BUDHA DAL PUBLIC SCHOOL, PATIALA
LESSON PLAN OF CLASS VII (SUBJECT: COMPUTER)
Term –I & Term-II Syllabus (Session 2025-26)

Month-Wise Distribution

APRIL

Lesson – 1 Number System

MAY

Lesson – 3 Charts in Excel

JULY

Lesson – 4 Database in Excel

AUGUST

Lesson - 5 Introduction in MS Access

SEPTEMBER

Revision + Half yearly exam

OCTOBER

Lesson – 6 Introduction in HTML 5

NOVEMBER

Lesson – 7 Cascading Style Sheets

DECEMBER

Lesson -8 More on Python

JANUARY

Lesson – 9 More on Artificial Intelligence

FEBRUARY

Revision for Final exam

MARCH

Final Term Exams

Term – 1

Lesson – 1 Number System

Lesson – 3 Charts in Excel

Lesson – 4 Database in Excel

Lesson - 5 Introduction in MS Access

Term - 2

Lesson – 6 Introduction in HTML 5

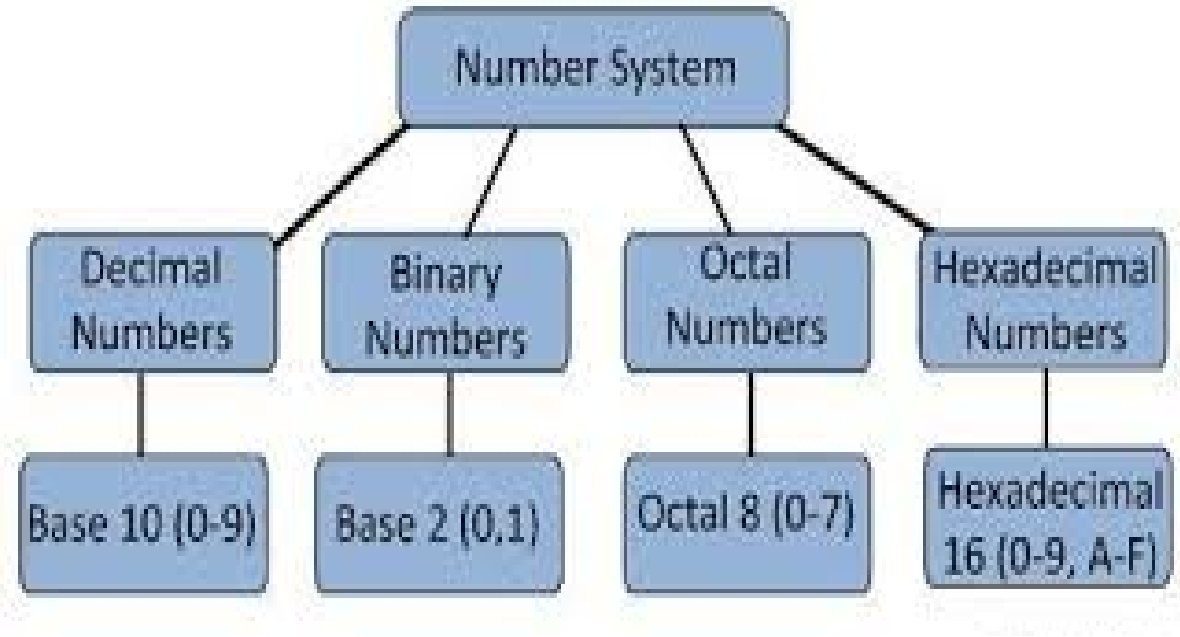
Lesson – 7 Cascading Style Sheets

Lesson -8 More on Python

Lesson – 9 More on Artificial Intelligence

Term-I

April – Chapter 1: Number System



Lesson Plan: Chapter 1 - Number System

- **Topics:**
  - Introduction to Number Systems
  - Types of Number Systems (Binary, Decimal, Octal, Hexadecimal)
  - Conversion between Number Systems
  - Binary Arithmetic
  - Applications of Number Systems in Computing
  -
- **Learning Objectives:**
  - Understand different number systems and their significance.
  - Convert numbers between binary, decimal, octal, and hexadecimal systems.
  - Perform basic binary arithmetic operations.
  - Appreciate the role of number systems in computer science.

