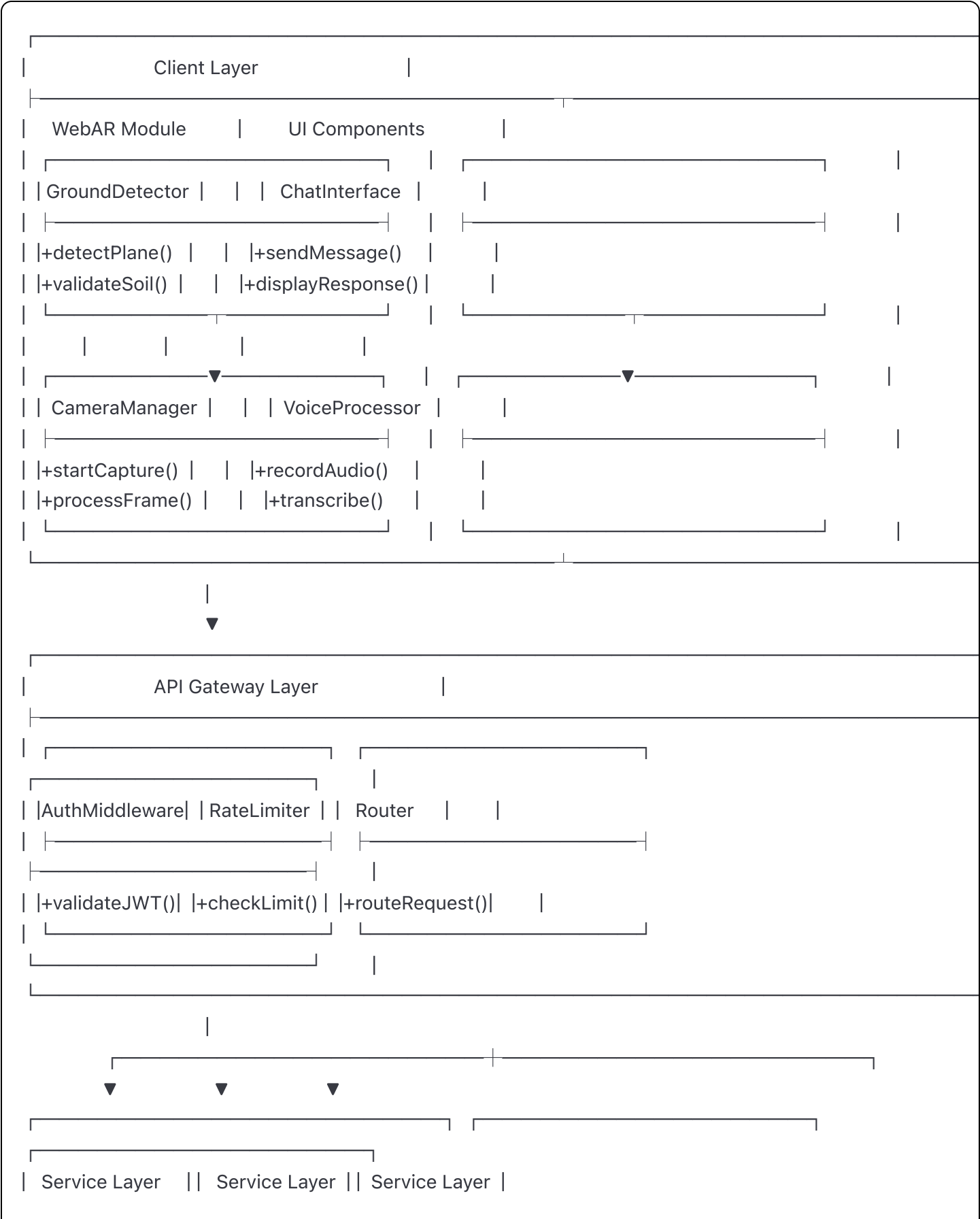
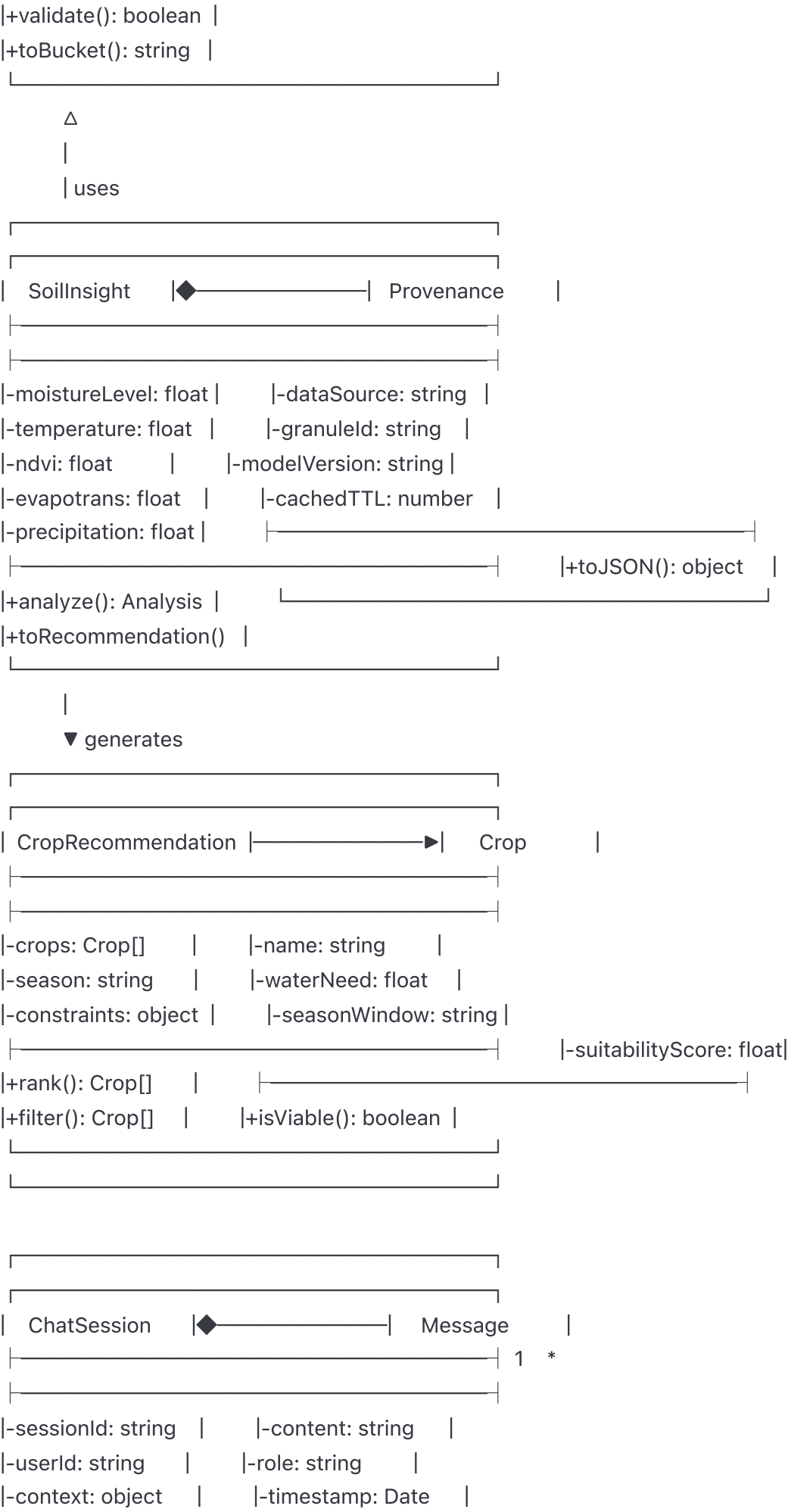
