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Security Infiltration Drone

EG1003 A2

Project Objective

- Security Infiltration Drone (SID)
- Move over a route, scan barcodes to open gates, get data canister
- Deliver canister to point, go to exit

Background Information

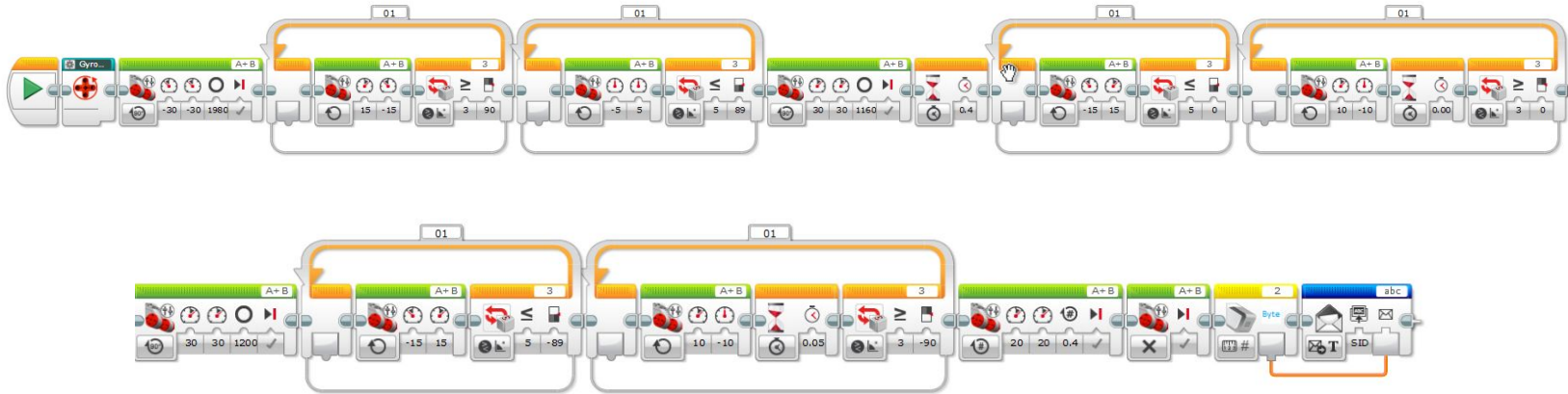
- The Central Intelligence Agency (CIA)
- Requesting a robot to infiltrate building, retrieve data, and exit

