7. TEAM PERFORMANCE

Shown below in Figure 1 is a Gantt Chart that represents the team's performance across both semesters with regards to the six deliverables that have already been completed, starting from November of 2018 to the most recent deliverable which was completed in April of 2019;

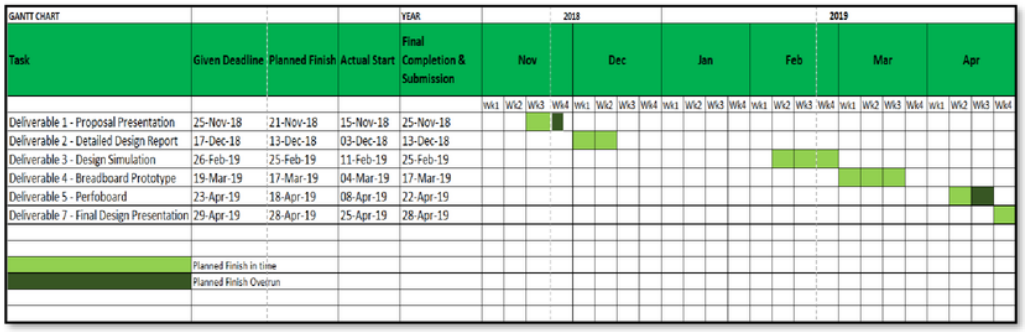

Figure 7.0 shows the team performance across both semesters

As can be seen above, the team has completed all deliverables before the official submission deadline but there were two instances where we took longer than expected to complete the assignment in comparison to our internal deadline. The first was for Deliverable 1, where a delay occurred due to our team losing members during that week because of various circumstances as well as having to completely redo our design proposals with only a few days to spare. The second was for Deliverable 5, this happened as it was the team's first experience using a soldering iron, thus soldering the circuits correctly took longer than expected which delayed the completion of the fully integrated design on the Perfoboard.

7.1 BUDGET

Seen below in Table 2 is the predicted labour costs by the team that was made early during the first semester. The rate is 300 AED per hour per student.

Table 2 shows the predicted Labour Budget

Name	Description	Hours	AED/Hour	Total
Meeting	Weekly Meeting	64	AED 900.00	AED 57,600.00
Simulations	Circuit Simulation	50	AED 900.00	AED 45,000.00
Breadboard	Designing Circuit	70	AED 900.00	AED 63,000.00
Perfoboard	Soldering Circuit	80	AED 900.00	AED 72,000.00
Total Predicted Labour Cost				AED 237,600.00

More hours were decided primarily because of the team having fewer members than other teams, working together for the first time and also performing soldering for the first time. Shown below in Table 3 is actual costs that were spent by the team across the two semesters.

Table 3 shows the predicted Labour Budget

Name	Description	Hours	AED/Hour	Total
Meeting	Weekly Meeting	28	AED 900.00	AED 25,200.00
Simulations	Circuit Simulation	15	AED 600.00	AED 9,000.00
Breadboard	Designing Circuit	25	AED 600.00	AED 15,000.00
Perfoboard	Soldering Circuit	37	AED 600.00	AED 22,200.00
Total Predicted Labour Cost				AED 71,400.00

Having fewer members allowed us to make a simpler project that wasn't required to have as many complexities as the others. We were also able to work fast and efficiently as we were able to rotate between the members by working at different times thus the chart reflects an average of 2 members working at the same time by keeping it to 600 AED.

As can be seen in the figure we came well within the budget, thus leading to a profit of AED 166,200.00.

PARTS BUDGET

Shown below in table 4 is a list of parts which the team predicted that we would require along with their costs, this was also made early during the first semester. The provided budget for parts was AED 900, this included the provided Prototyping kit that costed AED 600. All other parts were required to be obtained from the Lab Engineer with the sensor required to be ordered.

Table 4 shows the predicted parts costs

Item Name	Item Description	Units	AED/Unit	Total
Prototyping Kit	Arduino Starter Kit	1	AED 600.00	AED 600.00
74HC74	Dual Type D flip flop	1	AED 4.00	AED 4.00
NE555	NE555 Timer	1	AED 5.00	AED 5.00
Flex	Flex Sensor	1	AED 30.00	AED 30.00
74LS08	Quad 2 input AND Gates	2	AED 4.00	AED 4.00
74HC02	Quad 2 input NOR Gate	2	AED 4.00	AED 4.00
74LS04	HEX inverter Gate	1	AED 4.00	AED 4.00
Total Parts cost				AED 655.00

Shown below in Table 5 is the list of components that were used by the team along with their costs.

Table 5 shows the predicted parts costs

Item Name	Item Description	Units	AED/Unit	Total
Prototyping Kit	Arduino Starter Kit	1	AED 600.00	AED 600.00
Proximity	IR Proximity Sensor	1	AED 45.00	AED 45.00
74HC161	4-bit Binary Counter	1	AED 5.00	AED 5.00
74HC74	Dual Type D flip flop	2	AED 4.00	AED 8.00
NE555	NE555 Timer	1	AED 5.00	AED 5.00
74HC08	Quad 2 input AND Gates	3	AED 4.00	AED 12.00
74HC132	Quad 2 input NAND Gates	2	AED 8.00	AED 16.00
74HC02	Quad 2 input NOR Gates	2	AED 4.00	AED 8.00
74HC04	Hex inverter	2	AED 4.00	AED 8.00
LM7805	5V Voltage Regulator	2	AED 4.00	AED 8.00
TL071	Operational Amplifier	1	AED 6.00	AED 6.00
Total Parts cost				AED 721.00

This list was mostly finalised during the end of the first semester and contained more components than our initially predicted list as our understanding of the project grew and we changed the components as were best suited for our project design such as the flex sensor for an IR Proximity Sensor. The final components were obtained in early March 2019 as the breadboard prototype was nearing completion.

Thus, while the actual budget exceeded the initial estimations, the team made a profit of around AED 179.