Introduction to Artificial Intelligence
Suitable for: G10 - G12

Prerequisite: Introduction to Python: Level I
Duration: 15 Weeks
Classes per Week: 1 class (45 minutes each)

Course Overview:

This course provides an introduction to Artificial Intelligence (AI) and machine learning concepts. Students will explore how machines learn, understand decision-making processes, and build simple AI models. Using Python, they will dive into topics like natural language processing, image recognition, and predictive analysis. By the end of the course, students will have a foundational understanding of AI applications and will complete various projects demonstrating AI in action.

Covered Topics

Unit 1: Basics of AI and Machine Learning
- Introduction to AI and machine learning concepts
- Understanding how machines learn and make predictions
- Training and testing a simple model for pose detection

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Unit 2: Introduction to Models and Applications
- Overview of linear regression and its applications
- Exploring AI in everyday life and various industries
- Building a basic AI model and understanding its functions

Unit 3: Decision Making and Data Processing
- Understanding the decision-making process in AI
- Python review and introduction to relevant modules
- Applying linear regression in Python for predictions

Unit 4: Natural Language Processing and Chatbots
- Introduction to natural language processing (NLP)
- Building a simple chatbot and conducting sentiment analysis
- Creating an AI storyteller using NLP techniques

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Unit 5: Image Recognition and Final Projects
- Basics of image recognition and classification
- Projects like Dogs vs Cats image classification and housing price prediction
- Combining concepts to build a comprehensive AI application

Materials Needed:
- Computer or tablet
- Internet connection for programming and resources
- Chrome Browser

Assessment
At the end of each lesson, learners will be assessed on their understanding of AI concepts and their ability to apply them using Python. Assessments will focus on creativity, analytical skills, and the functionality of the AI models they build.

Certification
A certificate of completion will be awarded to students who successfully complete the course, recognizing their foundational skills in artificial intelligence.