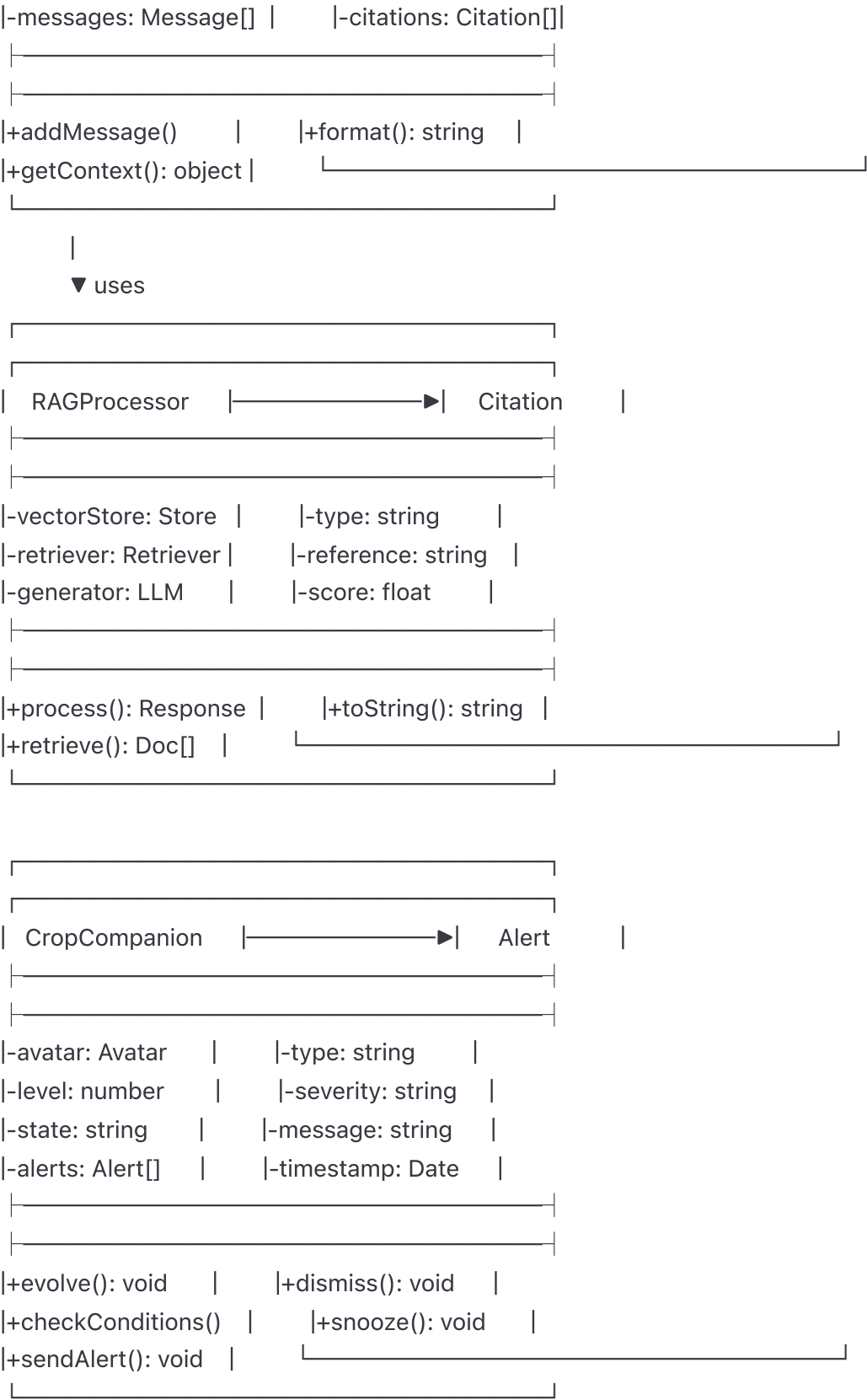