Technical Design Description

Uses Gyroscopic sensor to perform 90 degree turns

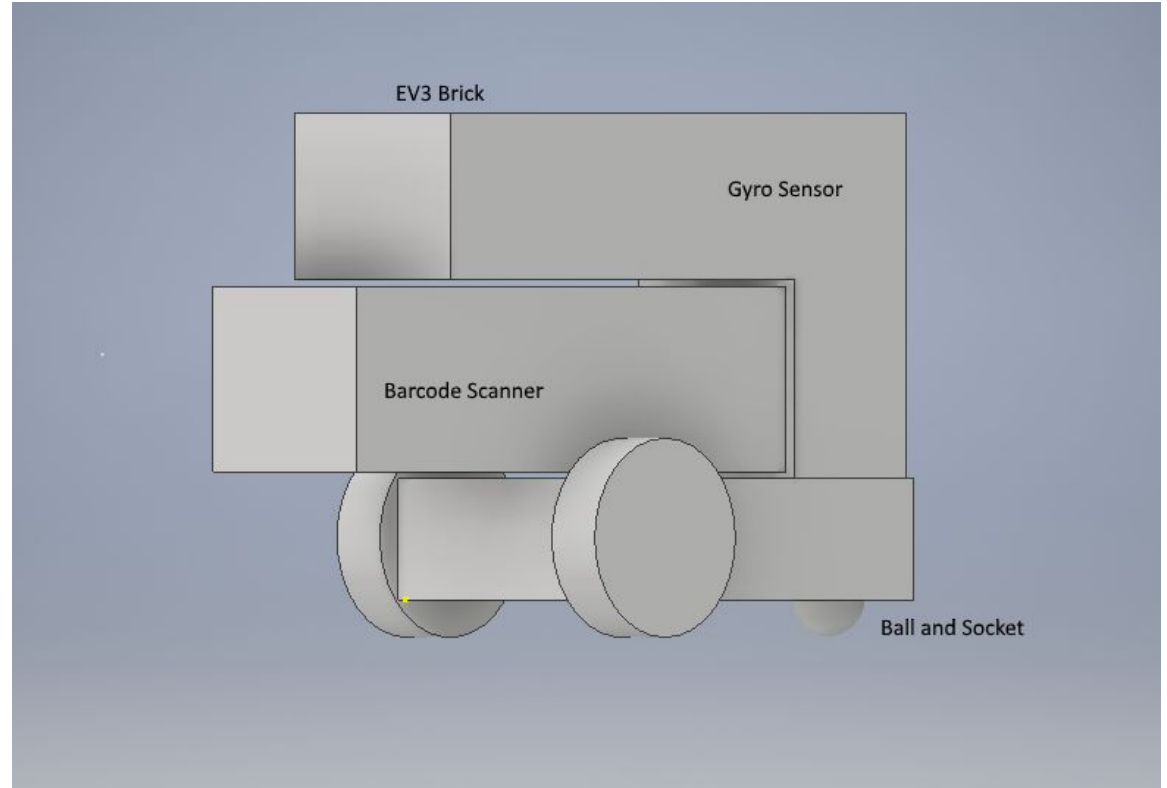
The robot is hardcoded for distance

Tall and slim robot that incorporates barcode reader



Technical Design Description

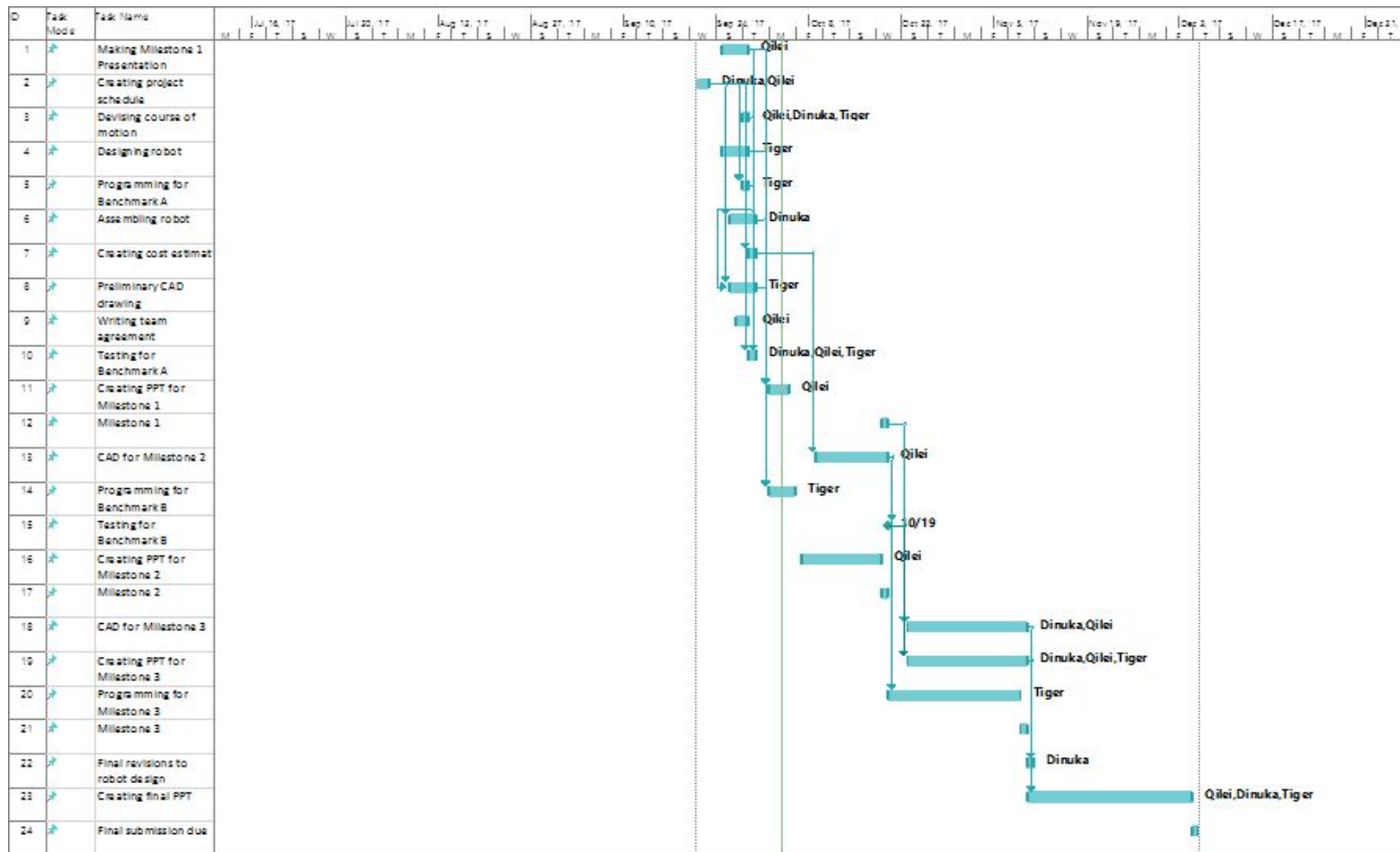
Simplified CAD design



Cost Estimate

| No. | Part No. | Item | Quantity | Unit Cost (USD) | Unit Total (USD) |
|-----|----------|----------------------------------|----------|-----------------|------------------|
| 1 | 1337 | Barcode scanner | 1 | 350 | 350 |
| 2 | 55969 | Electric, Sensor, Light - NXT | 1 | 165 | 165 |
| 3 | 45505 | Electric, Sensor, Gyro – EV3 | 1 | 350 | 350 |
| 4 | 45503 | Electric, EV3 Medium Servo Motor | 2 | 150 | 300 |
| 5 | 45502 | Electric, Motor EV3 | 2 | 218.2 | 436.4 |
| 6 | 6594 | Tyre 49.6 x 28 VR | 2 | 5.1 | 10.2 |
| 7 | | Miscellaneous | | | 20 |
| | | | | | |
| | | Total | | | 1631.6 |

Project Schedule



Teamwork Agreement

- Communications via calling and texting
- Meeting every weekend, or weekdays if needed
- Member misses a meeting: make up the work on their own
- Disputes: everyone makes their case; vote by majority rule if needed
- Responsibilities to be communicated between members
- One fails to complete tasks: others compel them to finish up
- Tiger for programming, Dinuka for mechanical work
- Qilei for testing and all paperwork

Summary

- Benchmark A finished early
- Ahead of schedule
- On budget

Summary (Continued)

- Milestone 2:
- Programming for next two barcodes
- Modify robot design if needed
- More detailed CAD drawing
- Update cost estimate and project schedule if needed

Bibliography

NYU Tandon School of Engineering. 2016. “Security Infiltration Drone.” EG 1003 Online Lab Manual. Accessed October 2, 2017 from egmanual.poly.edu.