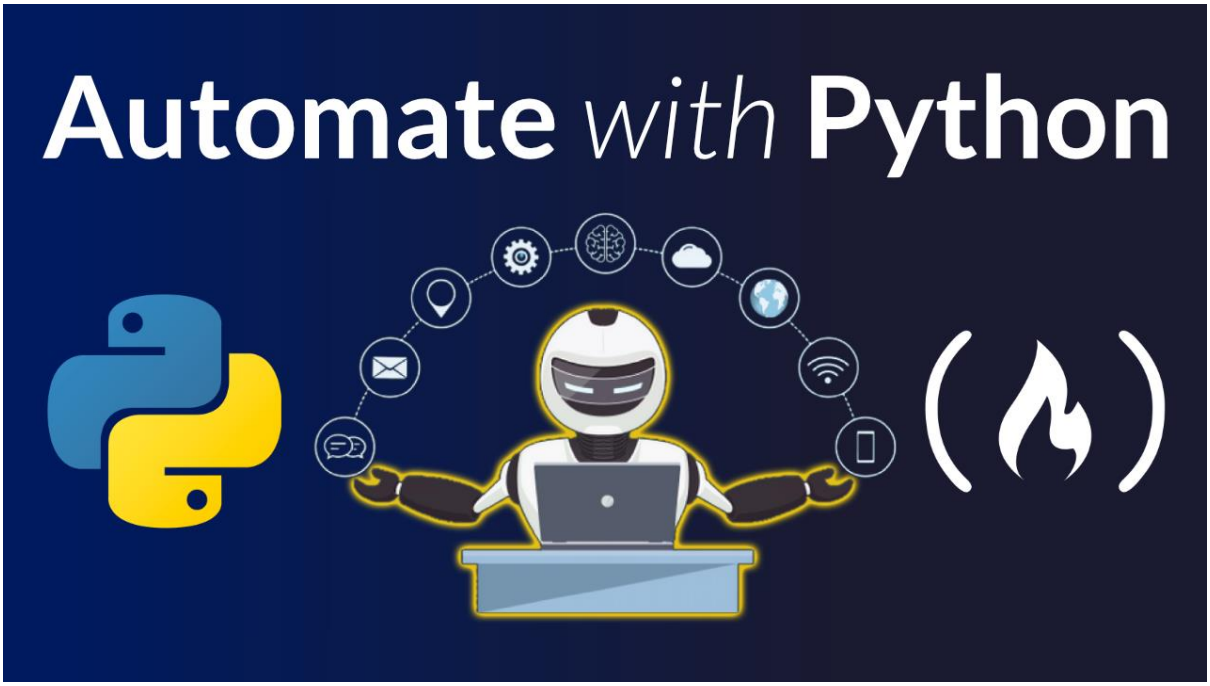
Windows Automation with Python: An introduction to Windows automation with Python, including the use of

PyWinAuto, a popular Windows automation library that allows you to automate desktop applications and control system settings.

File Handling and Manipulation: An overview of file handling and manipulation with Python, including the use of popular Python libraries like os, shutil, and glob. You can explore how to automate tasks like file renaming, copying, and deletion.

Text Processing and Web Scraping: An overview of text processing and web scraping with Python, including the use of popular Python libraries like BeautifulSoup and requests. You can explore how to automate tasks like data extraction, parsing, and transformation.

Automation Best Practices: An overview of automation best practices with Python, including how to write maintainable and scalable automation scripts, error handling, logging, and testing.



4.5 Python basics certification process:

The Python Basics Certification program offered by Infosys Spring Board is designed to help participants gain a strong foundation in Python programming language. The certification program consists of self-paced learning modules, hands-on projects, and assessments to test participants' knowledge and understanding of Python programming language.

Self-paced Learning Modules: The certification program starts with self-paced learning modules that cover the basics of Python programming language. Participants can access the modules online and learn at their own pace. The modules include video lectures, reading materials, and interactive exercises to help participants understand the concepts covered in the program.

Hands-on Projects: The certification program includes hands-on projects that help participants apply their knowledge and skills in real-world scenarios. The projects are designed to simulate real-world problems and provide participants with the opportunity to solve them using Python programming language. Participants will receive feedback on their projects from instructors and peers.

Assessments: The certification program includes assessments to test participants' knowledge and understanding of Python programming language. The assessments include quizzes and assignments that cover the topics covered in the program. Participants will receive feedback on their assessments from instructors and peers.

Certification Exam: The certification program culminates in a certification exam that tests participants' knowledge and understanding of Python programming language. The exam includes multiple-choice questions and coding challenges that cover the topics covered in the program. Participants who pass the exam will receive a Python Basics Certification from Infosys Spring Board.

5. CONCLUSION

Python Basics Certification, on the other hand, provides a solid foundation in Python programming language, including syntax, data types, and control structures. It equips candidates with the ability to write Python code for data analysis, scientific computing, and web development. The certification also provides an understanding of Python libraries and frameworks commonly used in data analysis, machine learning, and web development.

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COURSE COMPLETION CERTIFICATE

The certificate is awarded to

Harika Adapareddy

for successfully completing the course

Basics of Python

on Thursday, March 16th 2023

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Congratulations! You make us proud!

Thirumala Arohi
Senior Vice President and Head
Education, Training and Assessment (ETA)
Infosys Limited

Issued on: Thursday, March 16th 2023
This certificate can be verified by scanning the QR code at https://verify.onwingspan.com