Qatar

Thermonuclear Falcons
18-0288

Qatar

Goals and Tasks for Botball 2019

1. **Game Goals and Tasks**
    a. **Divide team into focused sub-teams** — *3rd Dec*
        i. Leaders discuss to understand team structure — *3rd Dec*
        ii. Team discusses sub-team structure — *3rd Dec*
        iii. Team breaks up and start work in sub-teams — *3rd Dec*
    b. **Create game strategies for robots** — *5th Dec*
        i. Attend workshop — *30th Nov-Dec 1st*
        ii. Gather relevant documents — *3rd Dec*
        iii. Go over scoring sheets and game rules — *3rd Dec*
        iv. Leaders and team discuss to evaluate most effective strategy — *5th Dec*
    c. **Complete construction of game board** — *13th Dec*
        i. Make list of all required materials — *3rd Dec*
        ii. Obtain all required materials — *4th Dec*
        iii. Remove pieces from last year's game board — *4th Dec*
        iv. Construct game board — *5th Dec*
        v. Add extra pieces (tape, cars, etc) — *5th Dec*
        vi. Mark out locations for game pieces — *8th Dec*
        vii. Lay out game pieces (planters, poms, etc) — *8th Dec*

2. **Robot Building Goals and Tasks**
    a. **Prototype mechanisms for robots** — *7th Jan*
        i. Design and prototype claw mechanism for Create — *7th Jan*
        ii. Design and prototype camera and sensor mount for Demobot — *7th Jan*
        iii. Design and prototype scooping mechanism for Demobot — *7th Jan*
    b. **Complete construction of Demobot** — *25th Jan*
        i. Create the base of the Demobot — *30th Nov*
        ii. Add and refine mechanisms — *20th Jan*
        iii. Test and finalise construction — *25th Jan*
    c. **Complete construction of Create** — *20th Jan*
        i. Attach lifting mechanism to Create — *10th Jan*
        ii. Add necessary sensors — *15th Jan*
        iii. Test and finalise construction — *20th Jan*

3. **Programming Goals and Tasks**
    a. **Write base code for robots** — *30th Nov*
        i. Plan code for needed functions — *25th Nov*
        ii. Write base code for both robots (motors, servos, etc) — *27th Nov*
        iii. Write base code for Create and Demobot (movement, direction, etc) — *29th Nov*
        iv. Write tournament base code (wait_for_light, shut_down_in, etc) — *30th Nov*
    b. **Write code for Demobot** — *30th Jan*
        i. Implement tournament base code — *10th Dec*
        ii. Use base code to prototype Create behaviour — *7th Jan*
        iii. Implement game plan in code — *10th Jan*
        iv. Refinements and fixes — *28th Jan*
    c. **Write code for Create** — *30th Jan*
        i. Implement tournament base code — *10th Dec*
        ii. Use base code to create functions for Demobot's mechanisms — *10th Jan*
        iii. Implement game plan in code — *12th Jan*
        iv. Refinements and fixes — *28th Jan*

4. **Documentation Goals and Tasks**
    a. **Complete Period One Documentation** — *28th Dec*
        i. Discuss with team for details — *13th Dec*
            1. *Schedule Conflicts*
            2. *Division of Labour*
            3. *Conflict Resolution*
        ii. Formulate basic timeline for Goals and Tasks — *13th Dec*
        iii. Discuss meeting times — *13th Dec*
        iv. Compile information and finalise report — *27th Dec*
    b. **Complete Period Two Documentation** — *18th Jan*
        i. Mechanical Systems — *15st Jan*
            1. Gather images of necessary parts — *10th Jan*
                a. *Drivetrain*
                b. *Effector*
                c. *Sensor Mount*
            2. Design and plan experiment for mechanical systems — *10th Jan*
            3. Carry out experiment — *10th Jan*
            4. Graph, analyse and evaluate experimental data — *11th Jan*

