Report on Expert Lecture on Basics of Python Programming

Date: 4 May 2024

Presenter: Dr. Koyel Datta Gupta, Professor, CSE department

Venue: 106A,MSIT,Delhi

Introduction:

The department of CSE organized an expert lecture on the Basics of Python Programming on 4 May 2024. The expert was Dr. Koyel data Gupta, Professor ,CSE department. The lecture was attended by faculty members of CSE department. The lecture aimed to introduce participants to the fundamentals of Python programming, catering to both beginners and individuals with some prior programming experience.

Key Points Covered:

1. Introduction to Python:

   The lecture commenced with an overview of Python, highlighting its popularity, versatility, and relevance across various domains such as web development, data science, artificial intelligence, and more. The participants were introduced to the simple and clean syntax of Python, emphasizing its readability and ease of learning, which makes it an ideal language for beginners.

2. Variables and Data Types:

   The lecture delved into the concept of variables and data types in Python, explaining how variables serve as containers to store data and how Python dynamically assigns data types to variables. The participants learned about different data types such as integers, floats, strings, lists, tuples, and dictionaries, along with examples illustrating their usage.

3. Control Structures:

   - he lecture covered control structures in Python, including decision-making statements (if, elif, else) and loop structures (for and while loops).Through interactive examples and code snippets, participants gained an understanding of how control structures are used to control the flow of a Python program.

4. Functions:

   -An essential aspect of Python programming, functions were introduced to the participants. They learned how functions enable code reuse and modularity, enhancing the readability and maintainability of code.The lecture covered defining functions, passing arguments, returning values, and the significance of function documentation (docstrings).

5. Introduction to Libraries:

The lecture concluded with an introduction to Python libraries, emphasizing their role in extending Python's capabilities for specific tasks.The participants were introduced to commonly used libraries such as NumPy for numerical computing, Pandas for data manipulation, and Matplotlib for data visualization.

Conclusion:

The expert lecture on the basics of Python provided participants with a solid foundation in Python programming, covering essential concepts such as variables, data types, control structures, functions, and an introduction to libraries. The interactive nature of the lecture, coupled with hands-on examples, facilitated an engaging learning experience for attendees, equipping them with the necessary knowledge to embark on their journey into the world of Python programming.

Report on Expert Lecture on Basics of Compiler Design

Date: 4 May 2024

Presenter: Dr. Naveen Dhaiya, Professor, CSE department

Venue: 106A,MSIT,Delhi

Introduction:

The department of CSE organized an expert lecture on the Basics of Compiler Design on 4 May 2024. The expert was Dr. Naveen Dahiya, Professor ,CSE department. The lecture was attended by faculty members of CSE department.The lecture aimed to provide participants with an understanding of the fundamental concepts and processes involved in the design and implementation of compilers.

Key Points Covered:

1. Introduction to Compilers:

   The lecture began with an overview of compilers, explaining their role in translating high-level programming languages into machine-readable code.The participants were introduced to the various phases of a compiler, including lexical analysis, syntax analysis, semantic analysis, intermediate code generation, optimization, and code generation.

2. Lexical Analysis:

   The concept of lexical analysis, also known as scanning, was discussed. Participants learned how lexical analyzers break the source code into tokens or lexemes, identifying keywords, identifiers, operators, and other language elements.The presenter illustrated the use of regular expressions and

finite automata in lexical analysis, highlighting their significance in recognizing patterns within the source code.

3. Syntax Analysis:

Syntax analysis, also referred to as parsing, was explained in detail. Participants learned about the role of parsers in analyzing the syntactic structure of the source code to ensure adherence to the grammar rules of the programming language.The lecture covered different parsing techniques, including recursive descent parsing, LL parsing, and LR parsing, along with their advantages and limitations.

4. Semantic Analysis:

The importance of semantic analysis in compiler design was emphasized. Participants learned how semantic analyzers validate the meaning of the source code by checking for semantic errors and enforcing language-specific constraints.Topics such as type checking, symbol tables, and scope resolution were discussed in the context of semantic analysis.

5. Intermediate Code Generation and Optimization:

The lecture touched upon intermediate code generation, highlighting its role in representing the source code in an intermediate form suitable for optimization.The participants were introduced to common intermediate representations such as three-address code and abstract syntax trees (ASTs). Additionally, basic optimization techniques aimed at improving the efficiency of the generated code were discussed.

Conclusion:

The expert lecture on compiler design basics provided participants with a comprehensive understanding of the key concepts and processes involved in compiler construction. Through a structured presentation and insightful explanations, attendees gained valuable insights into the various phases of compilation, including lexical analysis, syntax analysis, semantic analysis, intermediate code generation, optimization, and code generation. The lecture served as a solid foundation for individuals interested in pursuing further studies or careers in compiler design and programming language implementation.

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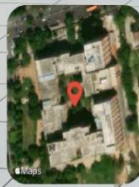Note : Captured by GPS Map Camera

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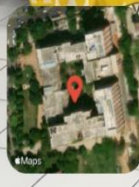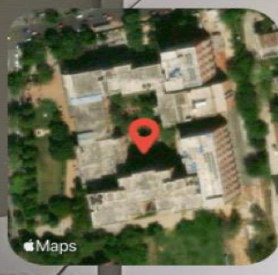05/04/2024 11:04 AM GMT+05:30
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