



Mangalmai Institute of Management Technology
Greater Noida (U.P.)



MANGALMAI
INSTITUTE OF MANAGEMENT TECHNOLOGY

Greater Noida



ADD ON
CERTIFICATION PROGRAM
on

Data Analysis & Interpretation through Python

BBA 2nd Year students

Date: 2nd April, 2024 to 26th April, 2024

Time: 2:00 PM - 4:00 PM | Venue: Computer Lab, B Block

Coordinator:

Ms. Anuradha Yadav



Resource Person

Dr. Pankaj Kumar

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Plot No. 8 & 9, Knowledge Park-II, Greater Noida, Delhi-NCR, India



Mangalmai Institute of Management Technology
Greater Noida (U.P.)



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Date: 15th Mar, 2024

NOTICE

All the students of BBA II Year are hereby informed that MIMT is organizing Add-on Certification Course on 'Data Analysis and Interpretation through Python'. Python is a versatile and widely used programming language that can be highly beneficial for the corporate sector. the details of the same are given below:

Program Details: -

Date: 2nd Apr - 26th Apr '24

Time: 2:00 PM - 4:00 PM

Venue: Computer Lab, MIMT

Beneficiaries: BBA II Year

Resource Person: Dr. Pankaj Kumar

Participation: Participants can give their names to the coordinators by 28th March 2024.

Activity Coordinator: Ms. Anuradha Yadav

Associate Dean,
MIMT

CC to:

Principal, MIMT

IQAC, MIMT

HODs/Coordinators

Faculty Members

Notice Board

Office File



SYLLABUS

(32 Hours)

Module	Course Contents
Module 1	Overview of Python and its popularity Advantages of using Python Readability and simplicity Versatility and flexibility Strong community support Extensive libraries and frameworks
Module 2	Applications of Python Real-world applications of Python Scientific computing Automation and scripting
Module 3	Python and its Features Object-oriented programming Interpreted language High-level programming Dynamic Semantics Built-in data structures Automatic garbage collection
Module 4	Python Built-in Data Types Boolean Text (String) Numeric (Integer, Float) List, Tuple, Dictionary, Set,
Module 5	Python operators Arithmetic operators Comparison operators Logical operators



Module 6	Understanding Python packages and modules Overview of essential packages NumPy for numerical computing Pandas for data manipulation and analysis Scikit-Learn for machine learning Matplotlib and Seaborn for data visualization
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SCHEDULE

Session	Content	Time	Date
S1	Introduction to Python Overview of Python and its popularity Advantages of using Python	2:00 PM-4:00 PM	02-Apr-2024
S2	Python Features Readability and simplicity Versatility and flexibility	2:00 PM-4:00 PM	03-Apr-2024
S3	Python Community Strong community support Extensive libraries and frameworks	2:00 PM-4:00 PM	04-Apr-2024
S4	Real-world Applications Applications of Python Scientific computing	2:00 PM-4:00 PM	05-Apr-2024



S5	Automation and Scripting Real-world applications of Python Automation and scripting	2:00 PM-4:00 PM	08-Apr-2024
S6	Understanding Python's Programming Paradigm Object-oriented programming Interpreted language	2:00 PM-4:00 PM	09-Apr-2024
S7	High-level Programming Dynamic semantics Built-in data structures	2:00 PM-4:00 PM	10-Apr-2024
S8	Memory Management in Python Automatic garbage collection	2:00 PM-4:00 PM	11-Apr-2024
S9	Python Built-in Data Types Boolean Text (String)	2:00 PM-4:00 PM	12-Apr-2024
S10	Numeric Data Types Numeric (Integer, Float)	2:00 PM-4:00 PM	15-Apr-2024



S11	Sequence Data Types List, Tuple, Dictionary, Set	2:00 PM-4:00 PM	19-Apr-2024
S12	Python Operators Overview Arithmetic operators Comparison operators	2:00 PM-4:00 PM	22-Apr-2024
S13	Logical and Bitwise Operators Logical operators	2:00 PM-4:00 PM	23-Apr-2024
S14	Python Operators in Depth Understanding Python operators	2:00 PM-4:00 PM	24-Apr-2024
S15	Introduction to Python Packages and Modules Overview of essential packages	2:00 PM-4:00 PM	25-Apr-2024
S16	Essential Python Libraries NumPy for numerical computing Pandas for data manipulation and analysis Scikit-Learn for machine learning Matplotlib and Seaborn for data visualization	2:00 PM-4:00 PM	26-Apr-2024



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	Assessment	2:00-3:00 PM	30-Apr-2024
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REPORT	
Name of Activity	Add on Certificate Course on Data Analysis and Interpretation through Python
Date	2 nd Apr – 26 th Apr '24
Venue	Computer Lab, MIMT
Organized by	Management Department
Participation by	BBA II Year students
No. of Participants	87
Resource Person	Dr. Pankaj Kumar
Activity Convener	Ms. Anuradha Yadav
Objective	<p>The objectives of the add-on course are:</p> <ul style="list-style-type: none">● Develop proficiency in Python programming tailored for data analysis tasks.● Master data manipulation and cleaning techniques using Pandas.● Explore data analysis methods including visualization and summary statistics.● Introduce machine learning basics with Scikit-Learn for predictive analysis.● Apply acquired skills to real-world projects for actionable insights and interpretation
Content	<p>Python stands out as a powerful solution for handling and analyzing diverse datasets, earning recognition for its expanding utility across various management domains. This innovative tool offers multiple avenues to streamline tasks and enhance the complexity of data analysis and reporting.</p>



Under the guidance of the IQAC at Mangalmai Institute of Management and Technology, a Certificate Course was introduced targeting undergraduate students. The program spanned over 32 hours, with daily sessions of two hours each, dedicated to theory and practical learning.

