“Representation of Radar by using GUI”

ABSTRACT

Goal of this project is to design, implementation and testing of a Graphical User Interface. In this project we represent how Ultrasonic Radar system works by using GUI. Graphical User Interface is human computer interaction. In this system user interact with computer. Research included a basic understanding of Radar system. Using this GUI, we can generate a RADAR model as per our convenience. This GUI based RADAR model used to show how to detect the target which is moving or fixed at one place.

This visual model shows how ultrasonic sensing technology senses the target, how the robotics is implementing at backend of the actual Radar model, how to measure the distance of the target, how the tank level measurements in production lines and proximity detection applications run at backend of the actual model and it shows how the home security system implementing at the backend of actual model. This visual model made it possible to solve technical problems faster and cheaper without compromising the safety, security, quality and stability.

INDEX

1. INTRODUCTION

1.1) Project Idea: -

In this project, we will show you how to RADAR works. This RADAR system is implemented by using GUI with the help of c software. RADAR is a long-range object detection system that uses radio waves to establish certain parameters of an object like its range, speed and position.

This GUI based RADAR technology is used to show how actual RADAR detects the aircrafts, ships, guided missiles, marine, spacecraft, motor vehicles, weather predictions and automobiles. A RADAR system consists of transmitter producing electromagnetic waves in the radio or microwave domain, a transmitting antenna, a receiving antenna.

Radio waves (pulsed or continuous) from the transmitter reflect of the object and return to the receiver, giving information about the object's location and speed.

1.2) Need of project: -

RADAR was originally developed to detect enemy aircraft during World War II but it is now widely used in every field from police gun's speed detector to weather forecasting.

People should understand the concept and working of RADAR and also know the importance of RADAR.

1.3) Literature survey:-

In 1886, Heinrich Hertz demonstrated the Radar system practically and the era of radio communication, Radar was born.

The Graphical User Interface developed in late 1970's by the Xerox palo alto research laboratory and developed in commercially in Apple's iOS and Microsoft windows operating systems.

For demonstration of Radar by using GUI we got an idea about this project. So that we referred the information of above concepts from internet.

2. PROBLEM STATEMENT & SCOPE

2.1) Problem Statement: -

To demonstrate RADAR technology with the implementation and testing of Graphical User Interface, to develop a programming language and standard library functions**.**

2.2) Project Scope: -

The scope of this project is up to development and enhancement in GUI which is used to demonstrating this project.

2.3) Area of project: -

We can show people in places where there is no security that how Radar works through this project, so that they can understand the importance of Radar and use it to create a safe environment.

This project is also used for educational purpose, so that students can easily understand the concept of such type of various systems.

2.4) Goals & Objectives: -

Objectives of project-

To study the importance of Graphical User Interface and to show how Radar works by using GUI.

Goals of project-

The goal of this project is to design, implementation and testing of a Graphical User Interface. Another goal of this project is to show how Radar system works by using GUI.

3. SOFTWARE REQUIREMENT SPECIFICATION

3.1) Software Requirements: -

- Operating system : Windows 7 and above
- Programming Language : C language

3.2) Hardware Requirements: -

- Processor : Intel Core i3 and above
- Hard Disk : 160 GB and above
- RAM (minimum) : 2 GB and above

