Project Timeline: Sentiment-Aware Churn Prediction : September 2nd - November 17th

Phase 1: Foundation & Feature Engineering (September)

Week	Dates	Key Tasks & Milestones
Week 1	Sep 2 - Sep 8	**Project Kick-off:** • Finalize GitHub setup & project structure. • Load all datasets into notebooks. • **Milestone:** Complete initial Exploratory Data Analysis (EDA).
Week 2	Sep 9 - Sep 15	**R+FMD Model Implementation:** • Code feature engineering script for R, F, M, and D. • **Milestone:** Generate and save the core customer_features.csv file.
Week 3	Sep 16 - Sep 22	**Segmentation & Sentiment:** • Integrate sentiment features (avg. rating, negative feedback count.• Begin GMM model training and comparison.
Week 4	Sep 23 - Sep 29	**Finalize Segments:** • Analyze and profile GMM clusters. • Assign business labels (e.g., High-Value, At-Risk). • **Milestone:** Generate 3D visualization of final segments.

Phase 2: Predictive Modeling & Dashboard Development (October)

Week	Dates	Key Tasks & Milestones
Week 5	Sep 30 - Oct 6	**Churn Model Prep:** • Define the "Churn" target variable. • Split data into training and testing sets. • **Milestone:** Create churn_data.csv for modeling.
Week 6	Oct 7 - Oct 13	**Model Training & Evaluation:** • Train RandomForest classifier.• Evaluate accuracy and analyze feature importance. • **Milestone:** Save the final churn_prediction_model.pkl.
Week 7	Oct 14 - Oct 20	**Dashboard Build (Part 1):** • Set up Streamlit application structure. • Build "Executive Summary" & "Segmentation" pages.
Week 8	Oct 21 - Oct 27	Dashboard Build (Part 2):• Implement "Churn Prediction" page with interactivity. • **Milestone:** A functional, three-page dashboard is live locally.

Phase 3: Finalization & Reporting (November)

Week	Dates	Key Tasks & Milestones
Week 9	Oct 28 - Nov 3	**Refinement & Testing:** • Refine dashboard UI/UX. • Conduct end-to-end testing of the application and models. • **Milestone:** Dashboard is feature-complete and bug-free.
Week 10	Nov 4 - Nov 10	**Documentation:** • Write the final README.md. • Complete the methodology.md and results_analysis.md files.