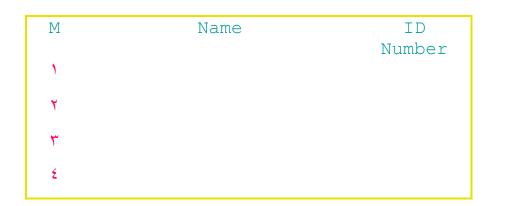


King Abdul Aziz University Faculty of Engineering Electrical and Computer Engineering Department EE306 - Electrical Engineering Technologies Spring 2015

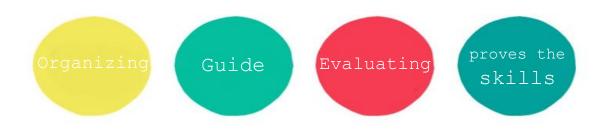
Portfolio

"Rain Alarm"



Instructors: Prof. Titik Khawa Abdul Rahman

Submission date: May 3, 2015



Scope:

A portfolio is a collection of artifacts that demonstrate the skills, personal characteristics and accomplishments. They are most commonly used in creative fields such as engineering. So, this portfolio will document and organize all the work of the project that we have done during the course. It sums up and shows in brief whatever it takes to do this project successfully. Finally, the portfolio is intended to achieve the objectives which are: organization and evaluation.

The portfolio will include:

- ✓ The team members and their role.
- \checkmark The agenda of the meetings.
- \checkmark The progress of developing the project.
- ✓ Final report.

The Team:

In the beginning of this portfolio, we will start with the team members and their roles in the project which is one of the very important objectives of the portfolio. In order to become an effective and productive team we divided the works between us fairly and help each other. So, because of that we can produce high quality work during the course and be cooperative team. Our team have many strength points such as: the team is very productive, the members are comfortable with each other, stay on track when we are together, attend prepared to the meetings, learn from each other and we have developed ways to resolve conflict and reach consensus.

The role of a team member is to share collective responsibility for the performance of the team, to be an effective team player and undertake assigned work within the agreed timescales. A team member will usually report through to a team leader. The following table (Table1) shows the team member and their role in the team.

	Table1. The member's role.					
Member Name	Role	Description of The Role				
	Leader	Provides direction, instructions and guidance to the team. Develop a strategy the team will use to reach its goal, clarify the instructions to team members, listen to team members' feedback, monitor team members' participation to ensure the training they providing is useful and also to see if any additional training is needed.				

Table1.	The	member's	role.
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Organizer	The liaison between the Coordinator and the team, collect information and the reports from the team as requested by the Coordinator, remind the team of upcoming deadlines, arrange team meetings, advise team members on how to develop more productive work and prevent the conflict between the members.
Timekeeper	Informs the team of the beginning time and ending time - with enough time for the members to begin and come to an end to the discussion, indicates when the group is using more time than available on one issue and remind them of the number of tasks and time remaining and helps the team use their time on issues that the whole team is needed.
Summarizer	Record, gather and keeps all the data relating to the needs of the project and present it in a format which the team can easily understand and review the agenda for action items.

The Agenda of Meetings:

A meeting is a gathering of two or more people that has been convened for the purpose of achieving a common goal through verbal interaction, such as sharing information or reaching agreement. Meetings may occur face to face or by communications technology such as: telephone conference call, Skyped conference call or a videoconference. The following pages show the agenda of the meeting of the team.



AGENDA FOR MEETING (1)

(Selecting of the Project)

Member No.	Member Name	Role
1		Leader
2		Organizer
3		Timekeeper
4		Summarizer

20 15 April 20								
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			1	2	З	4		
5	6	7	8	9	10	11		
12	13	14	(5)	16	17	18		
19	20	21	22	23	24	25		
26	27	28	29	30				

Meeting time: 2-3 Pm

Meeting place: The lab of engineering faculty

Meeting Date: Wednesday, April 15

No.	Task Description	Responsible Member	Comments	Estimated time
1	Contact before work and scheduling	Leader	Before the meeting the leader contacts with all team members to search about simple circuit projects.	10min
2	discussion	Everyone	We discussed each project to select two of them that satisfied all the required attributes.	15min
3	Working	Everyone	We start thinking about each project and how each one will be completed and then we used multi voting method (the methods we learned on IE201) to select the best one.	20min
4	Distribution of upcoming work	Timekeeper	The timekeeper () volunteered to perform the next step which is buying the components of the circuit.	15min

The results

We selected the best project based on the steps above which is (Rain alarm), also We discussed the whole project and how each step will be done.