Teaching Aids/Materials Required:

- Smart board /Projector for visuals
- Flashcards with different computer types
- Charts/Posters illustrating computer sizes
- Examples of simple codes in different languages
- Short videos explaining the evolution of computers

Teaching Methodology:

Introduction:

- Ask students, "What numbers do you use to count things in your daily life?" (Encourage responses like 1, 2, 3, etc.)

- Follow up with, "Can you think of any other types of numbers you've heard of or used before?" (Guide them towards recognizing fractions, negative numbers, etc.)

Explanation:

  - **Evolution of Numbers:** Explain how early humans used tally marks and other basic symbols for counting and how the number system has evolved to the modern decimal system (0-9).
  - **Types of Number Systems:**
    - **Decimal System (Base 10)**
    - **Binary System (Base 2)**
    - Briefly introduction of Hexadecimal **(Base 16)** and **Octal (Base 8)** to show how these systems are used in computing and digital technology.
  - **Conversions Between Decimal and Binary:**
    - How to convert a decimal number (base 10) to binary (base 2) by dividing the number by 2, recording the remainders, and reading them from bottom to top.

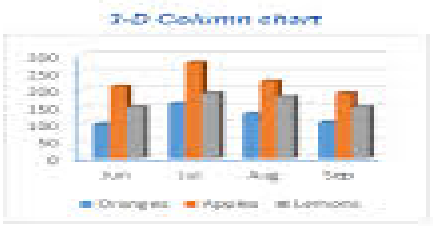
Activity:

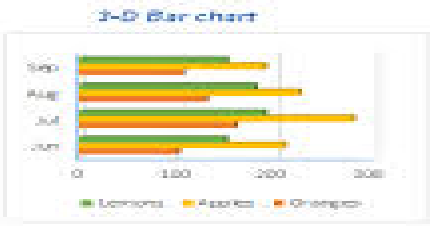
- Divide students into small groups and give each group a set of decimal and binary numbers.
- Ask students to convert decimal numbers into binary and binary numbers into decimal, using the steps explained.
- Have each group create a chart showing the conversion steps for each example they worked on.

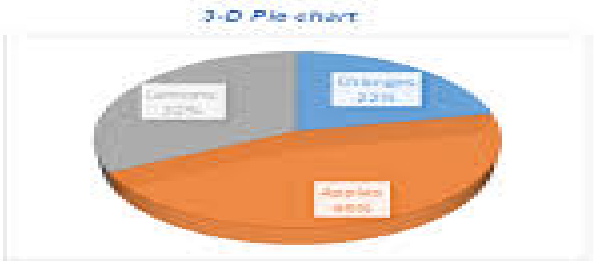
- **Art & Integrated Activity/Project/Practical:**

  - Practice number system conversions with exercises.
  - Create charts and diagrams to visualize number systems.
  - Develop simple programs to perform number system conversions.
  - Explore binary arithmetic through hands-on activities.
- **Expected Learning Outcomes:**
  - Students will be proficient in converting between number systems.
  - They will perform basic binary arithmetic operations accurately.
  - Students will understand the applications of number systems in computing.
- **Assignment and Assessments/Test:**
  - Assignments on number system conversions and binary arithmetic.
  - Quizzes on types of number systems and their applications.
  - Practical tests on conversion and arithmetic operations.
- **Remedial Measures:**
  - Extra practice sessions and step-by-step guides on number systems.
  - Video tutorials on conversion techniques and binary arithmetic.
  - Personalized feedback and one-on-one assistance for specific challenges.

May – Chapter 3: Charts in Excel







Topics:

- Introduction to Charts
- Types of Charts (Column, Line, Pie, Bar, Area, etc.)
- Creating Charts in Excel
- Formatting and Customizing Charts
- Interpreting Data through Charts

Learning Objectives:

- Understand the purpose and importance of charts in data representation.
- Create different types of charts using Excel.
- Format and customize charts for better readability and visual appeal.
- Interpret data trends and insights using charts.

