Software Development Process: Kinnect

Team Name: Kinnect Group
Course: CMSC 355
Professor: Dr. Rodrigo Spínola
Date: September 19, 2025

Team Member:
Silas Revere

The following is an outline of the process I will use, and the responsibilities will take on in order to create the Kinnect application. This information is being outlined so that I will be able to maintain a high standard of organization, quality, and adherence to the task at hand so that I can effectively manage and develop the final product.

Responsibilities:

There are multiple roles and responsibilities that I will have to undertake, which include the following:

Role	Key Responsibilities
Leader	Plans out steps to take regarding project development, overcoming issues, and just generally staying on task
Product Owner	Outlines relevant features/requirements, determines the relevant tasks, and ultimately serves to represent the end-user.
Developer	Writes/maintains source code.
Tester	Generates relevant test-cases, reports any bugs, and makes sure each component of the application is functional and meets requirements.

Development:

I will follow the Agile methodology when managing this project/deliverable components. This means the project will of course be divided into three distinct sprints, each of which will focus on delivering one of the 3 core components of the final application. Each sprint will begin in the

planning stage before moving into the sprint itself, and all tasks will be managed in an ongoing spreadsheet online each of the responsibilities and when each segment of the application is completed.

Tools Utilized:

The following tools will be used throughout the development of the application:

- **Version Control:** Git/GitHub
- **Task Management:** Trello/Jira/GitHub Projects
- **Diagramming & Design:** Graphviz/Google Sheets/Figma
- **Development Environment:**
    - VS Code: Core editor for the project as a whole
    - React: Frontend
    - Node.js: Backend
    - MongoDB/PostgreSQL: Database

Development Workflow:

I will follow the workflow below for every task, so that all code and project components will be thoroughly reviewed and tested before publication.

Status	Task	Description	Feature	Assignee	Sprint	Priority
To Do	Project Setup	Develop the project repository, structure, libraries, etc.	Planning	Dev Team	Pre-Dev	High
To Do	Medication Database Schema Design	Planning/designing the final database structure (formatting for medications, doses, events, etc.).	Planning	Backend Dev	Pre-Dev	High
To Do	Backend API Implementation for Medications	Write code to handle medication data (updating, retrieving, etc.).	Medication Log	Backend Dev	Sprint 1	High
To Do	Adding Medication UI	Build the medication input screen.	Medication Log	Frontend Dev	Sprint 1	Medium
To Do	Medication List UI	Create screen showing a list of every medication	Medication Log	Frontend Dev	Sprint 1	Medium
To Do	Implement of "Mark as Taken"	Add a button for a given medication to be marked as "taken".	Medication Log	Frontend Dev	Sprint 1	High
To Do	Connecting Medication UI to Backend	Connecting medication ui elements to the backend API	Medication Log	Fullstack Dev	Sprint 1	Medium
To Do	Calendar Database Schema Design	Plan the database format and structure for significant events, appointments, etc..	Appointment Calendar	Backend Dev	Sprint 2	High
To Do	Implement Calendar Backend	Create code to add, grab, and manage calendar data.	Appointment Calendar	Backend Dev	Sprint 2	High
To Do	Calendar View UI	Create visual interface for the calendar for seeing and managing appointments	Appointment Calendar	Frontend Dev	Sprint 2	Medium
To Do	Implementation of Appointment details and Summarization	Create an area to input appointment details (location, doctor, etc.).	Appointment Calendar	Fullstack Dev	Sprint 2	High
To Do	Vitals Database Schema Design	Planning of database format and structure for the various metrics (blood pressure, heart rate)	Vitals Tracking	Backend Dev	Sprint 3	Medium
To Do	UI For Appointment Adding	Develop method for users to add new appointment information	Vitals Tracking	Frontend Dev	Sprint 3	Medium
To Do	Implement Vitals Backend	Implement backend functionality to save, store, and update data.	Vitals Tracking	Backend Dev	Sprint 3	High
To Do	Development of Vitals Trend UI	Design a method of vital data input for updated readings.	Vitals Tracking	Frontend Dev	Sprint 3	Medium
To Do	Development of VItals Trend Chart UI	Creation of chart displaying vitals data trending over time.	Vitals Tracking	Frontend Dev	Sprint 3	High
To Do	integration Tests	Verify consistency between front and back end.	Final Testing	QA Engineer	Sprint 3	Low
To Do	User Tests	Run application tests and act on user feedback	Final Testing	QA Engineer	Sprint 3	Medium

