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Morse Breaker

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Introduction to Morse

What's Morse Cipher ?

The term Morse Code refers to either of two systems for representing letters of the alphabet, numerals, and punctuation marks by an arrangement of dots, dashes, and spaces. The codes are transmitted as electrical pulses of varied lengths or analogous mechanical or visual signals, such as flashing lights.

A a	• —	J j	• — — —	S s	• • •
B b	— • • •	K k	— • —	T t	—
C c	— • — •	L l	• — • •	U u	• • —
D d	— • •	M m	— —	V v	• • • —
E e	•	N n	— •	W w	• — —
F f	• • — •	O o	— — —	X x	— • • —
G g	— — •	P p	• — — •	Y y	— • — —
H h	• • • •	Q q	— — • —	Z z	— — • •
I i	• •	R r	• — •		

Description

The idea of a project is about some of the means of safety for ships and one of the ways of communication between them, where there is a device inside the ship that converts signals (encrypted messages) (Morse code) into intelligible messages and sends them to another micro to take action based on the message. On the other hand, the micro measures the temperature of the engine, operates cooling fans at a certain temperature, and measures the water pressure in order to avoid breaking the ship's parts.

Topic

Name	Description
DIO (Digital Input Output)	A Digital Input Output is a peripheral that deals with digital signals, either by generating a digital signal (Output Mode) or by receiving it (Input Mode).
LCD (Liquid Crystal Display)	LCD screens are an array of small segments called pixels, which can be manipulated for information displaying.
switches	A Switch is a device which is designed to interrupt the current flow in a circuit.
Interrupts	Interrupt is an event the disturbs the normal execution sequence of the code and makes the processor to jump to another piece of code.
ADC (Analog to Digital Converter)	is a data converter which allows digital circuits to interface with the real world by encoding an analog signal into a binary code.
Sensors	Converts physical quantity (temperature, pressure, position, ...) to electrical signal (voltage, current, frequency).
Timers	Simply counter is a peripheral that counts events in a specific register.If these events are periodic then this counter is counting time, then it's called Timer.

Servo Motors	servo motors you can know position the motor shaft at a specific position (angle) using control signal.
UART (for Universal Asynchronous Receiver Transmitter)	Communication Protocol
SPI (Serial Peripheral Interface)	Communication Protocol

Components

Components.no	Components Name
1	Microcontroller AVR
2	LCD
3	Temperature Sensor(LM35)
4	Pressure Sensor
5	Servo Motor
6	Switches
7	Potentiometer
8	Buzzer

Project

We have three controller :

1. Morse Generator

This generator represents the external medium.

2. Master

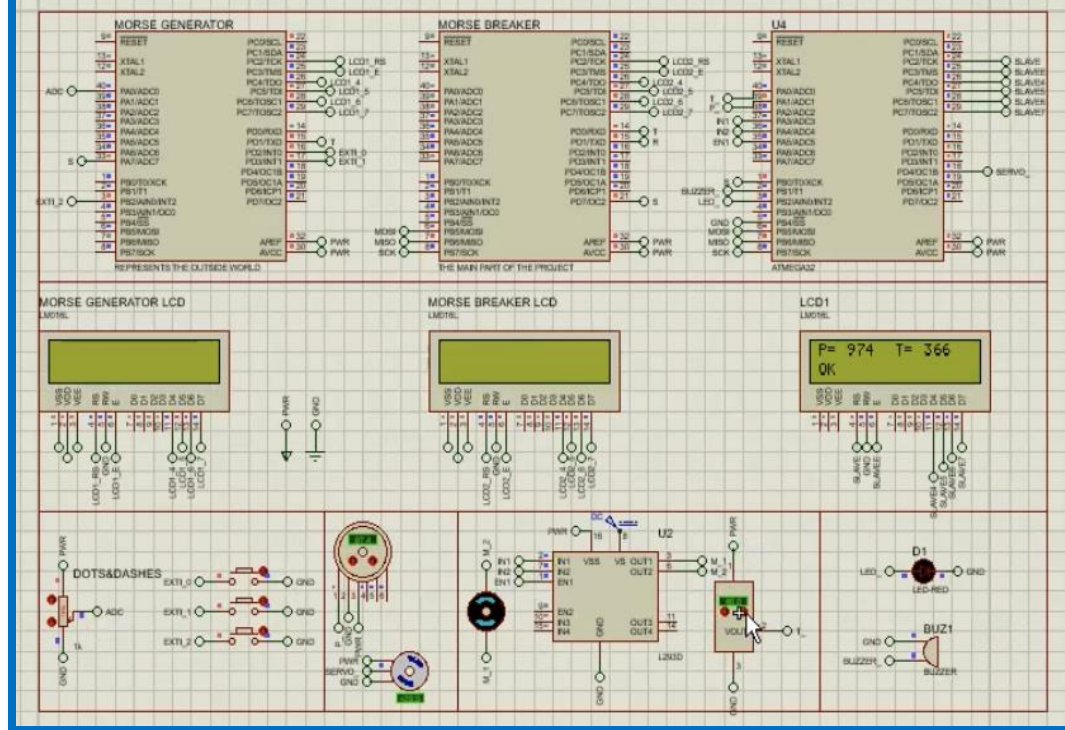
It's receives signal with UART then make mapping to convert it to string and then show it on LCD