Teaching Aids/Materials Required:

- Smartboard/Projector
- Computer with MS Excel installed
- Sample datasets (e.g., sales data, student scores)
- Worksheets for practice
- Chart samples (printed or digital)
- Video tutorials on creating charts in Excel (optional)

Teaching Methodology:

- **Introduction:** Start by asking students how they usually present data (e.g., lists, tables). Introduce the concept of visual representation through charts.
- **Explanation:** Demonstrate different types of charts (Column, Pie, Line, etc.) using MS Excel on the projector. Explain when and why each type of chart is used.
- **Activity:** Provide students with datasets and guide them to create charts on their own. Allow students to customize colors, labels, and chart types.
- **Discussion & Recap:** Review the charts created by students, discuss their choices, and explain common mistakes and best practices.

- **Homework:** Ask students to create a chart at home using any data (e.g., their daily routine, favorite games, etc.).

Art & Integrated Activity/Project/Practical:

- Create various types of charts with sample data in Excel.
- Design a project demonstrating data interpretation using charts.
- Compare different chart types for the same data set.

Expected Learning Outcomes:

- Students will create and format different charts in Excel.
- They will interpret and present data visually through appropriate chart types.
- Students will enhance data presentation skills for reports.

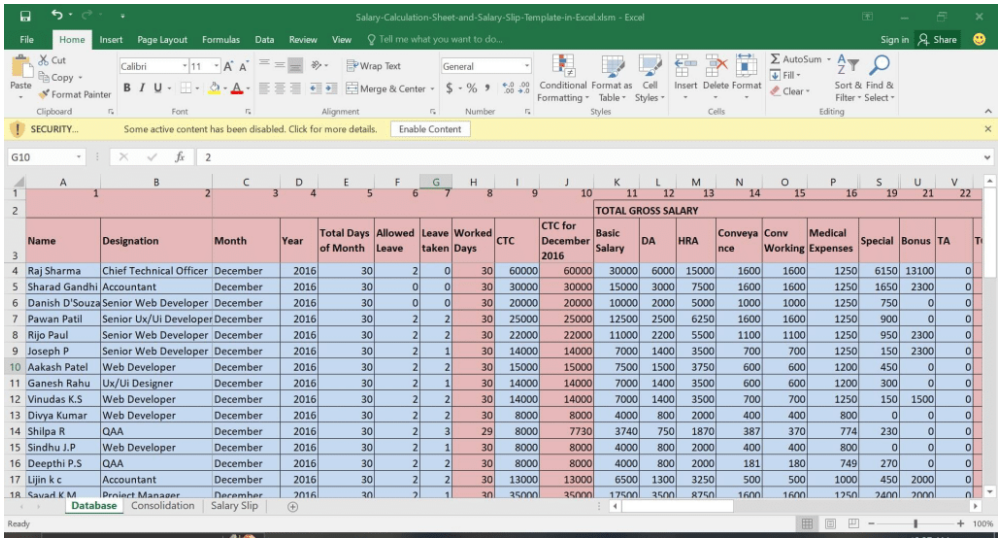
Assignment and Assessments/Test:

- Assignments on creating and customizing charts.
- Quizzes on chart types and usage.
- Practical tests on designing and interpreting charts.

Remedial Measures:

- Extra practice sheets with different datasets.
- Step-by-step video tutorials on creating and editing charts.
- Personalized guidance on selecting and designing charts for specific data sets.

July – Chapter 4: Database in Excel



Topics:

- Understanding Data Management in Excel
- Creating and Managing Data Tables
- Using Filters and Sorting Data

- Data Validation Techniques
- Basic Functions for Data Analysis (SUM, AVERAGE, COUNT, etc.)

Learning Objectives:

- Learn the basics of data management in Excel.
- Organize and manage data using tables.
- Apply filters and sorting to extract meaningful information.
- Validate data inputs and apply basic data analysis functions.

