Progress summary:

This week we have made a lot of progress. We have got our Nordics working. We have established a two way communication wherein initially the node acts as the receiver and base acts a transmitter and then we have the base acting as the receiver and the node acting as the transmitter. This Completes the Nordic part. We have also started controlling the Tank using PWM where the motors are moving at a constant speed.

Weekly goal:

Our primary goal this week was to make the Nordics function and start driving the tank based on PWM. We were unable to achieve this goal in the last few weeks and so we had to get this done which is nearly 70 percentage of our project and we have been successful so far with goals we had to achieve for this week.
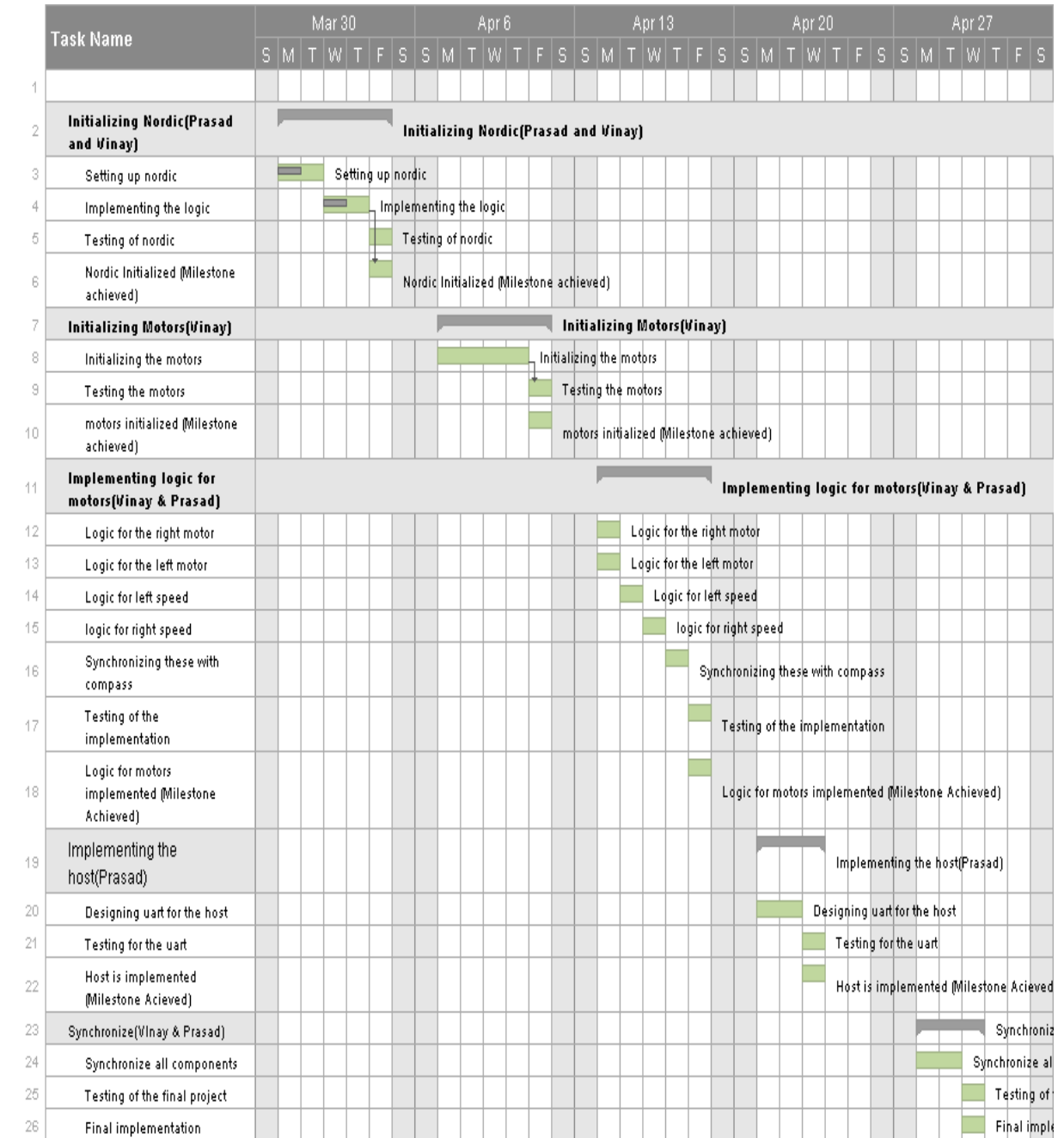
Milestone challenges:

We faced a lot of difficulties this week. Our Nordic was not able to communicate in the initial stages unless we restored the old code with the libraries Professor Bryce had given and it started communicating. It halts in a while loop where it is polling for the interrupt pin to be set. We faced this problem several times during the implementation and each time we had to restore the code which was very time consuming and hindered our progress very badly. The definite reason why this is happening is still unknown to us. The next problem we faced was with compass that we have built using the gyro. Our compass readings were not at all accurate. This was yet another problem we could not realize or did not think over in the initial stages of project development that why it was taking place since our code gave correct results for other boards apart from the board mounted on tank. Then we realized that the reason for the malfunctioning was the motors. The permanent magnets in the motors caused distortion in the x-axis values giving us outliers. So we had a talk with Professor Bryce, and after a careful thought we were able to mount the board at a position where the interference was a little less. This was a component problem and so we are right now working with an error of 5 to 10 degrees. The next part was to integrate motor control with the compass. Although we didn't face much trouble in this section it took us a lot of time to realize how we could actually control the motors.
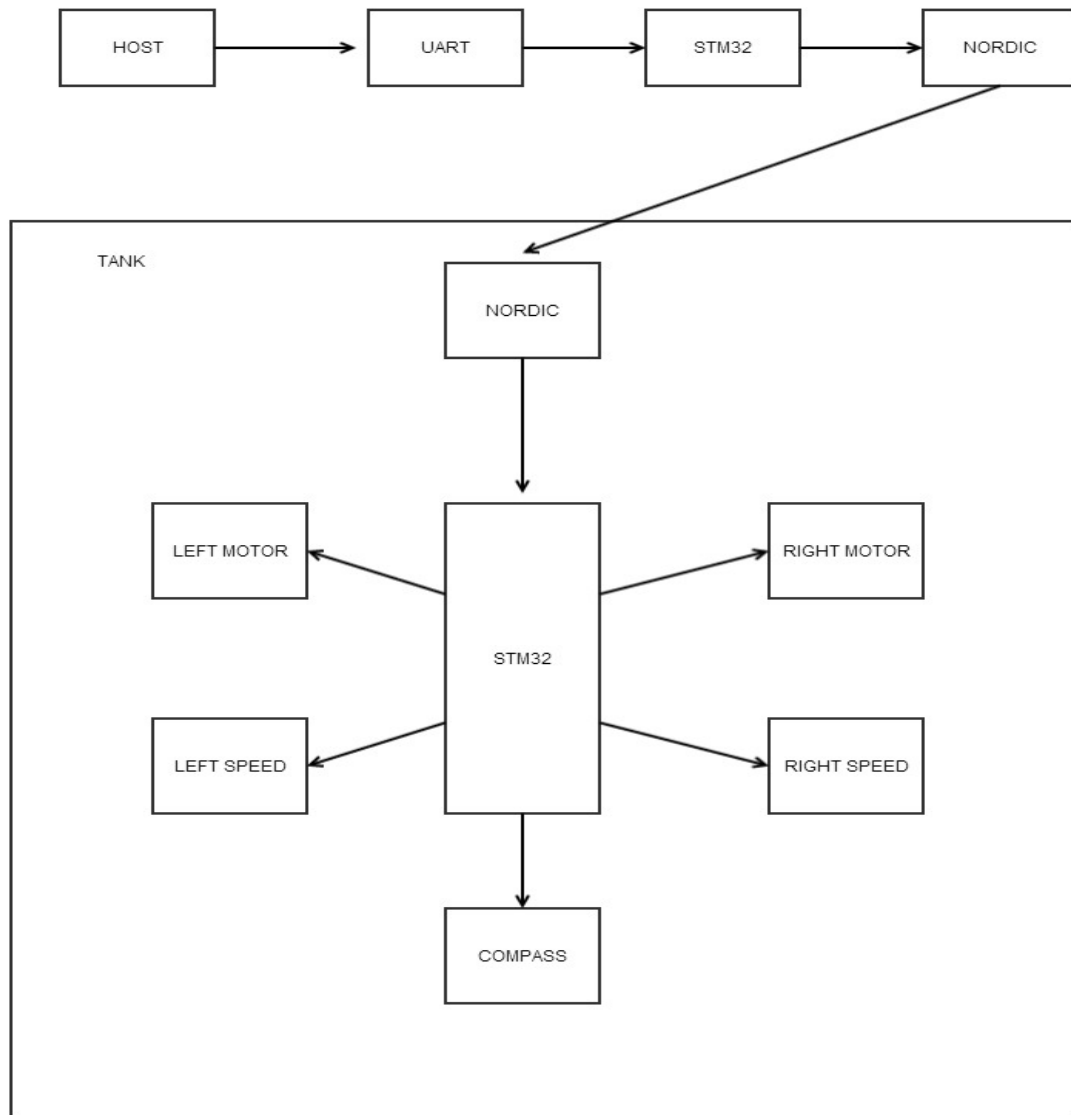
Next week's goal:

Our next week's goal is to clean the code, fix minor programming bugs and then integrate all the modules and deliver a working project.

Updated Milestones:

We have completed all our major Milestones, but for minor programming fixes and we are left with the integration part.

The image is a Gantt chart with the following tasks:

#	Task Name
1	
2	Initializing Nordic(Prasad and Vinay)
3	Setting up nordic
4	Implementing the logic
5	Testing of nordic
6	Nordic Initialized (Milestone achieved)
7	Initializing Motors(Vinay)
8	Initializing the motors
9	Testing the motors
10	motors initialized (Milestone achieved)
11	Implementing logic for motors(Vinay & Prasad)
12	Logic for the right motor
13	Logic for the left motor
14	Logic for left speed
15	logic for right speed
16	Synchronizing these with compass
17	Testing of the implementation
18	Logic for motors implemented (Milestone Achieved)
19	Implementing the host(Prasad)
20	Designing uart for the host
21	Testing for the uart
22	Host is implemented (Milestone Acieved)
23	Synchronize(VInay & Prasad)
24	Synchronize all components
25	Testing of the final project
26	Final implementation

Timeline header: Mar 30, Apr 6, Apr 13, Apr 20, Apr 27 (with S M T W T F S columns)

Blockdiagram:

HOST → UART → STM32 → NORDIC

TANK

NORDIC → STM32

STM32 → LEFT MOTOR

STM32 → RIGHT MOTOR

STM32 → LEFT SPEED

STM32 → RIGHT SPEED

STM32 → COMPASS

Technical Profile:

Category	Design Objective	Deliverable	Status
Power	Battery life	Based on the usage	Completed
Power	Battery availability	Uses commercially available AA batteries or any other batteries	Completed
Communication	Wireless Link	The wireless modules should communicate with each other	Completed
Communication	Tank movement	Device and the host should reliably communicate	Completed
User Interface	Command line access	An interface that will help user to communicate with the device	Completed
User interface	Device updates and information	Relays the status to the user	Completed
Movement	Device moves to the absolute or relative user input angle	Device should turn at the desired angle of rotation	In progress
Mechanical	Environmental	Device should be run under suitable condition	Completed