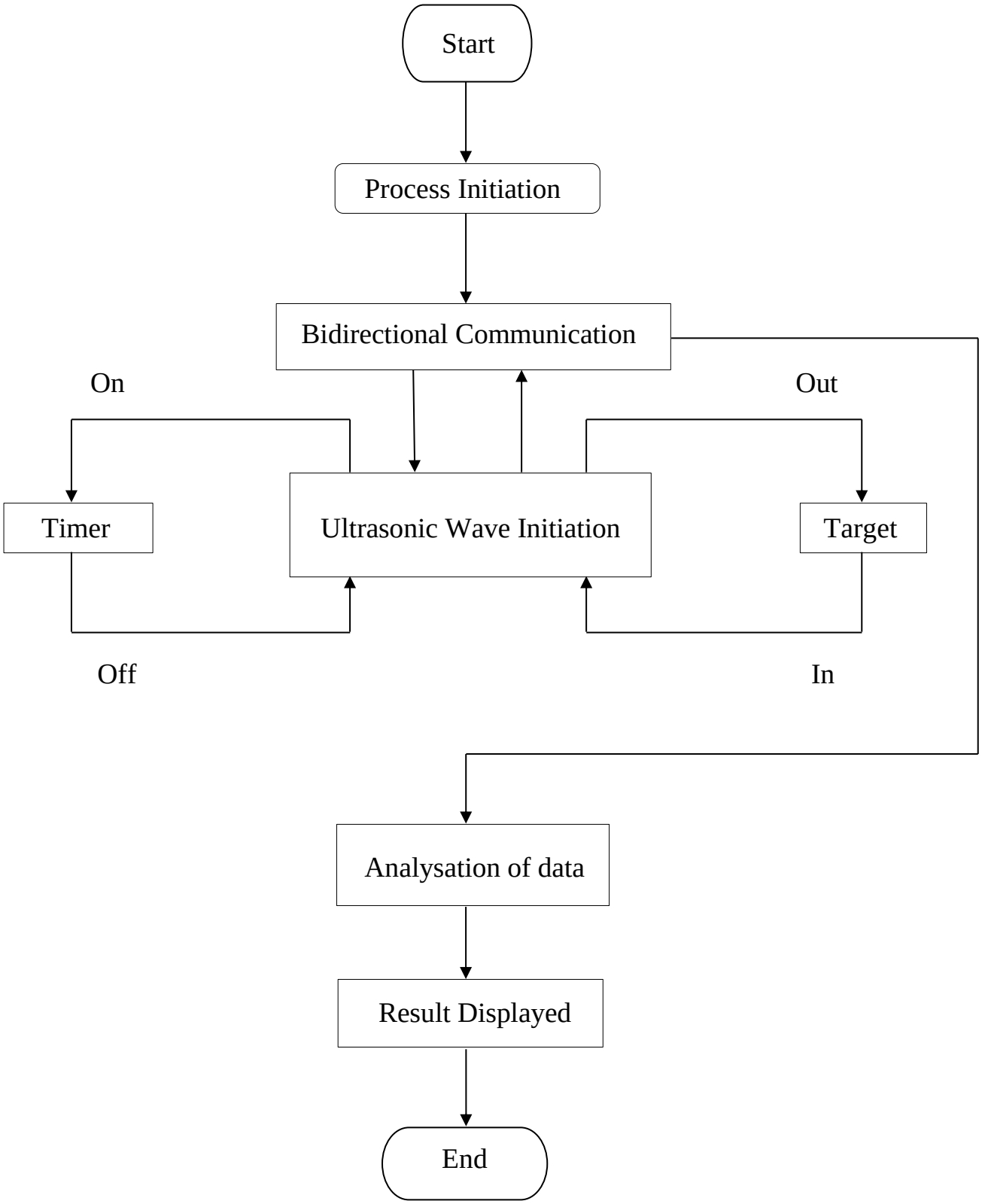
4. PROJECT PLAN

4.1) Project Schedule: -

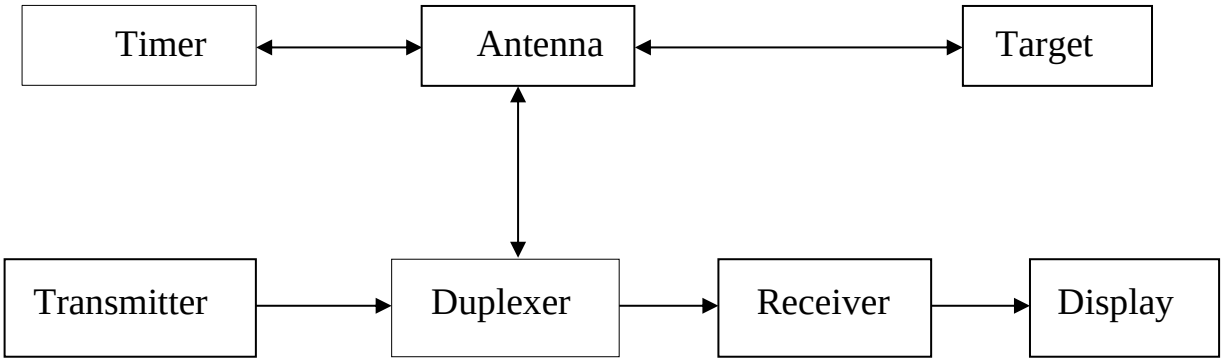
MONTH	WEEK 1	WEEK 2	WEEK 3	WEEK 4
• **MAY**	-	Project Team Formation	Subject decided (Representation of Radar by using GUI)	Discussion on topic with team members
• **JUNE**	Source code implementation in c	Discussion of Project with project In charge	Communication with group members on the Synopsis and Report Format	Work distribution
• **JULY**	Actual project work started	Synopsis and Report ready	All project work is done	Project Presentation

5. SOFTWARE DESIGN

5.1) Flow Chart :–



5.2) Architecture Digram : -



6. IMPLEMENTATION DETAILS

6.1) Functions and Their Functionalities: -

This project program includes mainly four types of functions which are principle (), distance (), direction () and close (). Their functions are as follows-