UML Diagrams - Real-World AR ChatGPT for Farmers

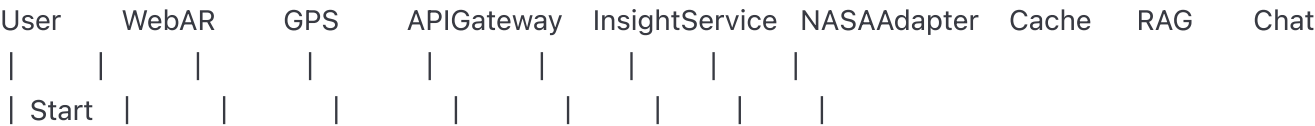
1. System Component Diagram

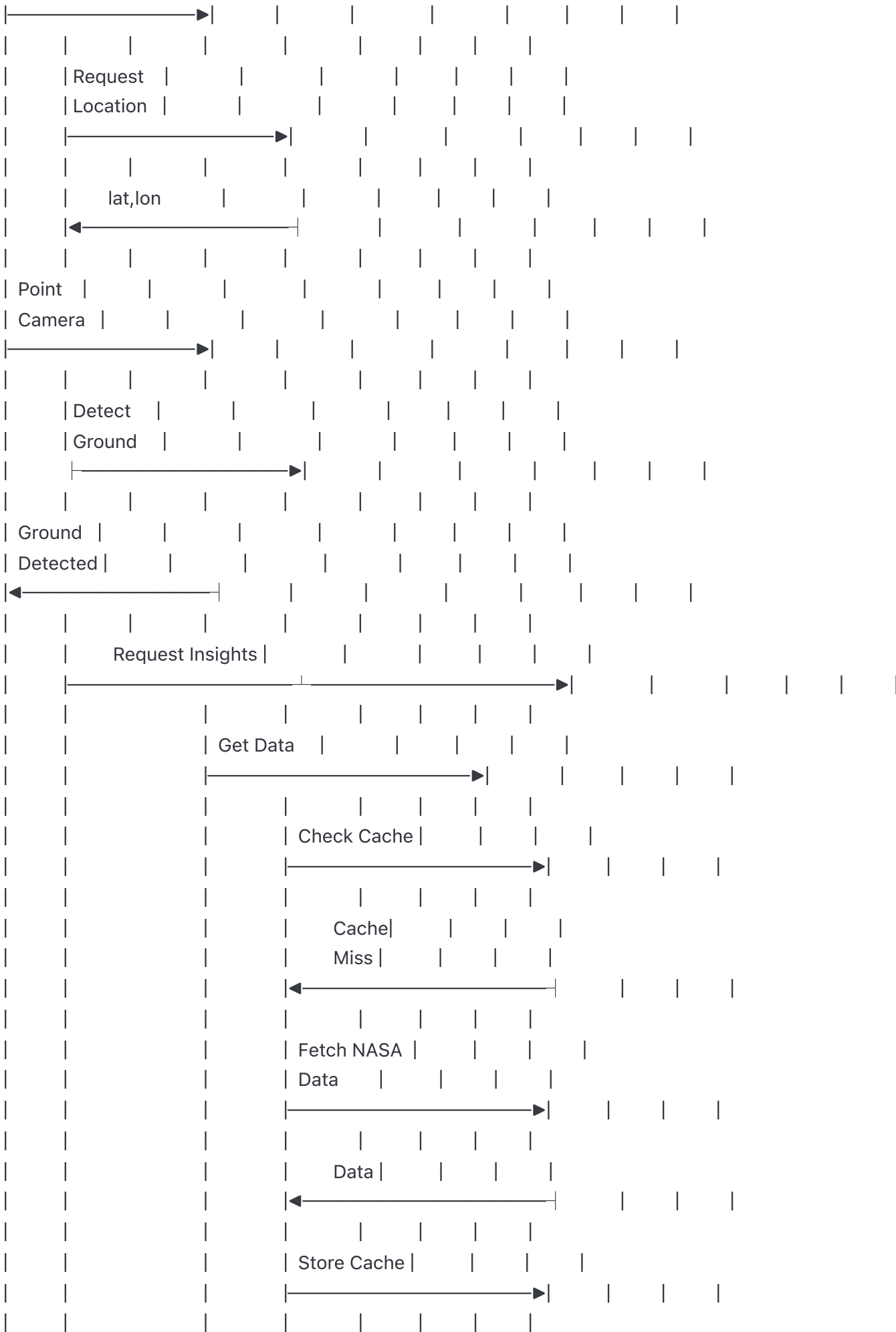


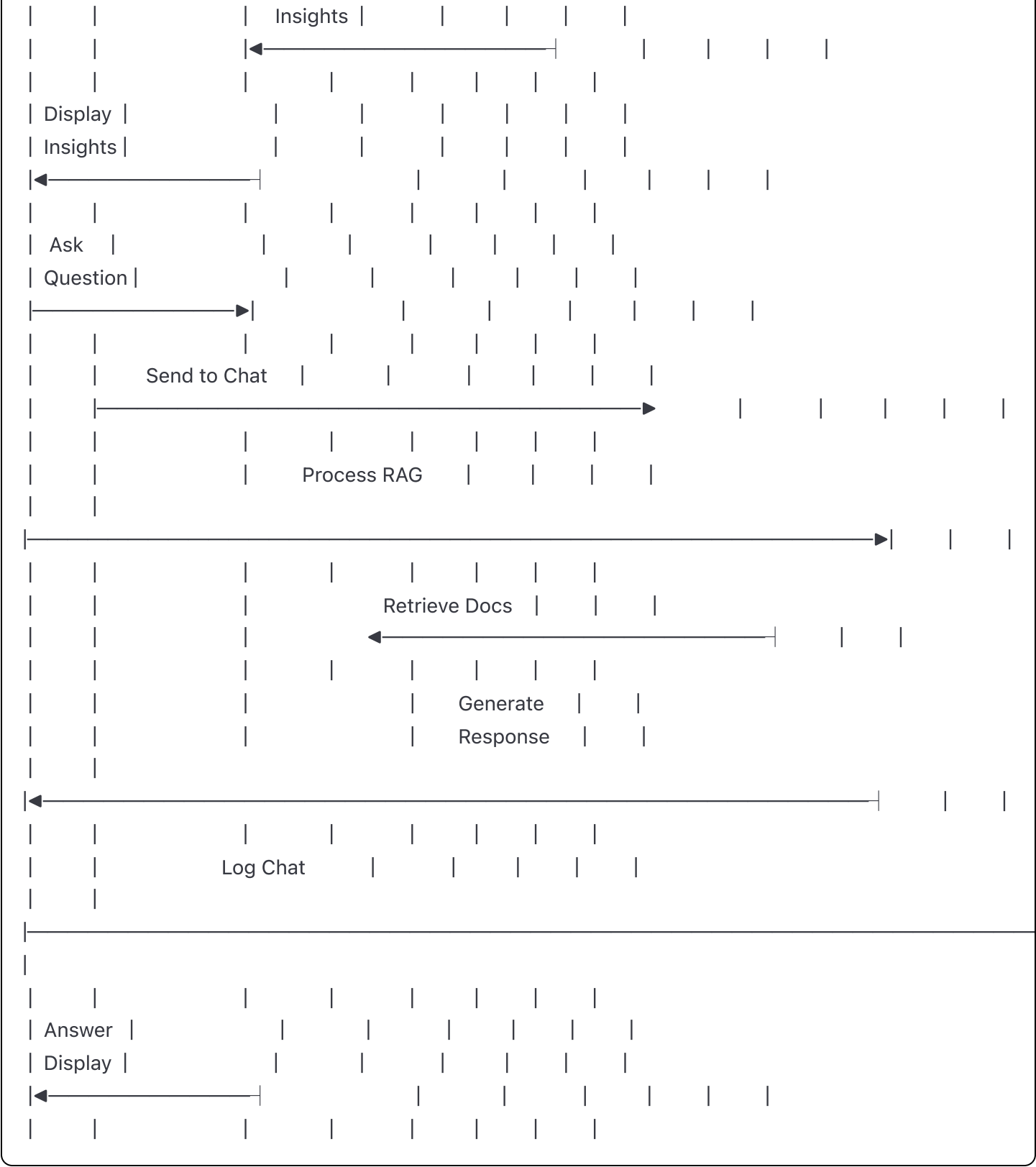




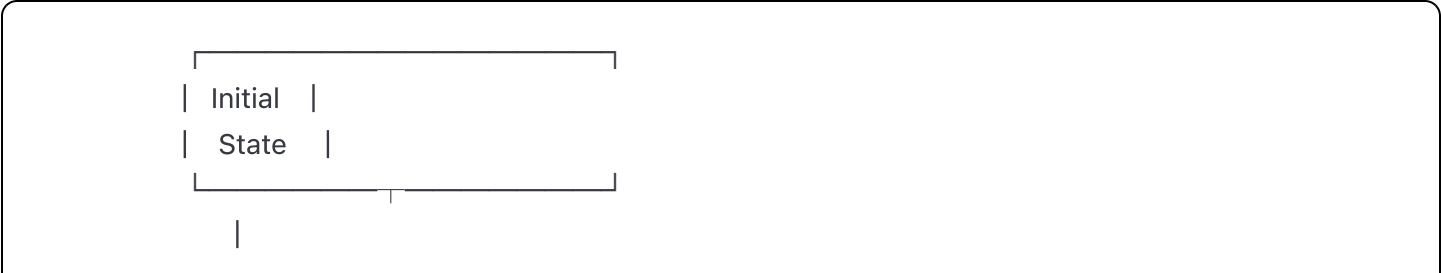
3. Sequence Diagram - Main User Flow