Teaching Aids/Materials Required:

- Computer Lab with MS Excel installed
- Pre-prepared data files for practice
- Projector/Smartboard for demonstrations
- Worksheets with database management tasks
- Instruction manual or guide

Teaching Methodology:

- **Introduction:** Start with a discussion on the importance of managing large sets of data.
- **Explanation:** Demonstrate how to create tables in Excel, use filters, sort data, and validate entries.
- **Activity:** Provide students with raw data and ask them to create and organize tables. Guide them in applying filters and sorting records.
- **Discussion & Recap:** Analyze the sorted/filtered tables created by students, explain possible real-world applications.
- **Homework:** Ask students to create a simple data table at home and practice sorting and filtering it.

Art & Integrated Activity/Project/Practical:

- Create a mini database in Excel (student records, inventory management, etc.).
- Practice sorting and filtering on real-life datasets.
- Apply data validation for ensuring data accuracy.

Expected Learning Outcomes:

- Students will create and manage structured data tables in Excel.
- They will apply filters, sorting, and data validation.
- Students will perform basic data analysis using Excel functions.

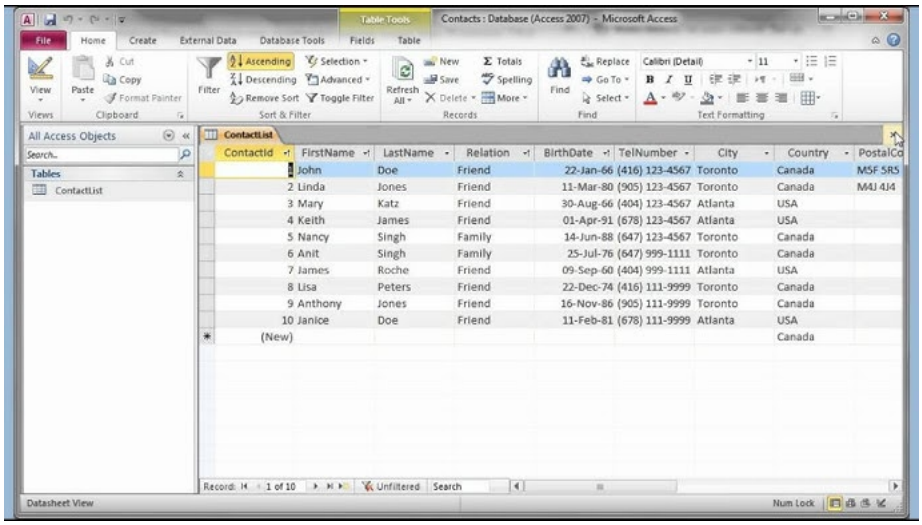
Assignment and Assessments/Test:

- Assignments on creating data tables and applying filters.
- Quizzes on data management concepts in Excel.
- Practical tests on managing and analyzing data using Excel.

Remedial Measures:

- Step-by-step practice exercises on managing Excel databases.
- Video tutorials on filters, sorting, and validation.
- One-on-one support for handling complex data tasks.

August – Chapter 5: Introduction in MS Access



Topics:

- Introduction to Databases and DBMS
- Overview of MS Access Interface
- Creating Tables and Defining Fields
- Setting Primary Keys
- Data Entry and Editing Records
- Basic Queries and Reports

Learning Objectives:

- Understand database concepts and the role of MS Access.
- Create and manage tables with appropriate data types.
- Define primary keys and ensure data integrity.
- Perform basic queries and generate simple reports.

Teaching Aids/Materials Required:

- Computers with MS Access installed
- Sample databases for demonstration
- Projector/Smartboard
- Worksheets for table design and queries
- Instructional videos (optional)

Teaching Methodology:

- **Introduction:** Ask students what they understand by the term "database." Discuss daily examples (library records, school database).
- **Explanation:** Show the interface of MS Access, create a sample table, and explain primary keys.
- **Activity:** Let students create a simple table in Access, define data types, and set primary keys.

- **Discussion & Recap:** Review tables and records made by students. Introduce simple queries and reports.
- **Homework:** Ask students to create a small database at home (inventory list, student marks, etc.).