The add-on course delved into a range of topics, including:

Day 1: Introduction to Python - Students were introduced to Python, a widely acclaimed programming language renowned for its simplicity and versatility. They explored its popularity, driven by its intuitive syntax and extensive community support. Python's advantages were elucidated, including its readability, scalability, and vast ecosystem of libraries. Through hands-on exercises, learners grasped Python's utility in various domains, from web development to artificial intelligence. They delved into past projects, where Python's flexibility enabled them to solve complex problems efficiently. As they honed their skills, students appreciated Python's role in shaping modern technology landscapes, equipping them with invaluable programming prowess for future endeavors.

Day 2: Python Features - Python, renowned for its readability and simplicity, offers students a platform to grasp coding concepts effortlessly. Its versatility and flexibility empower learners to tackle diverse tasks, from web development to data analysis. Students accustomed themselves to writing Python code in the past tense, honing their skills through projects and exercises. They embraced its syntax, mastering loops, conditionals, and functions. Debugging became second nature as they navigated errors with precision. Through Python, students not only learned programming principles but also cultivated problem-solving aptitude, laying a solid foundation for their journey into the realm of technology.

Day 3: Python Community - An enlightening session was delivered as a part of an add-on certification course titled "Data Analysis and Interpretation through Python," focusing on the pivotal role of Python's community and its extensive libraries and frameworks. The session began by highlighting the robust support provided by the Python community, which is instrumental in fostering an environment where both beginners and experts can thrive. This community-driven support manifests in numerous forums, tutorials, and documentation, ensuring that users can readily find help and resources. The session underscored the significance of this support in accelerating the learning curve and resolving issues swiftly, thus enhancing productivity and innovation. The Python tools streamline complex data manipulation, statistical analysis, and visualization tasks, making Python an indispensable tool for data analysts. Practical demonstrations showcased the ease of loading, cleaning, transforming,



and visualizing data, cementing the participants' understanding of Python's practical utility.

Day 4: Real-world Applications - A compelling session was held as part of the add-on certification course "Data Analysis and Interpretation through Python," focusing on Python's real-world applications and its pivotal role in scientific computing. The resource person highlighted how Python's versatility makes it a preferred language for web development, automation, machine learning, and, notably, data analysis. Emphasis was placed on Python's impact in scientific computing. The Python libraries provide powerful tools for numerical calculations, data manipulation, and visualization, enabling scientists and researchers to perform complex computations and analyze large datasets efficiently. The session featured practical demonstrations of these libraries in action, showcasing how Python can be used to solve real-world problems. Examples included data visualization techniques for presenting scientific data clearly and effectively, as well as using Pandas for data cleaning and preparation. Furthermore, the resource person explored Python's integration with other scientific computing tools and languages, enhancing its utility in interdisciplinary research. The session underscored Python's utility in automating tedious tasks, allowing researchers to focus on innovation and analysis. The resource person also touched on the importance of the Python community in advancing scientific research, with numerous open-source contributions and collaborative projects that continually enhance Python's capabilities.

Day 5: Automation and Scripting - The session on data analysis and interpretation through Python offered valuable insights into the real-world applications of this versatile language. Python's capabilities in automation are profound, streamlining repetitive tasks and increasing efficiency. During the session, participants learned how Python can automate data collection, cleaning, and transformation processes, thereby reducing manual errors and accelerating decision-making. Scripting with Python was another focal point of the session. Python's concise syntax and extensive libraries make it ideal for writing scripts to perform specific functions. Participants explored how scripting can be utilized to automate routine operations such as data extraction from multiple sources, generating reports, and performing statistical analyses. Furthermore, the session delved into real-world applications of Python automation and scripting across industries. From finance to healthcare, participants discovered how Python is revolutionizing processes by automating mundane tasks, enabling professionals to focus on high-value activities. Moreover, the session emphasized the importance of continuous learning and upskilling in Python to stay relevant in today's competitive landscape. In conclusion, the session on data analysis and interpretation through Python underscored the



transformative potential of automation and scripting in enhancing efficiency and driving innovation.

Day 6: Understanding Python's Programming Paradigm -

Learners grasped the fundamentals of Python's object-oriented design and its status as an interpreted language, shaping their approach to coding. It provided an in-depth exploration of Python's programming paradigm and its status as an interpreted language. Throughout the meticulously crafted curriculum, participants delved into the intricacies of object-oriented programming (OOP), mastering key concepts such as encapsulation, inheritance, and polymorphism. Simultaneously, they gained a profound understanding of Python's interpreted nature, unraveling its execution model and its implications for code performance. By combining theoretical foundations with hands-on coding exercises, the course facilitated the development of robust software solutions and optimization techniques within Python's interpreted environment. Graduates emerged with significantly enhanced Python proficiency, poised to excel in various professional roles, including software development, data science, and web applications, armed with a nuanced understanding of Python's distinctive programming paradigm.

