**Week 6: Deployment and Presentation**

**Tasks:**

1.  Model Deployment Preparation

    - Serialize the final model
    - Develop a model inference pipeline
    - Create a requirements.txt file for dependencies

2.  Streamlit App Development

    - Design the user interface for the prediction app
    - Implement data input forms and validation
    - Integrate the model inference pipeline
    - Add visualizations for model explanations (e.g., SHAP plots)

3.  Testing and Debugging

    - Conduct thorough testing of the Streamlit app
    - Debug any issues in the deployment pipeline
    - Optimize app performance and responsiveness

4.  Documentation and User Guide

    - Write comprehensive documentation for the app
    - Create a user guide with examples
    - Document the model's limitations and appropriate use cases

5.  Final Presentation Preparation

    - Prepare a slide deck summarizing the entire project
    - Create a live demo script for the Streamlit app
    - Practice the presentation and Q&A

**Deliverables:**

1.  Deployed Streamlit app for student dropout prediction
2.  GitHub repository containing:

    - All project code (data preprocessing, model training, Streamlit app)
    - README file with project overview and setup instructions
    - Requirements.txt file
    - Notebooks and scripts from all project phases

3.  Comprehensive project documentation including:

    - Technical documentation of the entire pipeline

- User guide for the Streamlit app
- Model card detailing model performance, limitations, and ethical considerations

4. Final presentation slide deck (PDF or PPTX)
5. Recorded video demo of the Streamlit app
6. Project closure report summarizing:

- Project objectives and achievements
- Challenges faced and solutions implemented
- Future work and potential improvements