AGENDA FOR MEETING (*)

Member No.	Member Name	Role
1		Leader
2		Organizer
3		Timekeeper
4		Summarizer

2	()				1	5	
_		K		2			Meeting time: 8-9:30 Am
		<u>س</u>	Åpr	11			Meeting place: The Laboratory
S	М	٩			F		meeting place. The Eastratory
5	6	7		2 9		4 11	Meeting Date: Tuesday, April 21
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30			

No.	Task Description	Responsible Member	Comments	Estimated time
1	Contact before work and scheduling	Leader	Before the meeting the leader contacts with all team members to bring the components of the circuit and going to the laboratory.	10min
2	discussion	Everyone	We discussed about each component to know how it works and how it will be connected in the circuit.	30min
3	Working	Everyone	We start connect the elements in the breadboard and measure the voltage in every component to make sure the connect is true.	30min
4	Distribution of upcoming work	Everyone	We determine another meeting to talk about the report of the project and to distribute the work between us.	20min

The results

Our circuit is working and we learn about new components: its Function and its benefits.

AGENDA FOR MEETING (*)

Member No.	Member Name	Role
1		Leader
2		Organizer
3		Timekeeper
4		Summarizer

20 15 ^{April}						1	5	<u>Meeting time:</u> 3-4 Pm
								Meeting place: The library of engineering faculty
	S	М	9	W	9	4	S	
				1	2	З	4	
	5	6	7	8	9	10	11	Meeting Date: Wednesday, April 29
	12	13	14	15	16	17	18	
	19	20		22			25	
	15	20		\sim		at 4	20	
	26	27	28	29	30			

No.	Task Description	Responsible Member	Comments	Estimated time
1	Contact before work and scheduling	Leader	Before meeting the leader contacted with all team members through e-mail to read about progress report from the files were sent by the instructor, specially the rubric to be ready for discussion. Also, the leader explaining the tasks of this meeting.	10min
2	discussion	Everyone	We discussed each part of the progress report briefly and determining the task that each member have to do.	15min
3	Working	Everyone	We start testing the performance and discussing the principle working of the project, working on the result and discussion of the project and Organizing the agenda of each meeting.	20min
4	Distribution of upcoming work	Organizer	The Organizer () determine deadline to finish the report. Also, we will collect and arrange the report to prepare for submission.	15min

The results

We have finished all the tasks of the final report and portfolio, we have documented and checked the rubric in order to make sure that we have achieved all the required tasks of the report.

The progress of developing the project:

Rain alarm project was passed through six phases to be complete and work successfully. The six phases will describes in detail how the project was carried out in terms of development of the circuit.

First Phase:

First of all, in this phase the relevant information regarding to the project was collected and the scheme of the circuit was established. After establishing the scheme, we concluded and analysed the principle working of the circuit. Figure 1 shows the schematic diagram of the rain alarm.

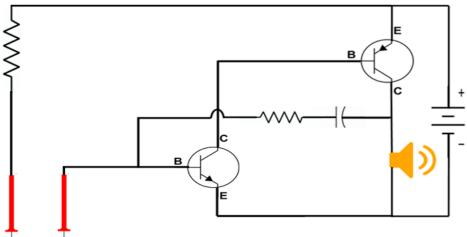


Figure1. The schematic diagram of the rain alarm.

Second Phase:

In the second phase a suitable budget for buying the materials and equipments that are required for the project was demined. The materials for the project are : two resistors of $330k\Omega$ and $10k\Omega$, two types of transistor which are [NPN] and [PNP] transistors, capacitor of 0.01mf, a speaker, a probe, electric wires is used to connect the circuit components and a battery of 3 volt, vero board and soldring iron and wires.

Third Phase:

In this phase, The components of the circuit was tested before conecting on the circuit, to be sure that the components are fine and work correctly. Three tests were conducted on the circuit components which are: resistor, capacitor and transistor test.

Fourth Phase:

In this phase, the rain alarm was designed and constructed as shown in figure1 but the project did not work. So, because of that we tried to descover the reason by repeating the test of component and the construction of the circuit but the project still not working. One of the members thought that the speaker is the reason . So, when the speaker was changed finally the project is working successfully.

Fifth phase:

In this phase, two tests were condcted after building the circuit to check if it behaves well. The two tests were conducted on the circuit's output voltage and the current. The tests were conducted by using two methods which are: using the oscilloscope (since it represents the voltage curve over time) and the multi-meter.

Sixth phase:

Finally, the components of the project was soldered on the vero board. Also, the performance of the project was tested and evaluated by the team members. The following table (Table 2) shows the time consumed to complete the phases of the project.

Table2. The consumed time to complete the phases.	
Phases	Consumed Time
 First Phase which contains: Collecting the relevant information regarding to the project. 	🗸 Two days.
 Drawing the schematic diagram of the rain alarm. 	🗸 One day.
 Analysing the principle working. 	 One days.
• Second phase which contains:	
 Buying the matireals of the project. 	🖌 Two days.
 Third phase which contains: 	
 Testing the components such as: resistor, capacitor and transistor. 	🖌 One hour.
 Fourth phase which contains: 	
 Constrctuing and bulding the project. 	🖌 Two Days.
• Fifth phase which contains:	
 Measuring and testing the output voltage and current. 	✓ One hour.
• Sixth phase which contains:	
 Bulding the project on the vero board. 	🗸 One Day.

The Performance of The Team:

All of the team members were very helpful and work cooperatively by cooperated with each other as one person. So, because of that the project has finished successfully before the deadline.