Day 7: High-level Programming - The participants delved into Python's dynamic semantics and built-in data structures, empowering them to manipulate data effectively in high-level programming contexts. It covered a comprehensive range of topics designed to enhance participants' proficiency in modern programming practices. Participants engaged in hands-on exercises that illustrated how dynamic semantics influence program execution and error handling, providing them with a deeper understanding of language design and performance implications. Additionally, the course explored built-in data structures, emphasizing their importance and utility in inefficient coding practices. Learners examined arrays, lists, dictionaries, sets, and other fundamental structures, analyzing their characteristics, use cases, and performance trade-offs. Through practical coding sessions, attendees implemented and manipulated these data structures to solve real-world problems, thereby solidifying their grasp of both theoretical concepts and practical applications. Throughout the course, participants collaborated on projects that required the integration of dynamic semantics and built-in data structures, fostering a collaborative learning environment and enhancing their problem-solving skills. The session proved invaluable for those looking to advance their careers in software development, offering both foundational knowledge and advanced insights necessary for tackling complex programming challenges.

Day 8: Memory Management in Python -



This session provided an in-depth exploration of how Python handles memory allocation and deallocation, with a particular emphasis on automatic garbage collection. Participants gained a thorough understanding of Python's memory model, learning how the interpreter allocates memory for objects and how reference counting is used to track object usage. This knowledge equipped participants with the skills necessary to write efficient, robust Python applications, capable of handling large datasets and complex computational tasks without succumbing to memory-related issues. It proved to be an essential resource for developers aiming to deepen their expertise in Python and improve the reliability and efficiency of their codebases.

Day 9: Python Built-in Data Types - Understanding boolean and string data types, learners gained foundational knowledge crucial for logical operations and text processing. It provided a comprehensive exploration of fundamental data structures essential for effective programming. Participants delved into Boolean and text (string) data types, gaining a deep understanding of their characteristics, usage, and manipulation within Python. Moving to strings, participants learned about Python's versatile string data type, which represents sequences of characters and supports various operations such as concatenation, slicing, and formatting. They explored techniques for string manipulation, including methods for searching, replacing, and modifying text efficiently. The session also covered string formatting techniques, highlighting both traditional formatting options. Throughout the program, participants engaged in hands-on exercises and projects that applied Boolean and string data types to solve real-world problems, reinforcing their understanding through practical application. By the conclusion of the course, participants had developed a solid foundation in utilizing Boolean and string data types effectively in Python, equipping them with essential skills for developing robust applications and algorithms capable of handling diverse data processing tasks efficiently.

Day 10: Numeric Data Types - Learners explored integer and float data types, essential for numerical computations and mathematical operations in Python. Participants gained a thorough understanding of how Python handles these numeric data types, including their storage, manipulation, and practical applications. The course began with an in-depth look at integers, discussing their representation in binary, arithmetic operations, and the significance of Python's ability to handle arbitrarily large integers. Through practical exercises, participants learned how to perform efficient mathematical computations, implement algorithms, and utilize built-in functions for numeric operations. The curriculum then transitioned to floating-point numbers, addressing their representation, precision limitations, and common pitfalls such as rounding errors. Throughout the course, participants engaged in real-world projects that integrated integer and



float operations, reinforcing their knowledge through practical application. By the end of the course, attendees had developed a comprehensive understanding of Python's numeric data types, equipped with the skills to perform complex calculations, optimize numeric algorithms, and handle various data processing tasks efficiently. This course proved invaluable for anyone looking to deepen their expertise in Python, particularly in fields requiring robust numerical computation such as data science, engineering, and finance.

Day 11: Sequence Data Types - This session introduced lists, tuples, dictionaries, and sets, providing versatile data structures for organizing and manipulating data efficiently. Tuples, enclosed in parentheses, offered immutable, ordered collections, ensuring data integrity by preventing any changes post-creation. This immutability made tuples ideal for fixed data sets and as keys in dictionaries. Dictionaries, identified by curly braces and key-value pairs, provided an efficient means to store and retrieve data using unique keys, supporting rapid lookups, updates, and deletions with methods like `get()`, `pop()`, and `items()`. Unlike lists and tuples, dictionaries focused on mapping relationships rather than ordering. Sets, also defined by curly braces but with unique, unordered elements, enabled efficient membership testing and operations like unions, intersections, and differences, crucial for tasks involving distinct data elements. These data types collectively enhanced Python's flexibility and efficiency in data handling, each serving specific purposes based on the required mutability, order, and uniqueness constraints. Their integration into Python's core facilitated diverse applications, from simple data storage and retrieval to complex data manipulation and analysis tasks, underscoring Python's versatility as a programming language.