5. Modify and justify changes to system *13th Jan*
6. Compile information and finalise report *15th Jan*

ii. Code Review *15th Jan*

1. Compile best practices *10th Jan*
2. Code Review *11th Jan*
    a. *Reliability*
    b. *Maintainability*
    c. *Effectiveness*
3. Modify and justify changes to code *11th Jan*
4. Compile information and finalise report *15th Jan*

c. Complete Period Three Documentation *26th Jan*

i. Take survey with team *22nd Jan*

ii. Discuss with team to get advice *22nd Jan*

1. *Experience Gained*
2. *Documentation Process*
3. *Surprises*
4. *Advice for Future Teams*

iii. Compile information and finalise report *23rd Jan*

5. Schedule Conflicts

a. Mock Exams (all the 12th graders will be occupied) *13th-17th Jan*
b. Destination Imagination (our coach and some members will not be available) *All Wednesdays*
c. THIMUN Qatar 2019 (over half of the team will be unavailable) *22nd-25th Jan*
d. SumoBot (our coach and some younger members will be busy) *All Sundays*

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Team Organisation

Schedule of Meeting Times

- Regional Workshop - *November 30th & December 1st, 2018*
- Weekly Meeting Days- *Every Monday from 2:00 pm to 3:30 pm (but all members are required to work on their tasks during their own spare time)*
- Extended Meeting Days - *Dates: January 19th, 26th and February 2nd, 7th of 2019. Time: 9:00 am to 2:00 pm. (these meetings occur when we're near the competition date and feel that we need more time to work on our tasks)*
- Regional Tournament - *February 8th, 2019*

December

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
31						

January

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

Key

- **Workshop**
- **Botball Tournament**
- **Meeting Day (2:00 pm - 3:30 pm)**
- **Extended Meeting Day (9:00 am - 2:00 pm)**
- **Holiday**

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Division of Labour

<table>
<tr><td colspan="3">Coaches:
Jason Maraku
Rosalia Cha</td></tr>
<tr><td>Building</td><td>Documentation</td><td>Programming</td></tr>
<tr><td>Max (Building Leader)</td><td colspan="2">Ziad (Overall and Programming Leader)</td></tr>
<tr><td>Saif</td><td colspan="2">Oroni</td></tr>
<tr><td colspan="2">Venika</td><td>Maytham</td></tr>
<tr><td>Malak</td><td rowspan="5"></td><td>Juntae</td></tr>
<tr><td>William</td><td>Rushan</td></tr>
<tr><td>Hassan</td><td>Amr</td></tr>
<tr><td>Ali</td><td>Waddah</td></tr>
<tr><td>Fatima</td><td></td></tr>
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Our team is divided into three basic subcategories: the programming team, the documentation team, and the building team. This is to ensure that specific tasks are able to be completed efficiently by people with the necessary skills. Yet, these roles are not rigid; some people from the documentation team may help with building or some from the programming sector may help with documentation, which is beneficial as it provides different perspectives and insight. Furthermore, having more flexible roles may make the tasks easier. E.g. a coder would have far less trouble writing the Code Review than a documentation person. We also come together as larger groups: for example, representatives from each subcategory work on strategy and testing the robots, etc. Overall, we divided the team this way because we thought it would help maximize productive and ultimately help us produce the most optimal robots.

Conflict Resolution

Acknowledging any conflicts, even if they are deemed as insignificant, is crucial so that they do not cause unnecessary issues. The following conditions will be implemented if a conflict occurs within the team:

1. The team members will discuss the issue maturely without involving other members. They will do so without an aggressive attitude.
2. If the situation escalates and cannot be resolved, the involved members will discuss with the student leader to resolve the issue, making sure to exclude other members of the team.
3. If the situation further escalates, all members will discuss with the student leader to decide what course of action should be taken. They should reach agreement by taking a vote and implementing the majority opinion.
4. If the situation escalates even further, the issue will be discussed with the coach, whose decision will be final.