3. Slave

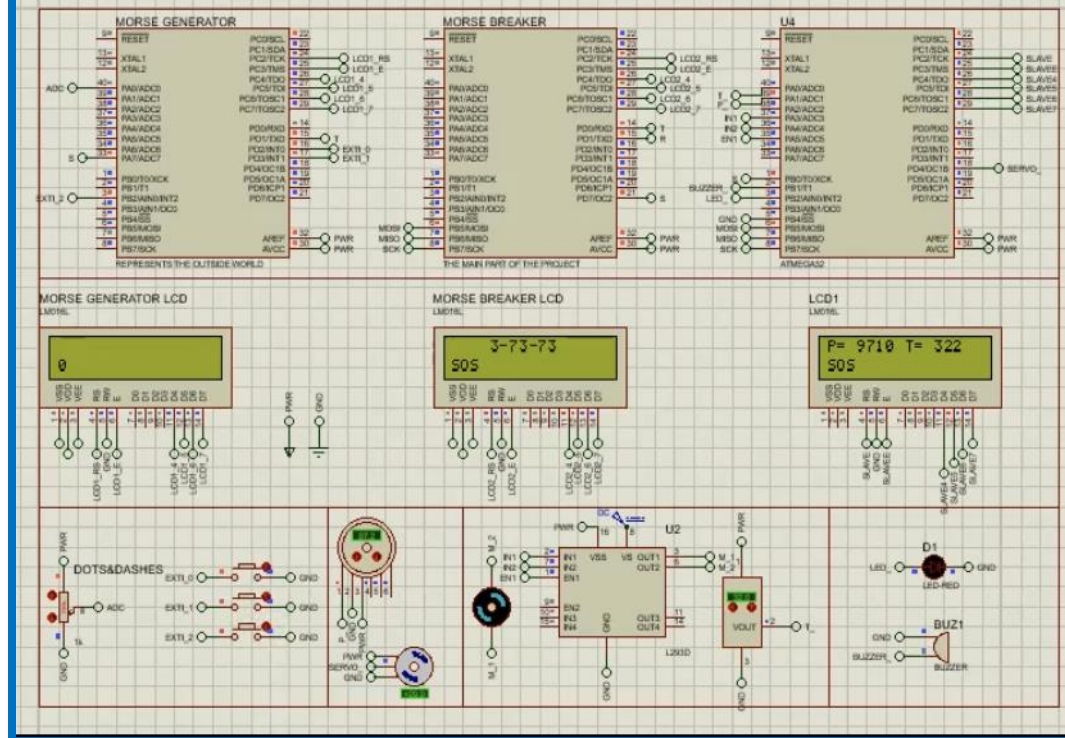
Received message from master by SPI communication protocol and take action dependent this message .

Circuit

MORSE code is used in telecommunications



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