Workflow Stages:

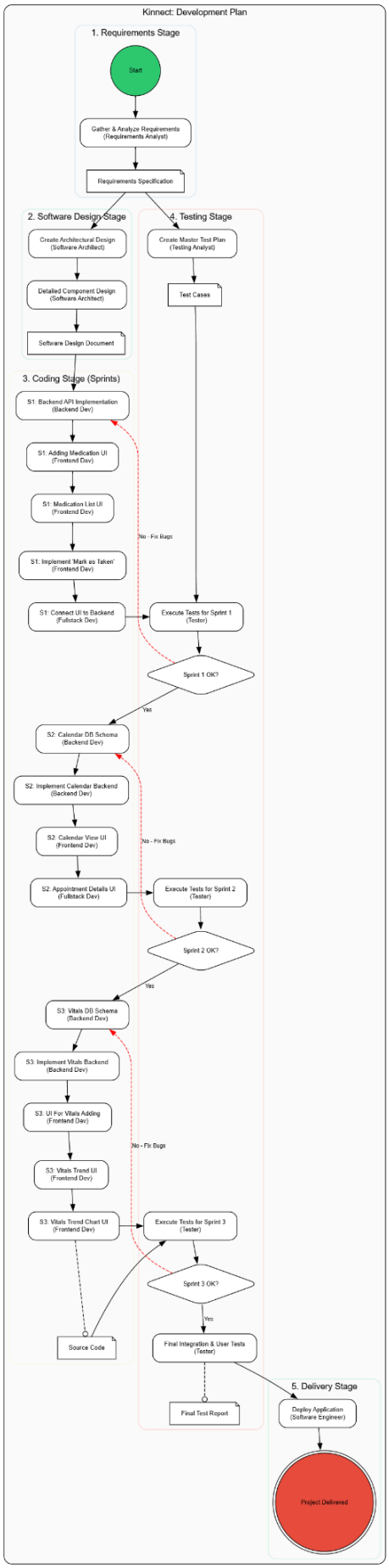
1. **To Do:** What still needs to be done in the sprint

2. **In Progress:** the task is actively being worked on

3. **In Review/Testing:** the task is complete, but code/component still needs to be reviewed and thoroughly tested

4. **Done:** code/component has passed review and testing and is integrated into the main application

Application Development Timeline Diagram:


Kinnect: Development Plan
1. Requirements Stage
Start
Gather & Analyze Requirements (Requirements Analyst)
Requirements Specification
2. Software Design Stage
Create Architectural Design (Software Architect)
Detailed Component Design (Software Architect)
Software Design Document
4. Testing Stage
Create Master Test Plan (Testing Analyst)
Test Cases
3. Coding Stage (Sprints)
S1: Backend API Implementation (Backend Dev)
S1: Adding Medication UI (Frontend Dev)
S1: Medication List UI (Frontend Dev)
S1: Implement 'Mark as Taken' (Frontend Dev)
S1: Connect UI to Backend (Fullstack Dev)
Execute Tests for Sprint 1 (Tester)
Sprint 1 OK?
No - Fix Bugs
Yes
S2: Calendar DB Schema (Backend Dev)
S2: Implement Calendar Backend (Backend Dev)
S2: Calendar View UI (Frontend Dev)
S2: Appointment Details UI (Fullstack Dev)
Execute Tests for Sprint 2 (Tester)
Sprint 2 OK?
No - Fix Bugs
Yes
S3: Vitals DB Schema (Backend Dev)
S3: Implement Vitals Backend (Backend Dev)
S3: UI For Vitals Adding (Frontend Dev)
S3: Vitals Trend UI (Frontend Dev)
S3: Vitals Trend Chart UI (Frontend Dev)
Execute Tests for Sprint 3 (Tester)
Sprint 3 OK?
No - Fix Bugs
Yes
Source Code
Final Integration & User Tests (Tester)
Final Test Report
5. Delivery Stage
Deploy Application (Software Engineer)
Project Delivered