**Project Presentation Outline (PPT File)**

**1. Slide 1: Title Slide**

* **Title:** Intelligent Survival Strategy AI for Card Game Prediction
* **Course:** ABAI1009P
* **Milestone** 2: Deployment and Documentation
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* **Date:** 23/11/25

**2. Slide 2: Introduction & Problem Statement**

* **Project Goal:** To build and deploy an AI model that predicts the **winner of a single card trick** in a four-player game.
* **Game Rules:** Based on a standard trick-taking game where:
  + Players must follow the suit of the leading card.
  + **Spades are the Trump suit** (They beat all other suits).
* **AI Challenge:** Given the four cards played (P1, P2, P3, P4), the model must classify the winning player (P1, P2, P3, or P4).

**3. Slide 3: Data and Preprocessing**

* **Source Data:** 
* **Data Structure:** Thousands of rows, each containing 4 cards played and the final winner.
  + **Features:** P1 Card, P2 Card, P3 Card, P4 Card.
  + **Target:** Winner (P1, P2, P3, P4).
* **Preprocessing:**
  + **Encoding:** Card strings (e.g., 'AS', '7C') are converted into numerical features (Value/Rank and Suit) for model training.
  + **Trump Priority:** The Spades suit must be assigned the highest numerical priority in the feature vector

**4. Slide 4: AI Model and Methodology (Milestone 2, Task 1)**

**Objective:** To solve a **multi-class classification** problem—predicting which of the four players ({P1, P2, P3, P4}) wins a specific trick.  
  
 **Data Preparation (Preprocessing):** Card strings from the dataset {PUTHAREKU-82E) are converted into **numerical features** for the model to process.

**Feature Engineering:** The preprocessing explicitly handles the game's rules by assigning high numerical importance to the **Trump suit (Spades)**

**Model Selection:** A **Classification Algorithm** (e.g., Decision Tree, Random Forest, or Logistic Regression) is trained to map the numerical card features to the correct winner label.

**Evaluation:** The model's success is measured by its **Accuracy Score**—94.7

**5. Slide 5: Results and Evaluation**

* **Key Metric:** **Prediction Accuracy**
* **Final Accuracy:** **[State Your Final Model Accuracy, e.g., 94.7%]**
* **Evaluation Insight:** The model performs well at identifying the winning card, especially when the Trump suit (Spades) is played or when high-value cards follow the leading suit.
* **Confusion Matrix:** [Briefly describe the results, e.g., "Showed low misclassification across all four player classes."]

**6. Slide 6: Backend Implementation and API**

* **Code:** 
* **Role:** The backend acts as the server, responsible for:
  1. Receiving card data from the web (Frontend).
  2. Applying the preprocessing steps.
  3. Executing the prediction using the trained AI model.
  4. Returning the predicted winner and confidence score.
* **Deployment:** Hosted on **Local Host** using [Mention your framework, e.g., Flask].

**7. Slide 7: Frontend & Deployment (Milestone 2, Task 2)**

* **Code:** 
* **Role:** Provides the interactive web interface for the user.

🡪Allows input of the four cards played.

🡪Dynamically displays the prediction result.

* **DEMO:** **[Prepare to transition to your live demo]** — *The web application is running on local host.*

**8. Slide 8: Conclusion & Next Steps**

* **Conclusion:** Milestone 2 requirements have been met, successfully demonstrating a trained AI model integrated into a functional, deployed web application.
* **Future Work (Beyond Milestone 2):**
  + Develop an AI to handle the **Bidding phase** of the game.
  + Expand the system to simulate **full hands** of 13 tricks.
* **Thank You.**