January 18, 2016
Meeting 1 of Spring 2016

Quadcopter Project Improvements and Goals

- A maximum of 30 minutes will be spent on coding puzzles each meeting.
- Rotate puzzles and send email with instructions before every meeting to save time.
- Ilya will also take up responsibility for every other task so he can motivate other team members.
- Attendance and commitment is important. Let Ilya know if you can't make it.
- Show up on time.
- Tutorials will be related to the project. If they are not, team members will vote on whether they want to learn that certain topic or not.
- Tutorials should be documented.
- Interview preparation will be in place of the coding puzzles occasionally.
- It would be nice to have a documented GitHub tutorial.
- Quadcopter tutorial should include specs (how much it can carry, battery life, forum research), software only if necessary, and what we can do.
- Goals for this semester:
    - Stable hovering
    - Determine if we need a camera
    - Testing
    - Manipulating inputs/outputs
    - Be better at programming and disassembling code, gain better understanding of software

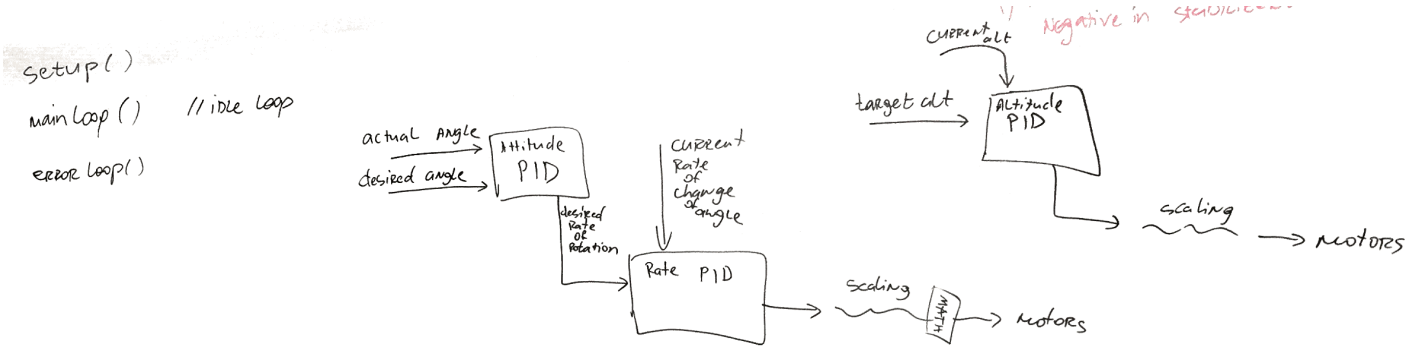
Coding Puzzle

WAP to swap two data values without using a temporary variable.

Program:

```
int main()
{
        int a = 5;
        int b = 3;
        swap(&a, &b);
        printf("%d %d \n", a, b);
}
void swap(int *a, int *b)
{
        *a = *a^*b; // a = 0000 0110, b = 0000 0011
        *b = *a^*b; // a = 0000 0110, b = 0000 0101
        *a = *a^*b; // a = 0000 0011, b = 0000 0101
}
```

Notes



Tasks

- Find out why eulerYawDesired is negative in stabilizer.c *(Mason and Diva)*
- Research on basic concepts of quad before quad tutorial *(Everyone)*
- Logging *(Pat and Mason)*
    - Find a good way to log yaw, pitch, roll (desired)
- Find more ways to capture desired pitch/yaw/roll *(Pat and Diva)*
    - Research on the web
    - Search for something like “autonomous hovering algorithms”
- Figure out how to determine if the quad is stable. *(Everyone)*