Art & Integrated Activity/Project/Practical:

- Create a simple database (library, school, etc.) in MS Access.
- Practice data entry and use forms for data input.
- Generate basic reports and queries for data retrieval.

Expected Learning Outcomes:

- Students will understand database management using MS Access.
- They will create tables, enter data, and set primary keys.
- Students will execute simple queries and generate reports.

Assignment and Assessments/Test:

- Assignments on database creation and table management.
- Quizzes on DBMS concepts and MS Access interface.
- Practical tests on table creation, data entry, and report generation.

Remedial Measures:

- Guided worksheets for step-by-step database creation.
- Video tutorials on MS Access basics.
- Personalized feedback on database design and queries.

SEPTEMBER

Revision + Half Yearly Exam

OCTOBER **Lesson Plan-Chapter– 6** Introduction in HTML 5

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Title goes here</title>
  </head>
  <body>

  </body>
</html>
```

Topics:

- Introduction to HTML5
- HTML5 Structure and Basic Tags

- Creating Webpages using HTML5
- Adding Multimedia Elements
- Semantic Tags in HTML5

Learning Objectives:

- Understand the structure and syntax of HTML5.
- Create simple webpages using HTML5.
- Incorporate multimedia elements like audio and video.
- Apply semantic tags for better webpage structure.

Art & Integrated Activity/Project/Practical:

- Create a personal homepage using HTML5.
- Add multimedia elements to webpages.
- Develop small web projects individually or in groups.

Expected Learning Outcomes:

- Students will develop webpages using HTML5.
- They will understand and use semantic tags appropriately.
- Students will integrate multimedia elements effectively.

Assignment and Assessments/Test:

- Assignments on creating basic HTML5 pages.
- Quizzes on HTML5 structure and tags.
- Practical tests on webpage development.

Remedial Measures:

- Step-by-step guide to creating HTML pages.
- Additional practice assignments.
- Personalized feedback on code structure and formatting.

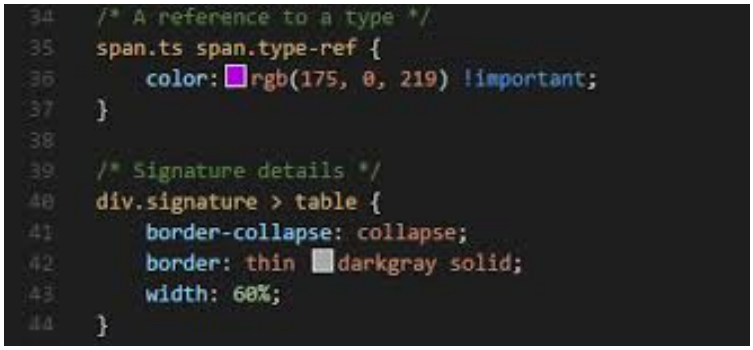
Teaching Aids/Materials Required:

- Computers with HTML editor
- Projector/Smartboard
- Sample HTML files

Teaching Methodology:

- Introduction: Discuss what makes up a webpage.
- Explanation: Show how HTML tags structure content.
- Activity: Students build simple webpages.
- Discussion & Recap: Review student pages and suggest improvements.

NOVEMBER- Chapter 7 Cascading Style Sheets (CSS)



```
/* A reference to a type */
span.ts span.type-ref {
    color: rgb(175, 0, 219) !important;
}

