College Football Season Simulator - Project Overview

Project Description

A comprehensive college football season simulator that models the entire FBS division, including all conferences, weekly games, rankings, and a 12-team playoff system. The simulator will replicate a complete season from opening week through the national championship game, incorporating realistic scheduling, rankings, and post-season play.

**Core Components**

1. Conference Structure
2. Power 5 Conferences

* SEC (16 teams)
* Big Ten (16 teams)
* ACC (17 teams)
* Big 12 (16 teams)
* Pac-12 (12 teams)

1. Group of 5

* American Athletic (14 teams)
* Conference USA (9 teams)
* Mid-American (12 teams)
* Mountain West (12 teams)
* Sun Belt (14 teams)

1. Independents

* Notre Dame, UMass, UConn

1. Regular Season

* 12 games per team
* Conference games based on conference requirements
* Non-conference games including rivalry matches
* Weekly Top 25 rankings
* Conference standings tracking

1. Team Rating System

* Base team ability score
* Home field advantage
* Win/loss record tracking
* Quality wins consideration
* Strength of schedule impact

1. Post-Season Structure

* Conference Championship Games
* Bowl Game Selection
* 12-Team Playoff System
  + Top 4 teams receive first-round byes
  + Seeds 5-12 play in first round
  + Conference champions receive priority
  + At-large team selection process

**Key Features**

1. Game Simulation

* Weekly matchups
* Home/away designation
* Win/loss determination
* Score generation
* Upset probability
* Rivalry game impact

1. Rankings Management

* Weekly Top 25 poll
* Playoff rankings
* Conference standings
* Division standings (where applicable)

1. Schedule Generation

* Conference game scheduling
* Non-conference game scheduling
* Rivalry game preservation
* Bye week distribution

1. Post-Season Processing

* Conference champion determination
* Bowl game selection and matching
* Playoff team selection
* Playoff bracket generation
* National champion crowning

**Statistical Tracking**

1. Team Statistics

* Overall record
* Conference record
* Home/away records
* Ranked opponent record
* Points scored/allowed
* Quality wins

1. Conference Statistics

* Conference records
* Non-conference performance
* Bowl game records
* Playoff appearances
* Championships

1. Required Output

* Weekly game results and updated standings
* Current Top 25 rankings
* Conference standings
* Bowl game matchups
* Playoff brackets and results
* Season summary report

1. Future Expansion Possibilities

* Historical data tracking
* Multi-season simulation
* Team progression/regression between seasons
* Coaching changes impact
* Recruiting class impact
* Custom conference realignment

This simulation aims to provide a realistic representation of a college football season while maintaining flexibility for future enhancements and modifications.