Day 12: Python Operators Overview - Participants of the add-on course on Python programming were introduced to the core concepts of arithmetic and comparison operators, essential for performing calculations and logical evaluations. Arithmetic operators, including addition (+), subtraction (-), multiplication (*), division (/), floor division (//), modulus (%), and exponentiation (**), were covered in detail. For example, The participants learned how the modulus operator (%) was used to find remainders, while the floor division (//) operator provided integer division results. The course also delved into comparison operators, such as equal to (==), not equal to (!=), greater than (>), less than (<), greater than or equal to (>=), and less than or equal to (<=). These operators were crucial for making logical comparisons between values and returning. The comprehensive coverage of arithmetic and comparison operators significantly enhanced the participants' ability to handle and manipulate data effectively. By the end of the course, they were equipped with the foundational skills necessary for performing a broad spectrum of computational tasks and logical assessments, thereby reinforcing their



understanding of Python's capabilities in both everyday programming and more specialized applications.

Day 13: Logical and Bitwise Operators - Participants were thoroughly introduced to the concepts of logical and bitwise operators, which are essential for performing logical operations and manipulating individual bits within binary representations. The course covered logical operators, including and, or, and not, which were crucial for constructing complex conditional statements. These operators allowed the combination of multiple Boolean expressions, enabling the evaluation of overall truth values based on the conditions provided. Additionally, the course delved into bitwise operators, such as AND (&), OR (|), XOR (^), NOT (~), left shift (<<), and right shift (>>). These operators were used to perform bit-level operations on binary numbers, enabling efficient manipulation of individual bits. For example, the bitwise AND operator compared each bit of two integers and returned a new integer where the corresponding bits were set to 1 only if both bits were 1. By the end of the course, participants had gained a solid understanding of how to use logical and bitwise operators to perform a variety of logical and bit-level operations, significantly enhancing their programming skills and problem-solving capabilities in Python.

Day 14: Python Operators in Depth- The session on Python operators, part of an add-on certification course, delved deeply into the intricacies and applications of various operators within the Python programming language. The session began with an overview of basic arithmetic operators such as addition, subtraction, multiplication, and division, emphasizing their fundamental roles in computational tasks. The resource person highlighted the significance of comparison operators, which facilitate value comparisons and are crucial in conditional statements. Logical operators were discussed next, explaining their function in combining multiple conditional statements to produce Boolean outcomes. Assignment operators were thoroughly examined, demonstrating their ability to simplify code through compound expressions. Additionally, the session addressed identity and membership operators, which help in comparing objects and checking membership within data structures, respectively. Throughout the session, numerous code snippets and real-world scenarios were presented to solidify the understanding of these operators. The instructor also provided insights into operator precedence and associativity, which are critical in determining the order of operations in complex expressions. Overall, the session offered a comprehensive exploration of Python operators, equipping participants with a deeper understanding and practical knowledge necessary for proficient programming in Python.



Day 15: Introduction to Python Packages and Modules- The session on "Introduction to Python Packages and Modules," part of an add-on certification course, provided an in-depth overview of essential Python packages and their utilities. The resource person began by clarifying the distinction between modules and packages, noting that modules are individual Python files while packages are collections of modules within directories. The importance of these constructs for promoting code reusability and organization was emphasized. Participants were introduced to key standard library modules such as os, sys, math, and datetime, with practical examples demonstrating their use cases. Additionally, the session covered widely used third-party packages, including NumPy for numerical operations, pandas for data manipulation, and matplotlib for data visualization. The session featured hands-on demonstrations of installing packages using pip and managing project dependencies with virtual environments. Furthermore, the process of creating custom modules and packages was explained, along with best practices for documentation and organization. By the end of the session, participants had acquired a comprehensive understanding of how to effectively utilize Python packages and modules to streamline their programming tasks and improve project structure.

Day 16: Essential Python Libraries - The session on "Essential Python Libraries" in the add-on certification course provided a comprehensive overview of key libraries critical for various aspects of Python programming. The resource person began by introducing NumPy, emphasizing its capabilities for numerical computing, particularly its powerful array of objects and functions for mathematical operations. Following this, pandas were discussed, with a focus on their data manipulation and analysis features, including DataFrames, which offer efficient ways to handle and analyze structured data. The session then transitioned to Scikit-Learn, a library for machine learning, showcasing its robust tools for model selection, training, and evaluation, along with practical examples of implementing classification and regression models. For data visualization, Matplotlib and Seaborn were highlighted. Matplotlib was presented as a versatile tool for creating a wide range of static, animated, and interactive plots, while Seaborn was noted for its high-level interface and aesthetically pleasing statistical graphics. The session included hands-on demonstrations, showing how to utilize these libraries effectively in real-world scenarios. By the end of the session, participants had a solid understanding of these essential Python libraries, enabling them to perform complex numerical computations, manipulate and analyze data, implement machine learning models, and create insightful visualizations.



