📌 **Why We Chose the Simple Agile Kanban Model**

For our calculator application project, we chose the simple Agile Kanban model because it allows us to work **flexibly**, **visually**, and **collaboratively**. Kanban fits well with the scale of our group and the **iterative nature** of software development. Here's why it's suitable:

1. **Clear Task Management**  
   Kanban boards (GitHub Projects) give us a visual layout of all our tasks, helping everyone see what’s in progress, what’s done, and what needs to be started.
2. **Adaptable and Lightweight**  
   Unlike heavier models like Scrum, Kanban doesn’t require strict sprints or roles, which makes it ideal for a small student team working around class schedules.
3. **Encourages Flow and Focus**  
   By limiting the number of tasks in progress, we can ensure quality and focus on one feature or problem at a time — ideal for managing frontend (GUI) and backend (functions) work in parallel.
4. **Supports Continuous Delivery**  
   We can build the calculator feature-by-feature, testing and refining as we go — great for scientific functions which need accuracy and trial.

📋 **How We Use the Kanban Model**

We'll create a **Kanban board** using **GitHub Projects**, with five main columns:

* **Backlog** – Tasks we need to do
* **To Do** – Tasks we’re ready to start
* **In Progress** – Tasks being worked on
* **Testing / Review** – Tasks ready for testing
* **Done** – Completed tasks

**👥 Role Split**

|  |  |  |
| --- | --- | --- |
| Role | Ummusalmah | Lynn |
| GUI (Tkinter interface) | ✔️ Main | ❏ Support |
| Backend (Calculator logic) | ❏ Support | ✔️ Main |
| Testing and bug fixing | ✔️ Shared | ✔️ Shared |
| Documentation + Meeting Minutes | ✔️ Shared | ✔️ Shared |

🧱 **Task Breakdown in Phase**

**Basic mode Phase**

|  |  |  |
| --- | --- | --- |
| Task | Description | Owner |
| Create number buttons (0–9) | GUI buttons like iPhone layout | Ummusalmah |
| Basic operations: + - × ÷ | Functions and link to buttons | Lynn |
| Display screen | Show inputs/results like iPhone | Ummusalmah |
| Connect input to display | Click to input numbers and see them | Ummusalmah |
| AC / Clear button | Reset screen | Ummusalmah |
| Percent and sign toggle | Like the iPhone % and +/- | Ummusalmah |

**Scientific Mode Phase**

|  |  |  |
| --- | --- | --- |
| Task | Description | Owner |
| Add trig buttons | sin, cos, tan, arcsin, etc. | Lynn |
| Implement scientific functions | Backend math logic | Lynn |
| Add square and sqrt buttons | Extra scientific ops | Lynn |
| Convert between degrees/radians | Toggle mode | Lynn |

**Final Phase**

|  |  |  |
| --- | --- | --- |
| Task | Description | Owner |
| GUI polish | Make it look clean and similar to iPhone | Ummusalmah |
| Test all functions | Make sure outputs are correct | both |
| Fix bugs | Any errors or misbehaviours | both |
| Write meeting summary | Minutes + dev log | both |
| Finalise documentation | README, usage guide | both |

🗂️ **General Task List**

|  |  |  |
| --- | --- | --- |
| **Task** | **Description** | **Owner** |
| Set up GitHub repo + board | Create repo, add README and board | Lynn |
| GUI: Layout with buttons | Build layout using Tkinter | Ummusalmah |
| Basic operations (add, subtract, etc.) | Backend functions | Lynn |
| Scientific functions (sin, cos, etc.) | Backend functions | Lynn |
| Connect GUI to backend | Link buttons to logic functions | Ummusalmah |
| Testing (manual checks) | Test all functions manually | both |
| Fix bugs from testing | Debug any issues | both |
| Final polish of GUI | Style and spacing | both |
| Final documentation | README, usage instructions | both |
| Compile meeting minutes | Summarise and format all meeting logs | both |

📆 **Project Timeline**

|  |  |  |
| --- | --- | --- |
|  | Focus | Outcome |
| 1 | Setup, Kanban board, repo, GUI skeleton | Basic layout and plan ready |
| 2 | Finish basic calculator | Number pad and arithmetic complete |
| 3 | Add scientific features | Trig, square/root, toggle GUI ready |
| 4 | Testing + fix bugs | All functions working smoothly |
| 5 | Final review + submit | Complete, clean iPhone-style calculator |