/* Signature details */
div.signature > table {
    border-collapse: collapse;
    border: thin darkgray solid;
    width: 60%;
}
```

Topics:

- Introduction to CSS
- Types of CSS (Inline, Internal, External)
- CSS Syntax and Selectors
- Applying CSS to HTML pages
- Layout Design and Styling Elements

Learning Objectives:

- Understand how CSS styles HTML elements.
- Apply different types of CSS to webpages.
- Create structured and styled webpages.
- Learn the importance of consistency in web design.

Art & Integrated Activity/Project/Practical:

- Create a styled webpage using external CSS.
- Redesign their HTML pages with improved aesthetics.
- Demonstrate use of selectors and pseudo-classes.

Expected Learning Outcomes:

- Students will apply CSS to improve webpage layout and style.
- They will understand the use of selectors and properties in CSS.
- Students will design clean and consistent webpages.

Assignment and Assessments/Test:

- Assignments on creating CSS files and linking them to HTML.
- Quizzes on CSS syntax and types.
- Practical tests on webpage styling using CSS.

Remedial Measures:

- Additional CSS coding practice.
- Code review and debugging sessions.
- Video tutorials on advanced CSS topics.

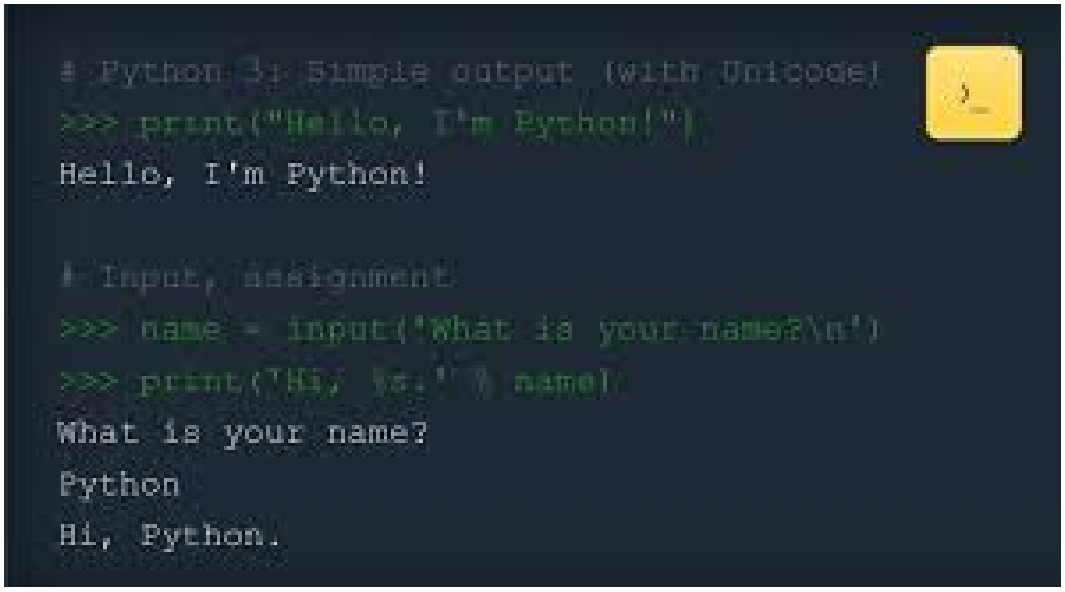
Teaching Aids/Materials Required:

- Computers with HTML/CSS editors
- Projector/Smartboard
- Example CSS projects

Teaching Methodology:

- Introduction: Why design matters in web development.
- Explanation: Demonstrate CSS usage through examples.
- Activity: Students style existing HTML pages.
- Discussion & Recap: Present styled pages and discuss improvements.

DECEMBER - Chapter 8 – More on Python



Topics:

- Conditional Control Structures (if, elif, else)
- Loops (for loop, while loop)
- Introduction to Turtle Graphics
- Drawing Shapes and Patterns with Turtle
- Combining Control Structures with Turtle

Learning Objectives:

- Implement control structures in Python programs.
- Use loops for repetitive tasks.
- Create graphics using Turtle module.
- Combine loops and conditions to develop interactive graphics.

Art & Integrated Activity/Project/Practical:

- Create patterns and shapes using Turtle graphics.
- Develop programs that use control structures to solve problems.
- Design interactive drawings using Python Turtle.

Expected Learning Outcomes:

- Students will write Python programs using control structures.
- They will develop graphical outputs using Turtle.
- Students will enhance logical thinking through coding exercises.

Assignment and Assessments/Test:

- Assignments on writing control structures and loops.
- Quizzes on syntax and logic building.
- Practical tests on Turtle graphics programs.

Remedial Measures:

- Additional coding challenges on loops and conditions.
- Debugging sessions and problem-solving strategies.
- Tutorial videos on Turtle graphics.

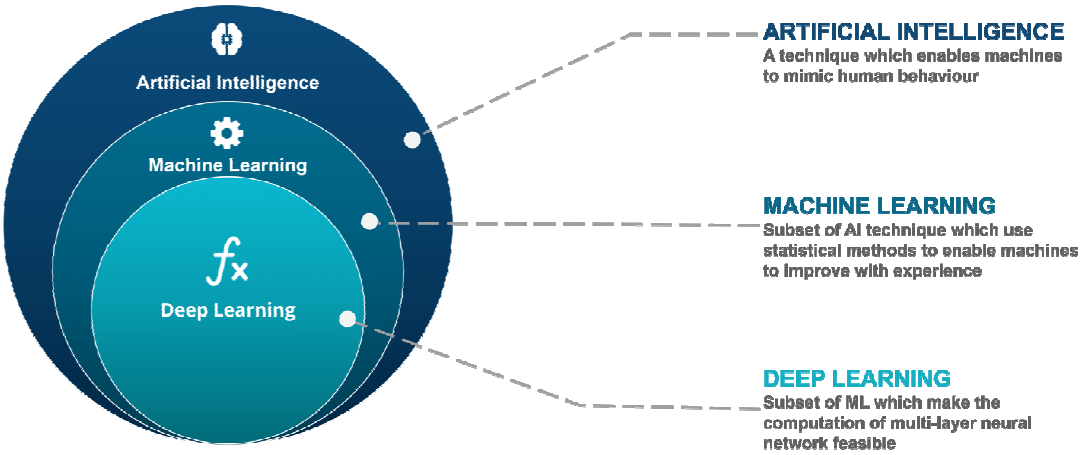
Teaching Aids/Materials Required:

- Computers with Python installed
- Projector/Smartboard
- Example Python code snippets

Teaching Methodology:

- Introduction: What is coding and why use Python?
- Explanation: Show how control structures work.
- Activity: Code along exercises in Python and Turtle.
- Discussion & Recap: Review students' drawings and codes.

January Lesson Plan- Chapter 9 - More on Artificial Intelligence



Topics:-

- Recap of AI Concepts
- AI Technologies (Machine Learning, Natural Language Processing, Robotics)
- Applications of AI in Daily Life
- Introduction to AI Tools (like Teachable Machine, Scratch AI)
- Ethical Implications of AI

Learning Objectives:

- Deepen understanding of AI technologies and their applications.
- Explore real-life examples and case studies of AI use.
- Understand how AI tools are used to develop basic AI models.
- Discuss the ethical considerations of using AI.

Teaching Aids/Materials Required:

- Computers/Tablets with internet access
- AI Tools like Teachable Machine, Scratch AI
- Projector/Smartboard
- Printed material on AI concepts and ethics
- Videos showing AI applications in real life

Teaching Methodology:

- **Introduction:** Begin with an open discussion on where students have seen AI (e.g., Siri, Alexa, recommendation systems).
- **Explanation:** Introduce AI tools and explain concepts like Machine Learning, NLP, and Robotics.
- **Activity:** Conduct a hands-on activity with Teachable Machine (e.g., image recognition project).
- **Discussion & Recap:** Discuss AI's impact on different industries, and ethical concerns.
- **Homework:** Ask students to create a small AI-based presentation or research any AI application.

Art & Integrated Activity/Project/Practical:

- Create a simple AI model using Teachable Machine or Scratch AI.
- Group discussion on AI's impact on society and ethics.
- Presentation on different AI applications (healthcare, education, transport).

Expected Learning Outcomes:

- Students will demonstrate understanding of AI concepts.
- They will create basic AI models using AI tools.
- Students will critically analyze the ethical implications of AI.

Assignment and Assessments/Test:

- Assignments on AI applications and technologies.
- Quizzes on AI terms and tools.
- Practical tests on creating basic AI projects.

Remedial Measures:

- Extra classes for AI tools practice.
- Step-by-step guides on AI project development.
- Personalized mentoring for AI model building.

February – Revision for Final Exam

March – Final Term Exams