Assessment	At the end of the Data Analysis and Interpretation through Python course, an assessment test was conducted on 30th April 2024 to assess the understanding level of the students.
Outcome of Activity	<p>Upon completion of the course, students experienced a multitude of advantages. They seamlessly automated computations within spreadsheet cells, sparing themselves the manual labor. Python proved instrumental in streamlining their computational processes, enabling them to focus on analysis rather than mundane tasks.</p> <p>By leveraging Python's capabilities, students could integrate conditional statements directly into their data sets, facilitating nuanced decision-making. The flexibility of Python accommodated vast amounts of data across numerous columns and rows, empowering students to delve into extensive data analytics with ease.</p> <p>The outcome of the activity:</p> <ul style="list-style-type: none">● Mastery of Python for seamless automation and analysis of complex datasets.● Enhanced decision-making through coding conditional statements for data interpretation.● Proficiency in handling large-scale data analytics tasks efficiently.● Comprehensive understanding of both basic and advanced Python concepts with practical applications.● Certification validating theoretical knowledge and practical skills in data analysis using Python. <p>Through rigorous training in Python for data analysis and interpretation, students gained proficiency in both fundamental and advanced Python concepts, bolstered by practical applications. Their comprehension was evaluated through a combination of theoretical assessments and hands-on tasks, culminating in the issuance of certificates upon successful program completion.</p>



PROFILE OF THE RESOURCE PERSON

Dr. Pankaj Kumar

Profile:

Dr. Pankaj Kumar is an experienced professional with a strong educational background in business administration, complemented by a deep expertise in data analysis and interpretation through Python programming. With an MBA from Central University of Rajasthan, Dr. Kumar brings a solid foundation in business management principles and advanced data analytics skills.



Expertise:

As a freelance trainer, Dr. Kumar imparts training on data analysis and interpretation using Python to various organizations. He has a wealth of experience working with corporate sectors, catering to their specific requirements and challenges. Dr. Kumar's expertise lies in conducting hands-on practical sessions tailored to the needs of different industries, ensuring that participants gain actionable insights and skills applicable to their work environment.

Experience:

Dr. Pankaj Kumar has collaborated with numerous organizations across diverse sectors, including finance, healthcare, technology, and manufacturing. His training sessions are renowned for their practical approach, enabling participants to grasp complex concepts effectively and apply them in real-world scenarios. Dr. Kumar's extensive experience in the corporate sector has equipped him with insights into industry best practices and emerging trends in data analysis and Python programming.

With a passion for teaching and a commitment to excellence, Dr. Kumar adopts a hands-on approach to training, allowing participants to actively engage with the material and gain practical experience. His training sessions are structured to blend theoretical concepts with interactive exercises and case studies, fostering a dynamic learning environment conducive to skill development and knowledge retention.

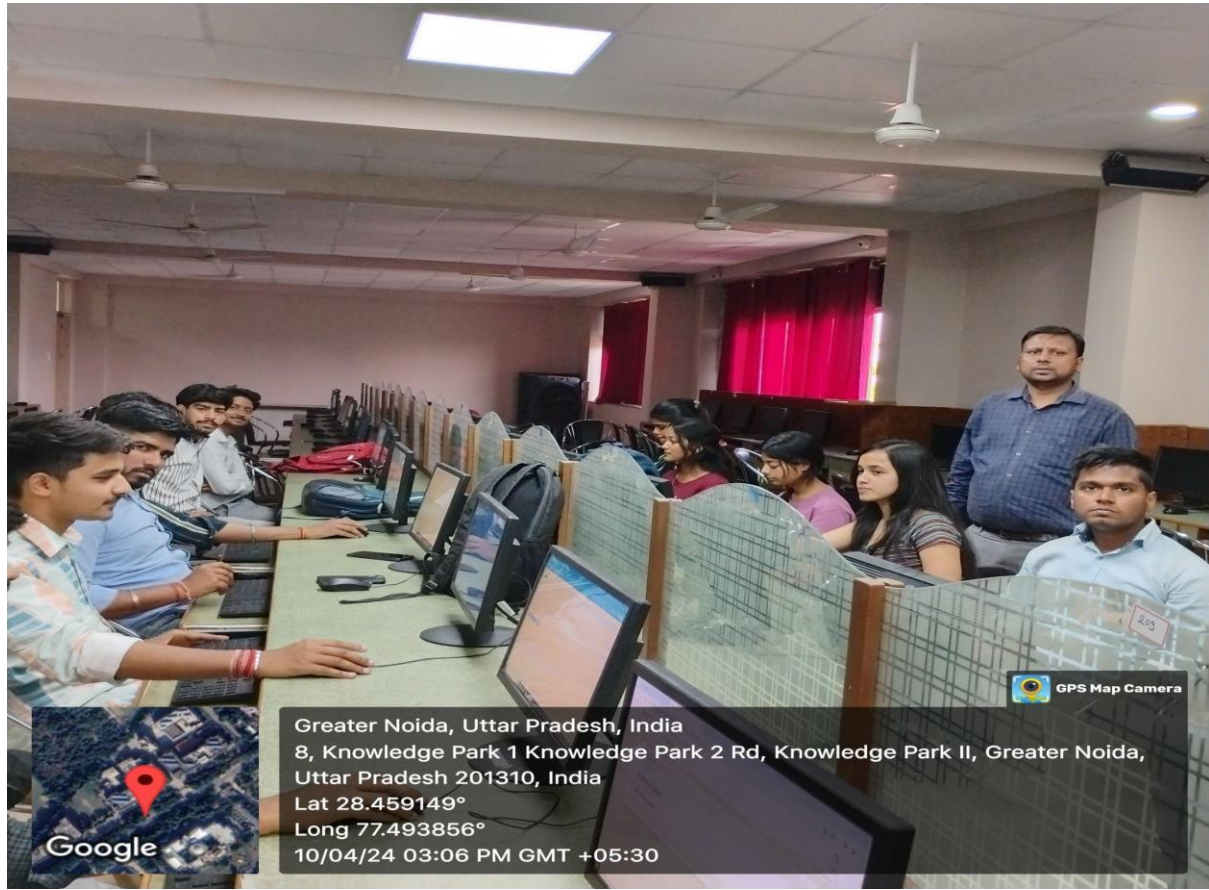
Achievements:

