Chapter 22: Suggested Projects

(For Class 9 Artificial Intelligence)

Introduction

In the world of Artificial Intelligence (AI), *learning by doing* is key. This chapter focuses on applying the knowledge gained in the previous lessons to **real-world projects**. These activities are designed to encourage creativity, critical thinking, and problem-solving using AI concepts and tools. Students will also explore how AI can be used to solve problems aligned with **Sustainable Development Goals (SDGs)**.

Project 1: Create an AI Model

Objective

Students will build a basic AI model using **user-friendly tools**. This project helps students understand the **training and testing process**, concept of **datasets**, and how machines learn patterns.

Tools to Use

1. **Teachable Machine** https://teachablemachine.withgoogle.com/ A web-based tool by Google that allows anyone to train a model using images, sounds, or poses.
2. **Machine Learning for Kids** https://machinelearningforkids.co.uk/ Designed especially for students to create and train models using text, images, or numbers and use them in Scratch or Python.

Steps to Perform

1. Choose a type of data (Images/Text/Sound).
2. Collect sample data for different classes.
3. Train the model using the tool.
4. Test and refine the model.
5. Present the output and share your learning.

Example Ideas

- Image Classifier: Recognize happy and sad faces.
- Sound Classifier: Differentiate claps, whistles, and snaps.
- Text Classifier: Identify positive or negative feedback.

Project 2: Solve a Problem Related to Sustainable Development

Objective

To identify a **real-world problem** related to **SDGs (Sustainable Development Goals)** and create an AI-supported solution using **design thinking and data handling**.

Step 1: Identify the Problem

Choose a problem such as:

- Pollution in your area
- Water wastage
- Energy consumption
- Deforestation
- Traffic congestion

Step 2: Create a 4Ws Problem Canvas

The **4Ws canvas** helps to understand the problem deeply.

W	Question	Example
Who	Who is affected?	Local residents
What	What is the problem?	Air pollution
Where	Where is it happening?	Industrial area
Why	Why is it a concern?	Causes health problems

Step 3: Identify Features and Create a System Map

List the features (data points) that contribute to the problem.

Example (for Air Pollution):

- Vehicle count
- Factory emission level
- Tree coverage
- Air Quality Index (AQI)
- Time of day

Use a **system map** to show how these elements are related.

Step 4: Data Collection and Visualization

Use **Spreadsheet software** (like Excel or Google Sheets) to:

- Record collected data
- Use graphs (bar, pie, line) to visualize the data
- Find patterns or correlations

Step 5: AI-Enabled Solution

Create or research a prototype solution. Some ideas:

- A mobile app that gives pollution alerts.
- Smart watering systems for water conservation.
- AI-powered garbage sorting systems.

Suggested Field Visit

Objective

To observe how AI is used in real-life applications.

Suggested Places to Visit

- **IT companies**
- **Manufacturing plants with automation**
- **Hospitals using AI for diagnosis**
- **Smart cities or control centers**
- **Virtual tours (webinars or videos) if physical visit is not possible**

Report Format

- Name of the place visited
- Purpose of visit
- AI applications observed
- Learning outcomes

Suggested Student Portfolio

Students should **maintain a digital or physical portfolio** of their AI learning journey.

Minimum 5 Activities to Include

1. **Letter to Future Self** Reflect on your AI learning and hopes for the future.
2. **Smart Home Floor Plan** Design a house using AI-powered appliances and systems.

3. **Future Job Advertisement** Create an ad for a future AI-based job.
4. **Research on AI for SDGs or AI in Different Sectors**
5. **4Ws Canvas and System Map** From the SDG problem-solving project.

Benefits of These Projects

- Builds **practical understanding** of AI.
- Enhances **data literacy** and **design thinking**.
- Promotes **teamwork** and **creative solutions**.
- Encourages awareness of **global challenges and sustainable development**.

Summary

This chapter gave students a chance to *apply their AI knowledge* in real-world contexts. From building a working AI model using beginner-friendly tools to addressing critical problems linked to sustainability, these projects combine **creativity, technology, and purpose**. They also encourage students to observe and explore AI in action and document their learning experiences in a portfolio that reflects their growth and insights.