4. State Diagram - Crop Companion



| User selects crop



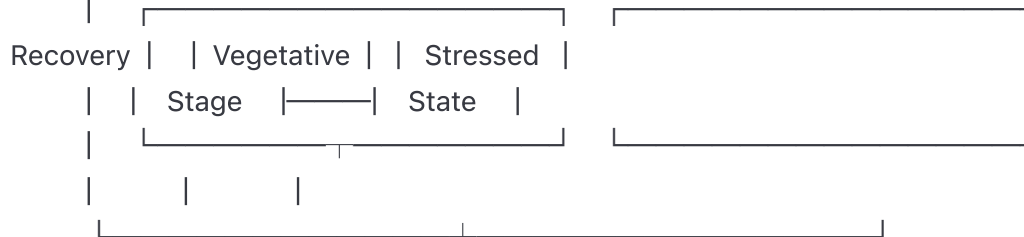
|

| 7 days pass



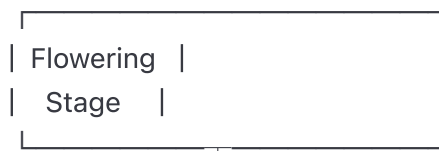
|

| 14 days | Heat stress



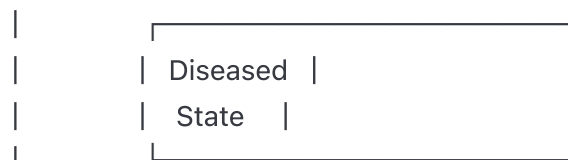
|

| 21 days



|

| 14 days

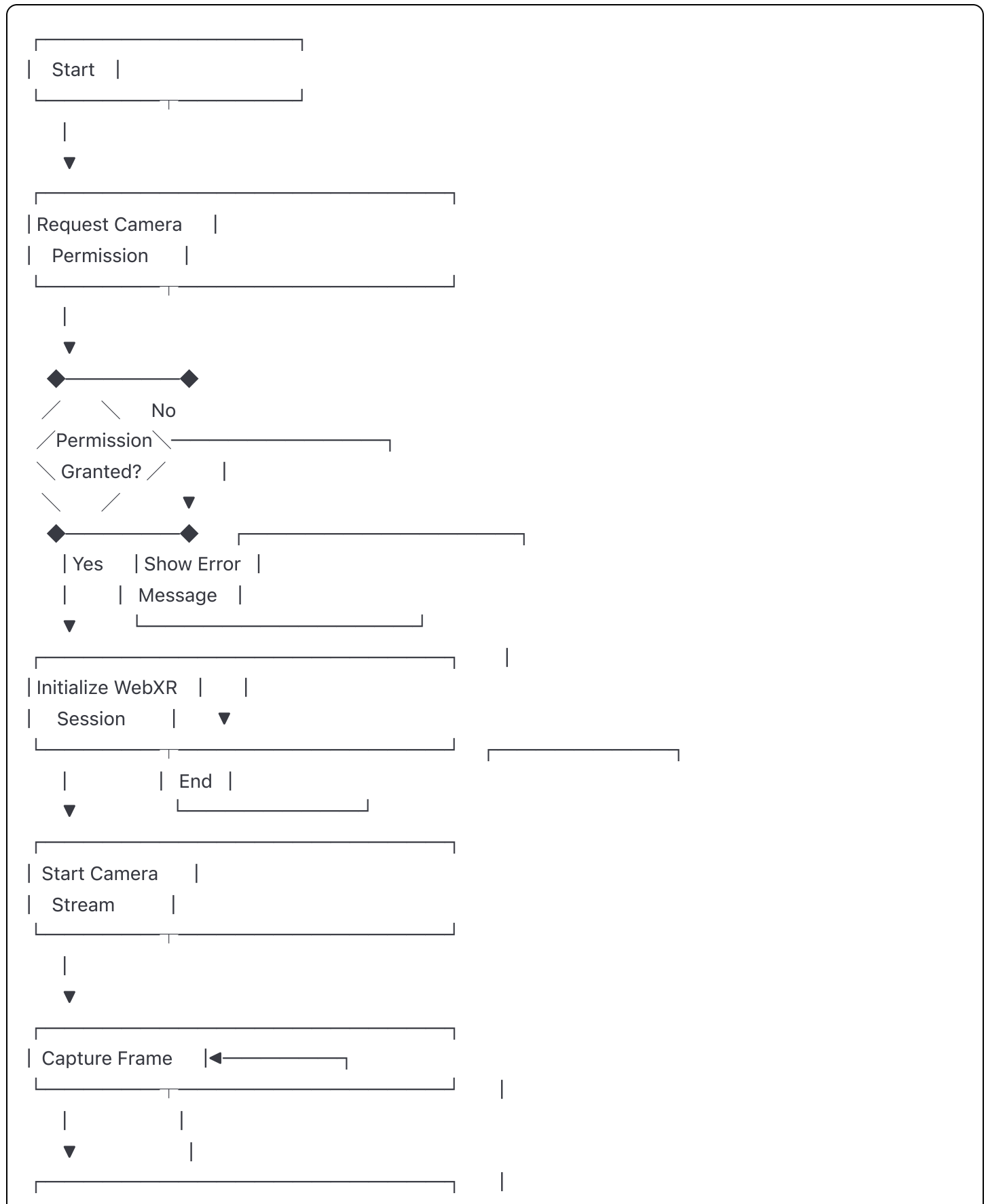


| Harvest ready |