Throughout his career, Dr. Pankaj Kumar has received accolades for his impactful training programs and contributions to the field of data analysis. He is highly regarded for his ability to demystify complex concepts, empower participants with valuable skills, and drive tangible results for organizations. Dr. Kumar's dedication to continuous learning and professional development ensures that his training methodologies remain innovative and relevant in today's rapidly evolving business landscape.



As a seasoned freelance trainer specializing in data analysis and interpretation through Python, Dr. Pankaj Kumar brings a unique blend of academic rigor, practical expertise, and industry insights to his training programs. His collaborative approach, coupled with a passion for empowering professionals with valuable skills, makes him a sought-after resource for organizations looking to enhance their data analytics capabilities and drive business success.

GLIMPSES OF THE COURSE



Dr. Pankaj Kumar delivering the session



Students working on Python in the computer lab



Hands on training session in Python in the computer lab



Students practising on Python



Sample Certificate



Mangalmay Institute of Management Technology
Greater Noida (U.P.)



CERTIFICATE OF PARTICIPATION

It is to certify that **Mr. Kunal Kumar** of **BBA 2nd year** has successfully completed **32 hours** add-on certification course on **"Data Analysis & Interpretation through Python"** from **02/04/2024** to **26/04/2024** organized by Mangalmay Institute of Management & Technology, Greater Noida.

VICE CHAIRMAN
Mangalmay Group of
Institutions

IQAC Coordinator
Mangalmay Institute of
Management & Technology

PRINCIPAL
Mangalmay Institute of
Management & Technology



Date: 20 April 2024

Duration: 1 hour

M.M.: 40

General Instructions:

Mention your name and enrolment no. clearly.

Each of the questions is followed by 4 options. Select the best most appropriate one and tick in the appropriate box.

Name: K. S. Kumar Enrolment No. _____

Student's Sign: [Signature]

Invigilator's

Sign: [Signature]

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40

Attempt all the questions. Each question carries 2 marks.

- Which of the following is NOT a Python numeric data type?
a) Integer
b) Float
c) Complex
 d) List
- Which of the following is a correct statement about Python's memory management?
a) Python requires manual memory allocation and deallocation
 b) Python uses automatic garbage collection for memory management
c) Python allows direct manipulation of memory addresses
d) Python does not manage memory at all
- What is the purpose of a Tuple in Python?
 a) To store elements in an ordered sequence
b) To store key-value pairs
c) To store unique elements
d) To store elements in an unordered sequence
- What makes Python a popular programming language?
a) Complexity
 b) Readability and simplicity
c) Limited community support
d) Lack of versatility
- Python's versatility and flexibility make it suitable for which type of programming tasks?
a) Limited range of tasks
 b) Specialized tasks only
c) A wide range of tasks
d) None of the above
- What is a significant advantage of Python's strong community support?
a) Limited resources and help available
b) Reduced collaboration opportunities
 c) Extensive resources and help available
d) None of the above
- Which of the following is NOT a real-world application of Python?
a) Scientific computing



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- b) Automation and ~~Greater~~ Noida (U.P.)
c) Gaming development
~~d) Data analysis~~
8. Which programming paradigm does Python support?
a) Only procedural programming
b) Only functional programming
c) Only object-oriented programming
~~d) Both object-oriented and procedural programming~~
9. What type of language is Python?
a) Compiled language
~~b) Interpreted language~~
c) Hybrid language
d) None of the above
10. Python's dynamic semantics allow for what feature?
a) Static typing
~~b) Automatic garbage collection~~
c) Explicit memory management
d) None of the above
11. Which of the following is NOT a built-in data type in Python?
a) Boolean
b) Text (String)
~~c) Array~~
d) Numeric (Integer, Float)
12. Which of the following is a sequence data type in Python?
a) Integer
~~b) List~~
c) Dictionary
d) Boolean
13. What does Python use for memory management?
a) Explicit memory management
~~b) Manual garbage collection~~
~~c) Automatic garbage collection~~
d) None of the above
14. Which package is commonly used for numerical computing in Python?
a) TensorFlow
~~b) NumPy~~
c) Scikit-Learn
d) Pandas
15. What is Pandas primarily used for?
a) Data visualization
~~b) Data manipulation and analysis~~
c) Machine learning
d) Numerical computing
16. Which library is commonly used for data visualization in Python?
a) NumPy
b) Pandas
~~c) Matplotlib~~
d) Scikit-Learn