Principle (); –

This module consists of code that gives output of actual components used in radar. This code can print the transmitter, arrow to duplexer, duplexer, arrow to antenna, arrow to target, arrow to antenna, arrow to duplexer, array to receiver, receiver, array to display, display and also gives output of console screen color which we are given.

Distance (); –

This module consists of code for antenna, timer, ray from antenna to target which are also components of radar that will show how antenna emits waves and finding distance of target. This will also show when timer is on or off.

Direction (); -

This module contains code for simply antenna and radiation pattern that are emits from the antenna for finding distance.

Close (): -

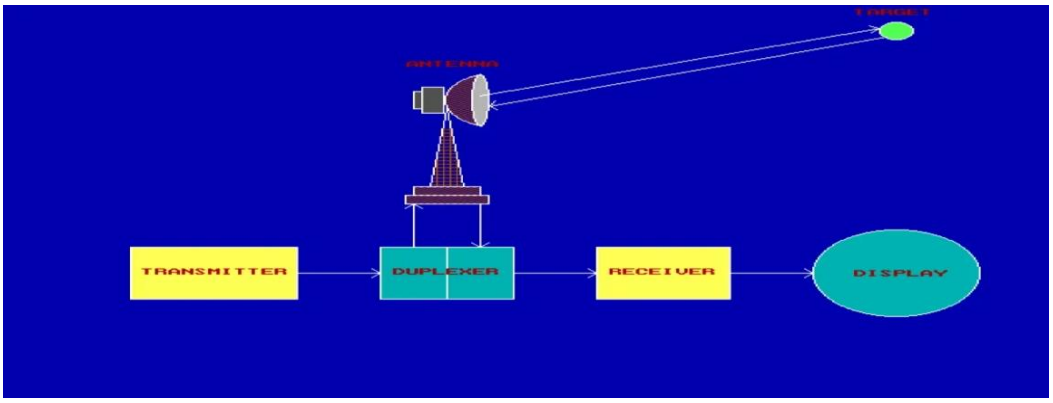
This module simply performs function that closing the program.