| Treatment



5. Activity Diagram - Ground Detection Flow



| Analyze for Ground | |

| Plane | |



No

/ Ground \

\ Detected? /



| Yes



| Validate Soil |

| Texture |



No

/ Valid \

\ Soil? /



| Yes | Show "Not

| | Soil" Message|



| Calculate Area | |

| Estimate | |



| Enable Features | |

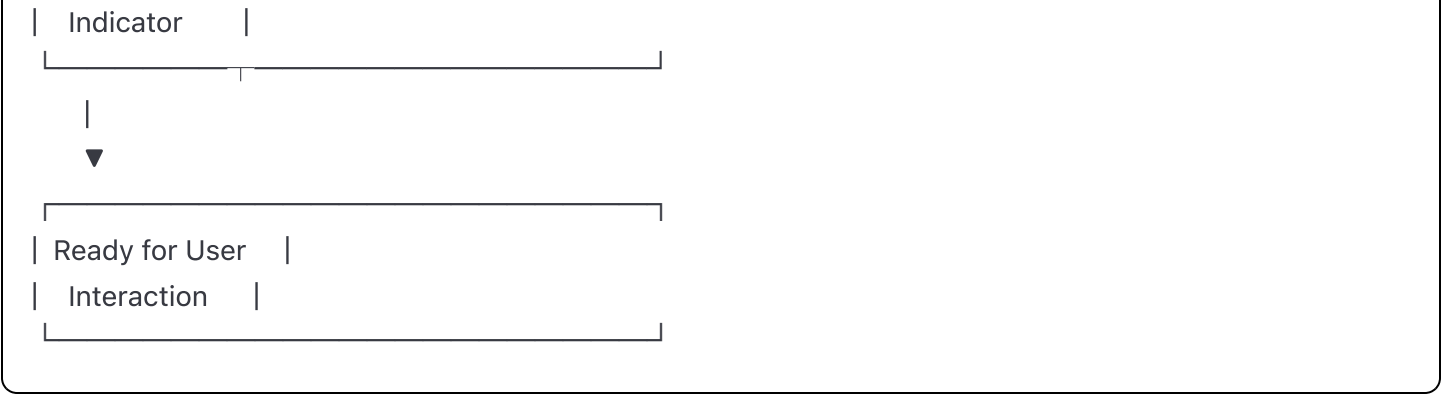
| - Chat | |

| - Insights | |

| - Recommendations | |

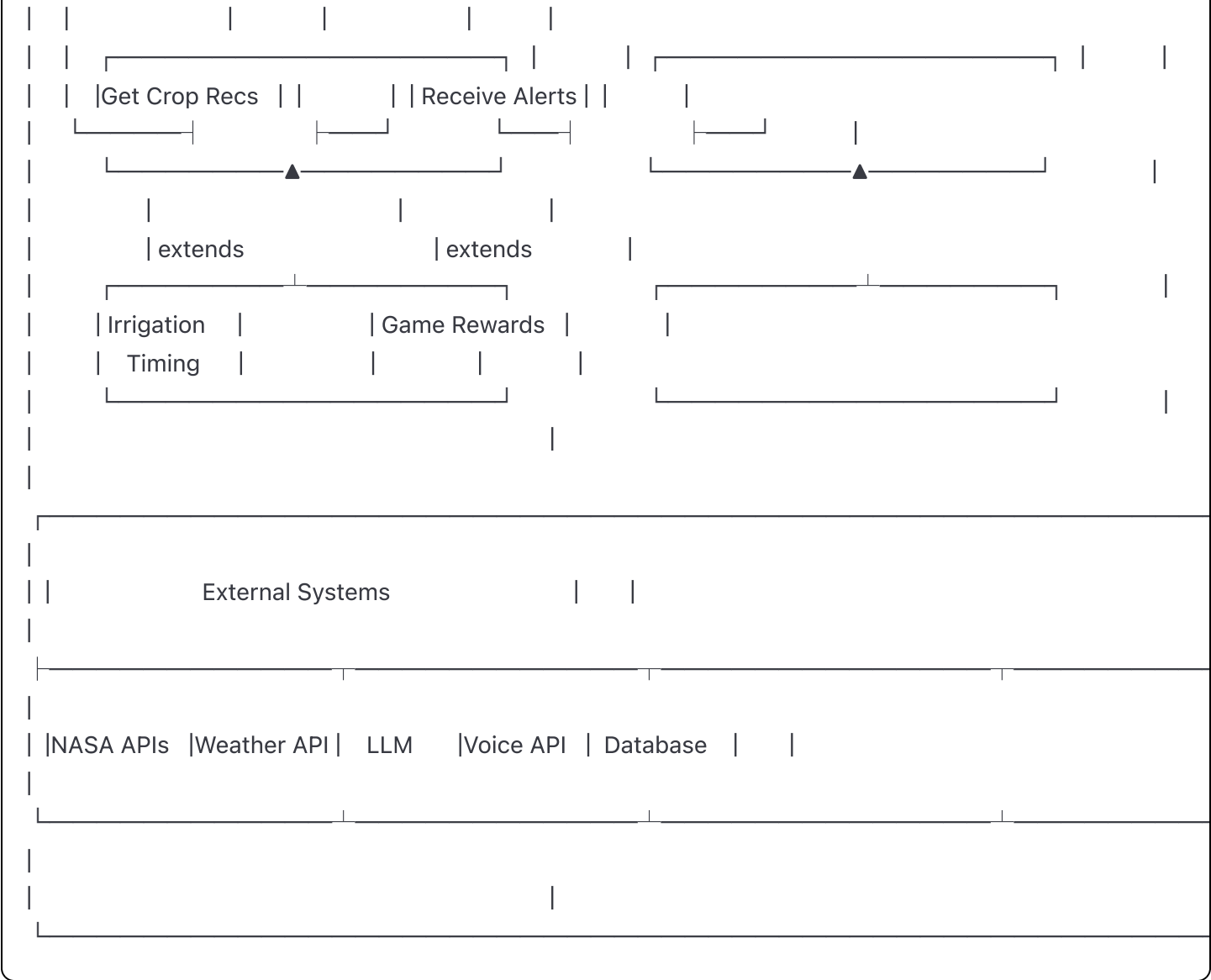


| Display Success | ←

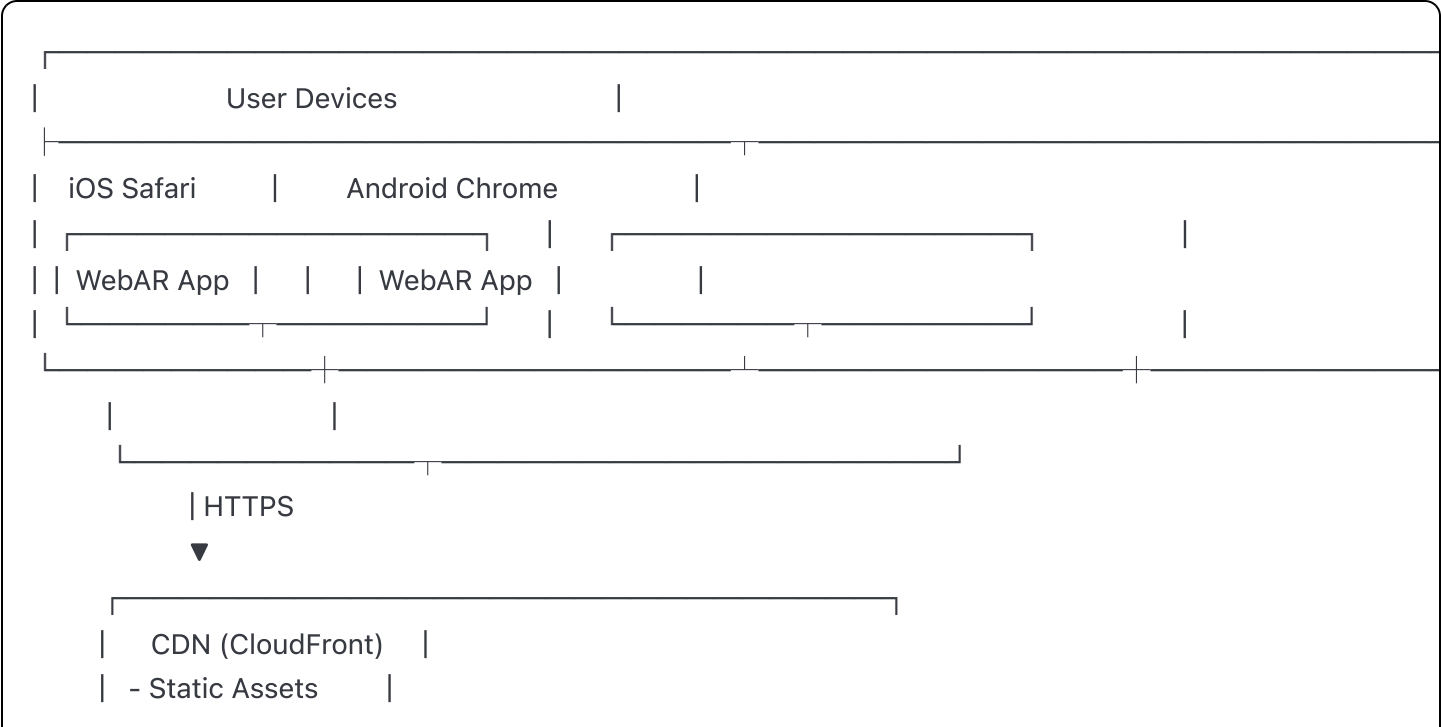


6. Use Case Diagram





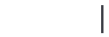
7. Deployment Diagram



| - Cached Responses |



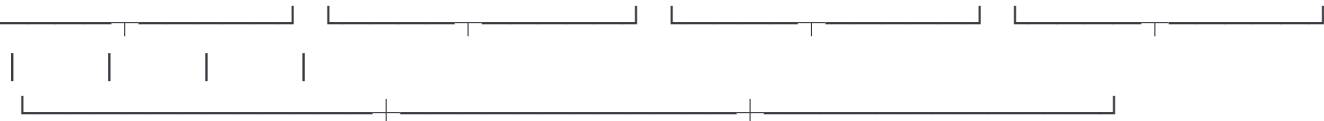
| Load Balancer (ALB) |



Web Server 1		Web Server 2
Node.js		Node.js
- Express		- Express
- WebSocket		- WebSocket



Service		Service		Service		Service
Instance		Instance		Instance		Instance
Python		Python		Node.js		Node.js
DataFusion		RAG		Chat		Companion