17. What does the NumPy library do?
- a) Data manipulation and analysis
 - b) Numerical computing
 - c) Machine learning algorithms
 - d) Data visualization
18. What does the 'import' statement in Python allow you to do?
- a) Create variables
 - b) Define functions
 - c) Import packages and modules
 - d) Perform mathematical operations
19. Which of the following is NOT an operator in Python?
- a) Arithmetic operators
 - b) Comparison operators
 - c) Data manipulation operators
 - d) Logical and Bitwise Operators
20. What is the purpose of the 'set' data type in Python?
- a) To store unique elements
 - b) To store ordered elements
 - c) To store key-value pairs
 - d) To store elements in a sequence



List of beneficiaries for Add on - Certification Course on Data Analysis and Interpretation through Python

BBA 2nd Year

Sr. NO.	Roll NO.	NAME OF THE PARTICIPANT	Remarks
1	220992105001	AASTHA BHAGAT	REGISTERED
2	220992105002	AASTHA RATHOUR	REGISTERED
3	220992105007	ABHISHEK BISHT	REGISTERED
4	220992105014	ADARSH SHARMA	REGISTERED
5	220992105015	ADARSH YADAV	REGISTERED
6	220992105017	ADITI KUMARI	REGISTERED
7	220992105019	ADITI PURWAR	REGISTERED
8	220992105022	ADITYA GODIYAL	REGISTERED
9	220992105026	ADITYA RANA	REGISTERED
10	220992105052	AMAN BHATI	REGISTERED
11	220992105057	AMAN TYAGI	REGISTERED
12	220992105058	AMISH KUMAR MISHRA	REGISTERED
13	220992105060	AMIT PANDEY	REGISTERED
14	220992105061	ANAMIKA KUMARI	REGISTERED
15	220992105066	ANJALI	REGISTERED
16	220992105070	ANKIT KUMAR	REGISTERED
17	220992105079	ANMOL KUMAR	REGISTERED
18	220992105080	ANMOL MITTAL	REGISTERED
19	220992105082	ANSHU GOYAL	REGISTERED



20	220992105085	ANSHUL RAJ	REGISTERED
21	220992105087	ANUSHKA KUMARI	REGISTERED
22	220992105088	APOORV GUPTA	REGISTERED
23	220992105094	ARPIT KUMAR SINGH	REGISTERED
24	220992105101	ASHISH SINGH	REGISTERED
25	220992105103	ASHUTOSH	REGISTERED
26	220992105105	ASHUTOSH KUMAR	REGISTERED
27	220992105109	AYUSH KUMAR JHA	REGISTERED
28	220992105118	CHANDAN KUMAR	REGISTERED
29	220992105120	DEEKSHA SHARMA	REGISTERED
30	220992105123	DEEPANSHU VERMA	REGISTERED
31	220992105129	DEVANSHU BURMAN	REGISTERED
32	220992105146	GULSHAN YADAV	REGISTERED
33	220992105150	HANSHA KUMARI	REGISTERED
34	220992105161	HARSHIT KUMAR	REGISTERED
35	220992105179	JASIKA SHARMA	REGISTERED
36	220992105189	KHAN MAHEK BANO	REGISTERED
37	220992105191	KHUSHI SAHAY	REGISTERED
38	220992105194	KOMAL KUMARI	REGISTERED
39	220992105196	KRISH KUMAR	REGISTERED
40	220992105203	KUMARI MANSI	REGISTERED
41	220992105207	KUNAL KUMAR	REGISTERED
42	220992105218	MAHAMMAD ARSH	REGISTERED



43	220992105243	MOHIT KUMAR GUPTA	REGISTERED
44	220992105251	NAJMUL KHAN	REGISTERED
45	220992105259	NIKHIL KUMAR	REGISTERED
46	220992105264	NISHAT EHTESHAM	REGISTERED
47	220992105272	PAWAN KUMAR	REGISTERED
48	220992105282	PRASHANT UPADHYAY	REGISTERED
49	220992105284	PREETI	REGISTERED
50	220992105287	PRIYA BISHT	REGISTERED
51	220992105292	PUNEET JADAUN	REGISTERED
52	220992105293	PURVA	REGISTERED
53	220992105301	RAJ SHARMA	REGISTERED
54	220992105302	RAJ SINGH	REGISTERED
55	220992105307	RAVI KUMAR	REGISTERED
56	220992105309	RAZINA INTEKHAB	REGISTERED
57	220992105314	RITA KUMARI	REGISTERED
58	220992105317	RITU SINGH	REGISTERED
59	220992105322	ROHIT KUMAR	REGISTERED
60	220992105331	SAHIL SINGH	REGISTERED
61	220992105332	SAHIN	REGISTERED
62	220992105342	SANA KHAN	REGISTERED
63	220992105344	SANDEEP KUMAR	REGISTERED
64	220992105347	SANJIBAN DEBBARMA	REGISTERED
65	220992105348	SATYAJEET SWAIN	REGISTERED



