GMHS Hornets 4
0246
Greater DC/Virginia

Goals and Tasks for Botball 2019
Game Goals and Tasks
- Lego
  - Gather all water from flood zone and move the water into the water reclaimer inside of the utility zone. (Complete by 2/26/19)
  - Retrieve the gas valve nearest to the utility zone and move it to the utility zone. (Complete by 2/26/19)
  - Push the power lines back into position. (Complete by 2/26/19)
- Create
  - Move firefighters & fire truck into burning medical center/fire station (Complete by 2/20/19).
  - Put ambulance into medical center (Complete by 2/20/19).
  - Put medical supplies into medical center (Complete by 2/20/19).

Robot Building Goals and Tasks
- Lego
  - Build Goals:
    - Build a functioning claw able to open/ close and move up and down (Complete by 2/20/19).
      - Claw will be able to pick up and move the gas valve (Complete by 2/16/19)
      - Claw will be able to push power lines back in place (Complete by 2/16/19).
    - Build a scoop to pick up water from flood zone (Complete by 2/20/19).
      - Scoop will be able to gather water (Complete by 2/11/19).
      - Scoop will be able to move water into reclaimer (Complete by 2/19/19).
    - Build the full body of the robot (Complete by 2/22/19).
      - Robot will be able to push reclaimer into utility zone (Complete by 2/16/19).
      - Robot will be able to follow lines and touch walls to accurately move around the board (Complete by 2/19/19).

- Create
  - Building Goals:
    - Put firefighters in fire station (Complete by: 2/6/19)
      - Build an arm that can push firefighters into fire station (Complete by: 2/5/19)
      - Build the arm so that it can repeat its motion and not scatter the firefighters (Complete by: 2/5/19)
    - Put ambulance in medical center (Complete by: 2/11/19)
      - Build a claw shape that can push the ambulance into the non-burning medical center (Complete by: 2/10/19)
      - Build the claw to a shape that will allow for the objects to stay in the claw (Complete by: 2/10/19)
    - Medical supplies in medical center (Complete by: 2/14/19)
      - Build a claw shape that can push medical supplies into the non-burning medical center (Complete by: 2/13/19)
      - Build a design so that the medical supply will be able to be stack up (Complete by: 2/13/19)

Programming Goals and Tasks

- Lego
  - Create universal forward and turn functions at standard speed (02/01/2019)
    - Forward functions using cm input (02/01/2019)
    - Turn function using degrees (02/01/s)
  - Water Reclamation unit program (02/08/2019)
    - Capture water reclamation unit using some type of holding bay and touch sensor (02/08/2019)
    - Spin water collecting system for predetermined time (02/08/2019)
  - Power Lines program (02/15/2019)
    - Use claw from gas valve to hook up lines (02/15/2019)
    - Just drive back when claw in position to hook up (02/15/2019)
  - Gas valve program (02/22/2019)
    - Take off the gas value using claw mechanism (02/22/2019)
    - Go back to utility zone (02/22/2019)
  - Combine programs into combination program (03/08/2019)
    - Combine programs into final competition program (03/08/2019)
    - Test program profusely (03/08/2019)

- - - Check overall runtime (03/08/2019)
  - Create
    - Write program sketches - while mechanical is building (Due 2/14/19):
      - Place firefighters in fire station (Due 2/4/19)
        - Repeated motion for moving firefighters into station (Due 2/1/19)
      - Place ambulance in the non-burning medical center (Due 2/8/19)
        - Sensor must detect which one is burning (Due 2/5/19)
        - Servo open and closes claw to pick up and place ambulance (Due 2/6/19)
        - Motor lifts and lowers claw (Due 2/7/19)
      - Place medical supplies in the non-burning medical center (Due 2/14/19)
        - Sensor must detect which one is burning (Due 2/11/19)
        - Push all medical supplies in the non-burning medical center by a scoop (Due 2/13/19)
    - Start tests on program and make changes (Start 2/14/19)
      - Run program on field (Start 2/14/19)
      - Make changes as needed (Start 2/14/19)
    - Program must be complete (Due 4/1/19)
      - All program tests complete (Due 3/29/19)
      - All program changes complete (Due 3/29/19)

Documentation Goals and Tasks

- First Period Documentation - 1/30/19
  - Brainstorm game goals - 1/28/19
  - Brainstorm methods of completing the game goals - 1/29/19
- Second Period Documentation - 2/27/19
  - Work with programmers to upload the code to GitHub - 2/22/19
  - Create a script for the mechanical video - 2/22/19
- Third Period Documentation - 4/3/19
  - Survey the team about the challenges faced during the project - 3/29/19
  - Submit the final code to GitHub - 4/1/19

Schedule Conflicts

- Two Hour Early Dismissal - 2/15/19

- President's Day - No School - 2/18/19
- Two Hour Early Dismissal - 3/1/19

Team Organization
- Meetings
  - January - 30th
  - February - 1st, 4th, 6th, 8th, 11th, 13th, 15th, 20th, 22nd, 25th, 27th
  - March - 1st, 4th, 6th, 8th, 11th, 13th, 15th, 18th, 20th, 22nd, 25th, 27th, 29th
  - April - 1st, 3rd, 5th
- Division of Labor
  - Team Leader: Benji
  - Lego Programmers: Junhua, Ryan
  - Lego Building: Tim, Benji
  - Create Programmers: Jarrett, Kate
  - Create Building: Eminy, Alexis
- Conflict Resolution
  - When team members come to a disagreement, the team leader will mediate the argument, and help come to a compromise.
  - Team members should remember that it is not personal and they need to keep it civil.
  - If there is a team wide disagreement the issue can be put to a vote, with team lead as the tiebreaker.