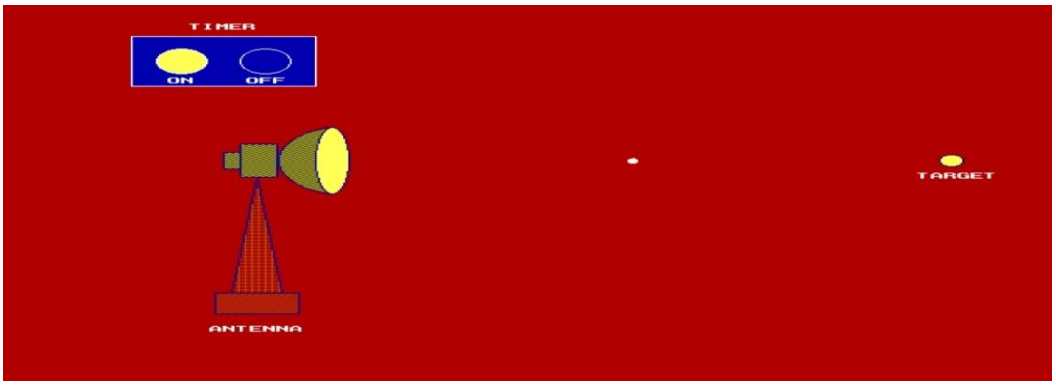
7. TESTING

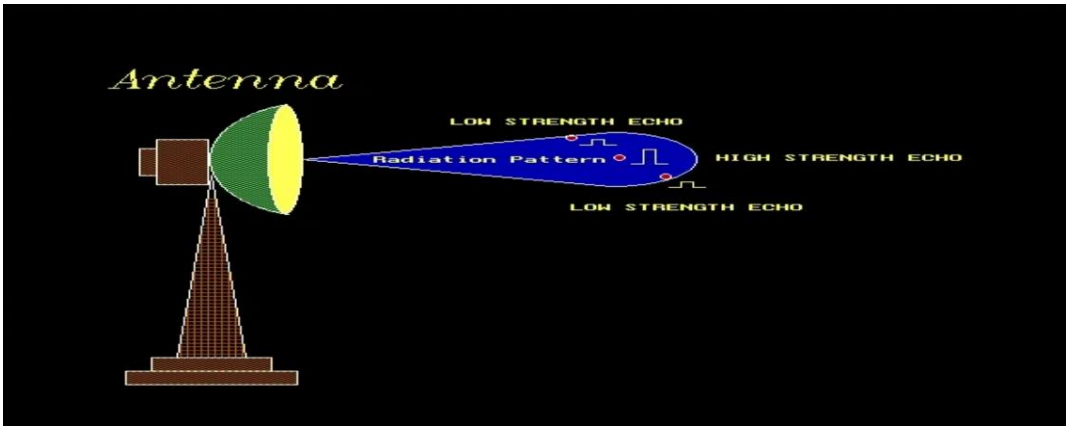
Testing is process of executing the program with the intent of finding an error. A good test case is one that which has high probability of finding an undiscovered error. A successful test is one that uncovers an undiscovered error. Error may begin to occur at the very inception of the process.

Test case no.	Test case name	Expected Output	Actual Output	Status
1.	Displaying components of system	System should be represented without any errors & drawbacks	Displayed some components of Radar system except one that is Receiver	Failed
2.	Movement of waves	Antenna should emit waves	The waves cannot be emitted by antenna so movement of waves didn't take place	Failed
3.	Target Detection	Antenna should emits waves & reach to target and detect target	Antenna generated waves & reached to target and target was detected	Successful
4.	System Representation	All components of Radar should display with proper manner	Properly displayed all components of system	Successful

8. SNAPSHOTS/ GUI







9. CONCLUSION

We have shown to the people an actual working of Radar and how it works to finding distance, velocity and other properties of detecting a target by using Graphical User Interface with C language.

So, radars having great potential can be used for security and safety purposes. So, by using this project people getting idea about working of radar and know importance of radar. So, this project will help to stop increasing misuse of technology.

10. FUTURE SCOPE

- This GUI based project were beneficial in the future, in a business as model representation to determine how best to pursue a proper methodology.
- This system can also be used for educational purpose so as to understand the various systems (i.e., Radar, Wind System, Dam power plant, etc.) through a video visualize medium by using GUI based software.

11. REFERENCES

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