Goals and Tasks for Botball 2019
1. Game Goals and Tasks
    a. Copy and print separate rule sets for each member to keep
        i. (Due Date- 2/2/19)
    b. Make sure that everybody knows what is considered illegal and legal in the game.
        i. (Due Date- 1/31/19)
2. Goals needed to complete
    a. Lego
        i. Get gas valve
        ii. Collect citizens on skywalk to Disaster Relief Zone (DRZ) (3*20=60pts)
            1. Push water reclamation unit into utility zone while walking back.
                a. (Due Date- 2/18/19)
        iii. Places gas valve on PVC pipe
            1. (Due Date- 2/27/19)
        iv. Connect the power lines (100) then walks back to grey lines
            (Due Date-2/18/19)
        v. Push four medical supplies into DRZ (16pts) (Due Date- 2/25/19)
        vi. Push four food supplies with water on top into DRZ (80pts) (Due Date- 2/25/19)
        vii. Wait for fifteen seconds
        viii. Goes to flood zone and retrieves injured people underneath the skywalk. (Due Date- 3/1/19)
        ix. Pushes people into non-burning medical zone (Due Date- 3/7/19)
    b. Create
        i. Fire trucks to the flood zone (50) (Due Date- 2/18/19)
        ii. Take firefighters out of pole and into firehouse (20) (Due Date- 2/25/19)
        iii. Firefighters onto medical center (100) (Due Date- 2/22/19)
        iv. Use igus chain to put water on the burning building (200) (Due Date- 2/25/19)
        v. Rescue mayor/or botguy from burning building and into disaster relief zone (100) (Due Date- 2/25/19)
        vi. Push water to the opposite side and into the utility zone, then into the water reclamation unit. (12*10*2=240) (Due Date- 2/22/19)

    c. Total Points
        i. 996 points

Robot Building Goals and Tasks
1. Create a Drawing of the Create and LEGO Robots
    a. Make a labeled drawing of the Create robot with the arm, ignus chain and collection blade attached and determine positioning of components

i.   (Due Date- 2/4/19)
          b.   Make a labeled drawing of the LEGO robot with the arm and bucket and
               determine positioning of components
                    i.   (Due Date- 2/5/19)
     2.   Construction of the Create Robot
          a.   Fire trucks to flood zone
                    i.   Use the arm to grab the the fire trucks from the fire station and to the
                         flood zone
                              1.   (Due Date- 2/18/19)
          b.   Take firefighters out of pole and into firehouse
                    i.   Use the arm to grab the firefighters out of the fire station
                              1.   (Due Date- 2/25/19)
          c.   Firefighters onto medical center
                    i.   Use the arm to place the firefighters onto the top of the medical center
                              1.   (Due Date- 2/18/19)
          d.   Large water container onto burning building
                    i.   Pick up the large water container with the arm and place it onto the top of
                         the burning building
                              1.   (Due Date- 2/18/19)
          e.   Rescue mayor and/or botguy from burning building and into the disaster relief
               zone
                    i.   Use the igus chain to rescue the mayor and/or botguy from the burning
                         building and into the disaster relief zone
                              1.   (Due Date- 2/18/19)
          f.   Push water to the opposite side and into utility zone
                    i.   Use the plate to push all of the water, food and medical supplies to the
                         side and into the utility zone
                              1.   (Due Date- 2/25/19)
     3.   Construction for the Lego Robot
          a.   Get gas valve. Places gas valve on PVC pipe. Connect the power lines. Collect
               Injured citizens
                    i.   Construct claw to lift up and down, open and close, as well as rotate 90
                         degrees
                              1.   (Due Date: 2/10/19)
          b.   Push four medical supplies into DRZ (16pts) Push four food supplies with water
               on top into DRZ. Goes to flood zone and retrieves injured people underneath the
               skywalk. Pushes people into non-burning medical zone
                    i.   Construct a flat arm that lifts and lowers, with a hook on the end. When
                         lowered, it is flat (vertically perpendicular to the surface) and pushes
                         objects without disturbing the state they are in.
                              1.   (Due Date 2/25/19)

Programming Goals and Tasks
     1.   Sensors
          a.   Use the camera to sense which building are burning or not.
                    i.   (Due Date- 2/15/19)
          b.   Use the camera to identify which building has botguy on top and which building
               has the mayor on top.