Redis		PostgreSQL
Cluster		Primary
Cache		

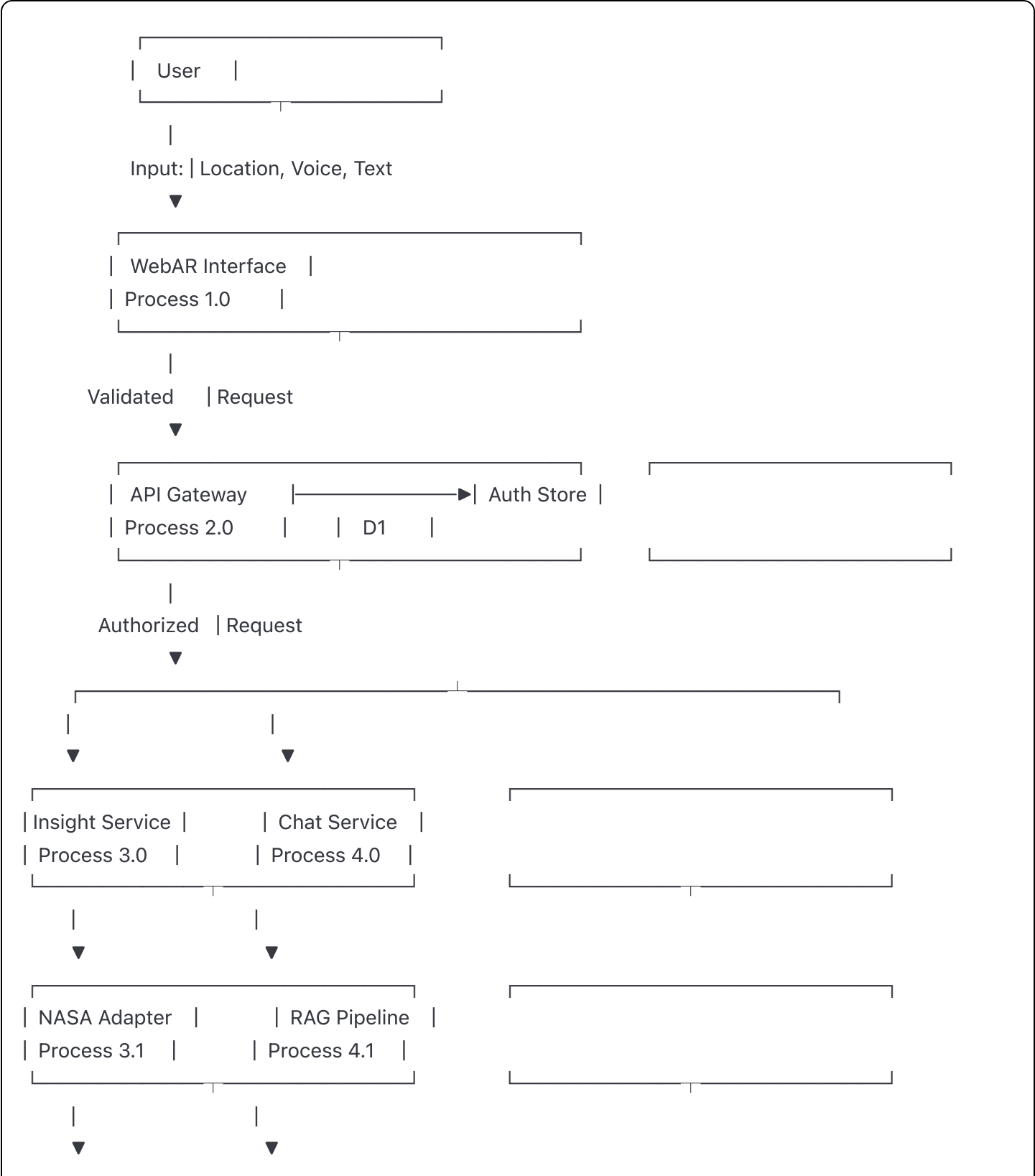


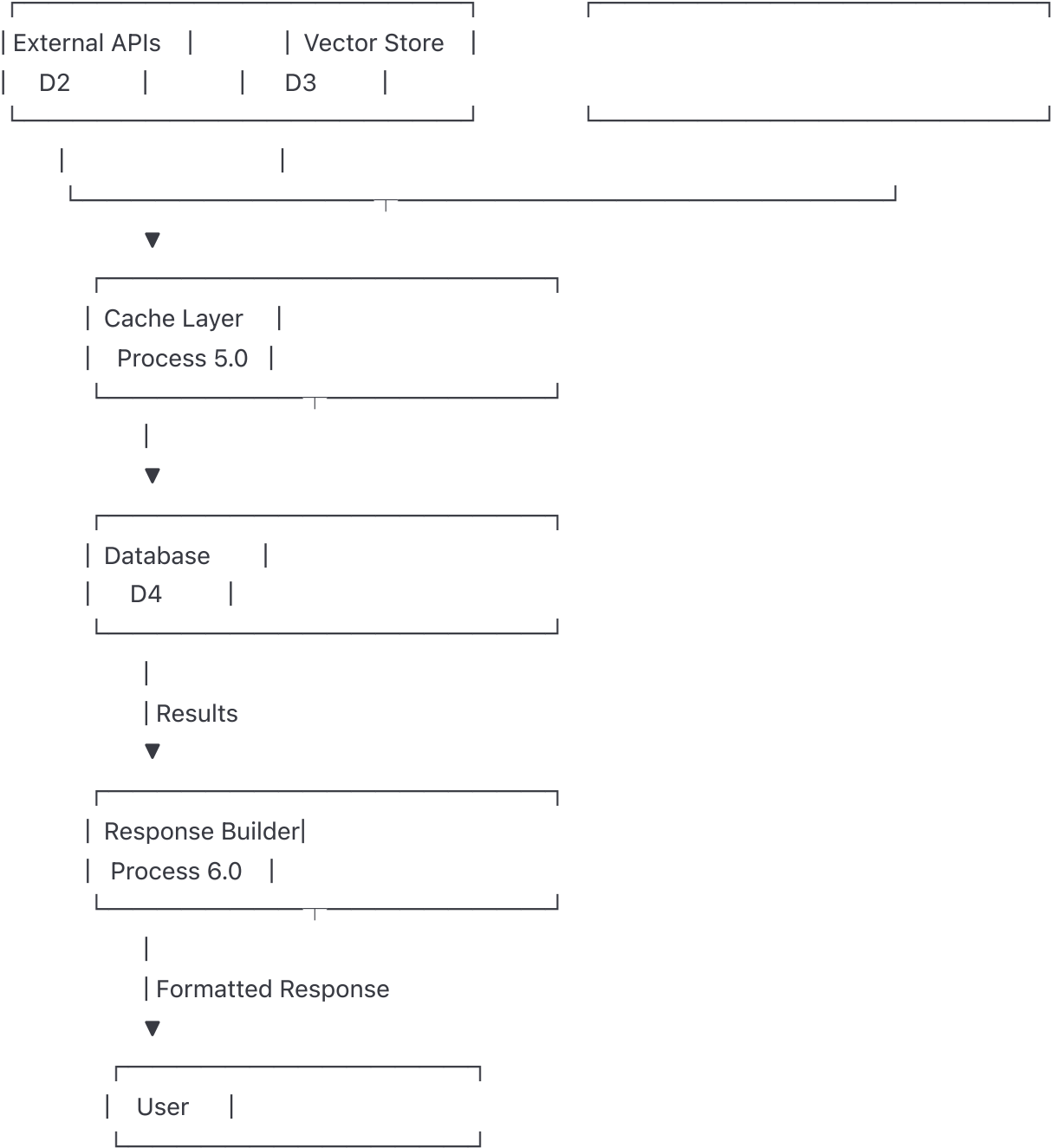
| PostgreSQL |
| Read Replica |

External Services:

NASA APIs	Weather API	OpenAI	Google TTS
- SMAP	OpenWeather	GPT-4	
- MODIS			

8. Data Flow Diagram






Legend:

 = Process

 Dn  = Data Store

 = Data Flow