EG-252: Group Design Exercise

Team Building Exercise

Establishing Expectations

This section is on how to establish expectations. It guides you to come up with team goals, expectations, policies and procedures, and consequences of non-compliance. It serves as a contract for your team and is signed off by all members of the team at the end of this document.

Goals

What are our team goals for the project? What do we want to accomplish? What skills do we want to develop or refine?

The first major goal for the project is to have a working prototype of the device by mid-December. This requires several smaller sub-goals before this point to make the goal more attainable and less vague. These sub goals will be detailed more in the teams project plan channel screenshot. This goal only requires obstacle avoidance demonstrated.

The final goal of the project is to finalise and perfect the prototype design. This includes some additional features, including the combat mode, line following, and some special feature.

Expectations

What do we expect of one another regarding attendance at lab sessions, participation, frequency of communication, the quality of work etc.?

Consistent attendance is expected. If external gatherings are required for the punctual completion of the deliverables, we are expected to make an effort to put the time aside.

Policies and Procedures

What rules can we agree on to help us meet our goals and expectations?

There will be regular meetings at the beginning of each allocated lab session where we will discuss our progress, along with any concerns.

Consequences

How will we address non-performance regarding these goals, expectations, policies and procedures?

In the case of a member not performing a task to the standard that was expected, the team will discuss why this was the case and how it can be rectified. Was the task perhaps too difficult for one person? Was the workload too high? If this is found to be the case, the responsibility will be redistributed between the other members of the team.

If the reason for non-performance stems from bad time-allocation or lack of effort from the individual, they will be expected to catch-up externally using their own free time.

Agreed Terms of Management

For a team of 4 people, each team member is to take on the role of Team Leader for 5 weeks. For a team of three, the period of office will be seven weeks. Please tabulate the expected periods and dates of office below. Each team leader will be expected to submit a confidential private report of the team's progress and your performance in office within one week of ending the period of office.

Who	Period of Office (weeks – term time)	From	To
Tony	7	10/10/24	28/11/24
Rhys	6	28/11/24	15/2/25
Mubarak	6	16/2/25	1/4/25

Skill/Task Matrix

This is a rough draft of what I remember from the skills identification and team building exercise that took place at the start of the GDE. Actual teams will be announced at the start of the class on 10th October, and I will be showing you how to create Microsoft Team sites which you can use for team communications, document collaboration, planning and meetings. This is a guide, and you are encouraged to discuss it within your own team and modify it as necessary to identify strengths and weaknesses in your team. Once you have agreed on your list of roles and the skills needed, you need to identify which team member will be responsible for each.

A version of this skills matrix will be required as part of the initial deliverables on the project.

Role	Skill	Needed for (system or activity)	Who?
Manager	Management	Project	All – to manage team for the period identified above.
Project Planner	Planning	Project	The current leader
Researcher	Organisation, record keeping	Project/Subsystems	
Electronic Hardware		Sensors, Drives Microprocessor system	
Designer	Knowledge of electronic hardware interplay	Designing the PCB	**Rhys**
Technician	Able to work round / solve problems encountered with hardware construction	PCB	**Rhys, Mubarak**
Tester	Eye for attention to detail	General functioning of the micro mouse	**Mubarak, Tony**
Software		Sensor inputs, Motor control, Mouse operation	
Designer	Good understanding of program architecture and object-oriented programming concepts	Hardware plan (sensors). Need to decide the potential application of the hardware before its necessity is justified.	**Tony**

Coder	Problem solving skills, Optimisation skills	Needed for the construction of the micro mouse.	**Tony**
Tester	Problem solving skills, creative thinking (you want to try to break the code)	Needed before the micro mouse is road tested	**Mubarak, Rhys**
Mechanical Hardware		Shell, Component assembly	
CAD	Design the shell	Shell construction	**Mubarak, Rhys**
Construction	Able to take what has been presented before with CAD and the PCB and construct a working micro mouse	Ensuring the final project has been completed and is fully operational	**Mubarak, Tony**
Sensors		Microprocessor inputs	
Experimenter	Signal processions, good knowledge of communication protocols	Needed before the circuit can be constructed properly, and before the programming truly begins to ensure the sensor is the right fit for the program	**Rhys, Tony**
Integrator	Reformat the circuit to fit in the sensors	Reformat/build on the hardware to integrate the sensors	**Rhys**
Tester	Perform multiple experiments to see if the sensors work	Put the codes through multiple tests to try and reinforce it	**Tony**
Documentation		Project planning, Progress reports, Paper-based and electronic deliverables, Hardware, Software, Experimental results	
Writer	Type out a concise, easy to follow and well-structured	Ensuring there is sufficient documentation of our progress with the project	**All –** Each individual will document their own steps

	report on the progress of the project.		
Graphic Artist	Have an eye for aesthetics and able to construct an easy-to-follow website	Ensuring the website has a consistent pace and flow	**All –** Graphics will be created by everyone based on each of their individual tasks
Data analyst	A good understanding of statistical concepts, and data analysis programs (e.g. MATLAB, Excel)	Taking our data and constructing graphs/simulations around them	**Rhys**
Editor	Able to reformat the documents when needed/notice and fix errors in spelling, grammar and potential timeline issues regarding project progress	General report progress	**All** - we will design the art for and write all our individual sections as we progress, and then peer edit each other)
Web Site		Documentation repository, Publicity, Collaboration	
Web Master	HTML, CSS, JavaScript skills	Manages website structure and security	**Mubarak**
Web Designer	Prototyping tools, UI/UX design	Create layout, ensures responsiveness	**Mubarak**
Graphic Artist	Illustrator, Branding	Design and refines digital assets	**Mubarak**

Signatures

We share the goals and expectations, and agree to these policies, procedures and consequences listed in the Establishing Expectations. We have agreed to the allocation of team leadership duties and terms of office listed in Agreed Terms of Management. We have agreed to take on the roles and responsibilities recorded in the