## Schedule Network Diagram for Requirements Gathering Agent Project

This document outlines the project schedule using the Precedence Diagramming Method (PDM). Due to the complexity of fully representing a project of this size in a simple ASCII diagram, this document will provide a textual representation focusing on key dependencies and critical path analysis. A visual diagram would be best created using project management software (like MS Project, Primavera P6, or similar).

### Network Diagram Overview

**Diagramming Method:** Precedence Diagramming Method (PDM)

**Project Phases:** The project is divided into five key phases: Initiation, Planning, Execution, Monitoring & Control, and Closure. These phases are not necessarily sequential; there’s overlap and iteration between them.

**Critical Path:** The critical path will be determined through network analysis (detailed below) after duration estimates are assigned to each activity. This analysis will identify the activities that, if delayed, will directly impact the project completion date.

**Schedule Constraints:** Key constraints include release deadlines, resource availability (especially AI API access), and potential dependencies on third-party libraries or services.

### Activity Network Structure

The following table outlines the key activities, their dependencies, and a high-level categorization. Specific duration estimates would be added during detailed schedule development. Dependencies are expressed using the four standard PDM relationships: Finish-to-Start (FS), Start-to-Start (SS), Finish-to-Finish (FF), and Start-to-Finish (SF). Leads and lags will be determined during detailed scheduling.

| Activity ID | Activity Description | Phase | Duration (Estimate) | Predecessors | Successors | Dependency Type | Notes |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Define Project Scope & Objectives | Initiation |  |  | 2, 3 | FS | Based on README & Project Charter |
| 2 | Develop Project Charter | Initiation |  | 1 | 4 | FS | Formal project authorization |
| 3 | Stakeholder Identification & Analysis | Initiation |  | 1 | 4 | FS | Identify key stakeholders and their needs |
| 4 | High-Level Requirements Gathering | Planning |  | 2, 3 | 5, 6 | FS | Initial requirements gathering |
| 5 | Detailed Requirements Analysis & Documentation | Planning |  | 4 | 7 | FS | In-depth analysis of functional & non-functional requirements |
| 6 | System Architecture Design | Planning |  | 4 | 7 | FS | High-level design of system architecture |
| 7 | Develop Detailed Work Breakdown Structure (WBS) | Planning |  | 5, 6 | 8 | FS | Detailed project decomposition |
| 8 | Resource Allocation & Planning | Planning |  | 7 | 9 | FS | Assign resources to tasks |
| 9 | Risk Assessment & Mitigation Planning | Planning |  | 8 | 10 | FS | Identify and mitigate project risks |
| 10 | Develop Schedule & Network Diagram | Planning |  | 9 | 11 | FS | Create project schedule |
| 11 | Develop Test Plan | Planning |  | 10 | 12 | FS | Define testing strategy |
| 12 | Code Development & Implementation | Execution |  | 11 | 13 | FS | Core development of the application |
| 13 | Unit Testing | Execution |  | 12 | 14 | FS | Unit-level testing of code |
| 14 | Integration Testing | Execution |  | 13 | 15 | FS | Integration testing of system components |
| 15 | System Testing | Execution |  | 14 | 16 | FS | End-to-end system testing |
| 16 | Deployment Preparation | Execution |  | 15 | 17 | FS | Prepare for deployment |
| 17 | Deployment to Production | Execution |  | 16 | 18 | FS | Deploy the application to production |
| 18 | User Acceptance Testing | Monitoring & Control |  | 17 | 19 | FS | User testing and feedback collection |
| 19 | Final Documentation & Reporting | Monitoring & Control |  | 18 | 20 | FS | Compile final project documentation |
| 20 | Project Closure | Closure |  | 19 |  |  | Formal project closure |

**Note:** This is a simplified representation. Many more activities would be detailed in a full project schedule.

### Network Analysis (Preliminary)

**Critical Path Analysis:** The critical path will be determined after assigning durations to each activity. It will likely involve activities related to requirements analysis, design, development, testing, and deployment. Delays in these critical path activities will directly impact the project’s overall completion date.

**Float Analysis:** Float analysis will be performed to identify activities with slack time. This will allow for flexibility in scheduling and resource allocation.

### Schedule Optimization

Schedule compression techniques (fast-tracking and crashing) and resource leveling will be employed as needed to optimize the schedule and address potential resource conflicts. A baseline schedule will be established and managed through a formal change control process.

### Network Diagram Representation

A detailed network diagram would be produced using project management software. The above table provides the foundational data for creating this diagram. The diagram would visually represent the activities, their dependencies, and durations, clearly showing the critical path and float values for each activity.

This document provides a high-level framework for the project schedule. A more detailed schedule, including specific duration estimates, resource assignments, and a visual network diagram, will be developed and maintained throughout the project lifecycle. This detailed schedule will be updated regularly to reflect progress and any necessary changes.