   i. (Due Date- 2/20/19)
2. Lego
  a. Program the robot to move to the gas valve, pick it up with the claw, and move back to the utility zone, pushing the water reclamation unit into the utility zone.
   i. (Due Date- 2/18/19)
  b. Turn the robot and move to the gas valve pvc pipe.
   i. (Due Date- 2/27/19)
  c. Turn the robot to place the gas valve on the pvc pipe.
   i. (Due Date- 2/27/19)
  d. Move to the power line and lift the washer to the magnet using the hooked arm.
   i. (Due Date- 2/27/19)
  e. Use the arm to push food and medical supplied into the Disaster Relief Zone.
   i. (Due Date- 3/1/19)
  f. Move to the flood zone to use the hook to collect citizens off of the skybridge, collecting them in the designed bucket and carry them to the Disaster Relief Zone.
   i. (Due Date- 3/1/19)
  g. Collect the citizens under the skybridge using the hook and push them to the medical center.
   i. (Due Date- 3/7/19)
3. Create
  a. Program a camera to recognize the firetruck. Once in range, pick up the firetruck with the claw and bring it to the flood zone, using the camera to find the burning building.
   i. (Due Date- 2/18/19)
  b. Return back to the firehouse with the line follower tracking the middle line to the medical center, and turning into the firehouse with encoders. Track the firefighters with the camera, and use the claw to take them out of the firepole.
   i. (Due Date- 2/18/19)
  c. Pick up the third firefighter, bring it to the burning medical building, recognizing the burning medical buildild with the camera. Once it reaches the burning medical center, raise the claw and put the firefighter on top, repeat for another firefighter.
   i. (Due Date- 2/27/19)
  d. Pick up the big water block using the camera and claw, bring it to the burning skyscraper with the camera recognizing the burning skyscraper.
   i. (Due Date- 2/27/19)
  e. Raise the camera to look at the tops of the skyscrapers, if it sees either the mayor or botguy, grab them and take them back to the disaster relief zone.
   i. (Due Date- 2/27/19)
  f. Start at the middle line, at the medical center, and move, facing the water pom poms, and push them onto the other side of the board.
   i. (Due Date- 3/1/19)
  g. Bring the water to the water reclamation unit, which will have a known location, and pick up the pom poms, and dump them into the reclamation unit.
   i. (Due Date- 3/7/19)

Documentation Goals and Tasks
1. Complete the First Period Documentation
   a. Assign tasks of programmers and builders for each robot decide on goals of each robot
      i. (Due Date- 1/28/19)
   b. Programmers and builders work together to decide on paths of both robots
      i. (Due Date- 1/29/19)
   c. Team leader assigns each member a section of the P1 Project Plan to complete
      i. (Due Date- 1/29/19)
2. Complete of Second Period Documentation
   a. Builders will create a video explaining the design of both robots, as well as explaining how different components were tested.
      i. (Due Date- 2/24/19)
   b. Programmers will create a Github account and create at least one commit.
      i. (Due Date- 2/24/19)
3. Complete of Third Period Documentation
   a. Programmers will make sure that the Github account is created and that at least one commit is present
      i. (Due Date- 4/1/19)
   b. Programmers also ensure that at least one pull request has been made to the repository
      i. (Due Date- 4/1/19)
   c. All members meet to discuss and create the Lessons Learned document
      i. (Due Date- 4/2/19)

Schedule Conflicts	Deadlines
2 hour Early Dismissal, Professional Responsibilities	02/15/2019
Presidents Day, No School	02/18/2019
2 hour Early Dismissal, End of Interim Period	03/01/2019
After school sports starting March 1st, Most students unavailable after school.	03/01/2019 - 4/06/2019

Team Organization
1. Meetings
   a. Mondays, Wednesdays and Fridays are the typical in class meetings that are planned.
   b. After-school meetings will be scheduled as needed in order to meet the determined deadlines.
2. Group Division - groups are divided in this manner so that the two teams can work around each other in an organized manner and to fulfill our goals on time. Teams will work on their assigned parts simultaneously to get as much done in a short amount of

time so that we can then regroup and test.
- a. Team Leader: Julia Wright
- b. Lego
    - i. Programmers
        1. Sausan Rahman
        2. Julia Wright
    - ii. Builders
        1. Chloe Cable
        2. Sean Davis
- c. Create
    - i. Programmers
        1. Anthony Walsh
        2. Dylan Hoschar
    - ii. Builders
        1. Kaitlyn Sokoloff
        2. Julia Wright