66	220992105351	SAURABH PANDEY	REGISTERED
67	220992105352	SAURAV KUMAR	REGISTERED
68	220992105354	SAURAV RAJ	REGISTERED
69	220992105355	SENKEE GARG	REGISTERED
70	220992105361	SHASHANK SINGH	REGISTERED
71	220992105363	SHEETAL SINGH	REGISTERED
72	220992105376	SHRUTI MAHARSHI	REGISTERED
73	220992105380	SIDHARTH GOUTAM	REGISTERED
74	220992105384	SOFIYA SAIFI	REGISTERED
75	220992105388	SONU SAW	REGISTERED
76	220992105390	SOURABH SAHU	REGISTERED
77	220992105393	SUDHIR KUMAR MAHATO	REGISTERED
78	220992105394	SUHEL KHAN	REGISTERED
79	220992105408	SURAJ CHAUHAN	REGISTERED
80	220992105412	TABASSUM SIDDIQUE	REGISTERED
81	220992105415	TANISHQ SHAW	REGISTERED
82	220992105420	TAPISH KARAN	REGISTERED
83	220992105423	TAUFEEQ ALAM	REGISTERED
84	220992105425	TAUSIF RAZA	REGISTERED
85	220992105428	TUSHAR	REGISTERED
86	220992105447	VIMAL PANDEY	REGISTERED
87	220992105451	VISHAL KUMAR	REGISTERED



Status of beneficiaries for Add on - Certification Course on Data Analysis and Interpretation through Python

BBA 2nd Year

Sr. NO.	Roll No.	NAME OF THE STUDENT	REGISTERED	COMPLETED
1	220992105001	AASTHA BHAGAT	REGISTERED	COMPLETED
2	220992105002	AASTHA RATHOUR	REGISTERED	COMPLETED
3	220992105007	ABHISHEK BISHT	REGISTERED	COMPLETED
4	220992105014	ADARSH SHARMA	REGISTERED	COMPLETED
5	220992105015	ADARSH YADAV	REGISTERED	COMPLETED
6	220992105017	ADITI KUMARI	REGISTERED	COMPLETED
7	220992105019	ADITI PURWAR	REGISTERED	COMPLETED
8	220992105022	ADITYA GODIYAL	REGISTERED	COMPLETED
9	220992105026	ADITYA RANA	REGISTERED	COMPLETED
10	220992105052	AMAN BHATI	REGISTERED	COMPLETED
11	220992105057	AMAN TYAGI	REGISTERED	COMPLETED
12	220992105058	AMISH KUMAR MISHRA	REGISTERED	COMPLETED
13	220992105060	AMIT PANDEY	REGISTERED	COMPLETED
14	220992105061	ANAMIKA KUMARI	REGISTERED	COMPLETED



15	220992105066	ANJALI	REGISTERED	COMPLETED
16	220992105070	ANKIT KUMAR	REGISTERED	COMPLETED
17	220992105079	ANMOL KUMAR	REGISTERED	COMPLETED
18	220992105080	ANMOL MITTAL	REGISTERED	COMPLETED
19	220992105082	ANSHU GOYAL	REGISTERED	COMPLETED
20	220992105085	ANSHUL RAJ	REGISTERED	COMPLETED
21	220992105087	ANUSHKA KUMARI	REGISTERED	COMPLETED
22	220992105088	APOORV GUPTA	REGISTERED	COMPLETED
23	220992105094	ARPIT KUMAR SINGH	REGISTERED	COMPLETED
24	220992105101	ASHISH SINGH	REGISTERED	COMPLETED
25	220992105103	ASHUTOSH	REGISTERED	COMPLETED
26	220992105105	ASHUTOSH KUMAR	REGISTERED	COMPLETED
27	220992105109	AYUSH KUMAR JHA	REGISTERED	COMPLETED
28	220992105118	CHANDAN KUMAR	REGISTERED	COMPLETED
29	220992105120	DEEKSHA SHARMA	REGISTERED	COMPLETED
30	220992105123	DEEPANSHU VERMA	REGISTERED	COMPLETED
31	220992105129	DEVANSHU BURMAN	REGISTERED	COMPLETED



32	220992105146	GULSHAN YADAV	REGISTERED	COMPLETED
33	220992105150	HANSHA KUMARI	REGISTERED	COMPLETED
34	220992105161	HARSHIT KUMAR	REGISTERED	COMPLETED
35	220992105179	JASIKA SHARMA	REGISTERED	COMPLETED
36	220992105189	KHAN MAHEK BANO	REGISTERED	COMPLETED
37	220992105191	KHUSHI SAHAY	REGISTERED	COMPLETED
38	220992105194	KOMAL KUMARI	REGISTERED	COMPLETED
39	220992105196	KRISH KUMAR	REGISTERED	COMPLETED
40	220992105203	KUMARI MANSI	REGISTERED	COMPLETED
41	220992105207	KUNAL KUMAR	REGISTERED	COMPLETED
42	220992105218	MAHAMMAD ARSH	REGISTERED	COMPLETED
43	220992105243	MOHIT KUMAR GUPTA	REGISTERED	COMPLETED
44	220992105251	NAJMUL KHAN	REGISTERED	COMPLETED
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