**Automatic Tripod**

**PROJECT SYNOPSIS**

**OF Automatic Tripod**

**Bachelor of Technology**

Electronics and Communication Engineering

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**Introduction:**

A Tripod is a device which is used to hold the camera or mobile phones in shooting of photos and videos for content creation or any other purposes. It is a portable device and has three legs or stand. The legs of tripod are spread in a way so that it can make equal distance to each other. Tripods are light in weight and are sturdy. It helps to shoot steady photos, videos or time-lapsed videos.

An Automatic Tripod is a device which helps in shooting photos and videos with ease and without need of any other person. Which means only a single person can use this device to shoot photos and videos. Basically it uses motorized units for its movement. The motorized units automate its movement into horizontal as well as vertical in direction.

It is equipped with transmitters and sensors that make it more useful. The transmitters and sensors act as input by detecting/capturing the movement of a body. And also it is a battery operated device.

There are various types of tripods available according to their uses –

1. Pocket tripod
2. Tabletop tripod
3. Medium duty tripod
4. Portable tripod
5. Sturdy duty/Studio tripod

**Literature Survey:**

The first tripod was invented in early 17th century for surveying purpose. Later on, the modern and sturdy but portable tripod was discovered and manufactured by Sir Francis Ronalds in late 1820s in Croydon.

Later camera tripod was introduced by The Ries Brothers in 1936 which was constructed using wood. The Ries Brother wants a steady and durable camera for shooting videos or for content creation. Later the material used (especially wood) was replaced by different metals. The Ries Brother’s tripod has slightly changed in appearance over the year. The quality of each component is being constantly improved using the most advanced computer technology available.

**Methodology/ Planning of work:**

The following are the steps to be followed:

Step (1): In the very first step, we will discuss about the components that are required in the project.

Step (2): We will study about all the components, their working and behavior.

Step (3): After studying about the components and their working we will perform a simulation of the circuit.

Step (4): After that, we will perform practical implementation by connecting all the components along with Arduino on the bread-board and testing them.

Step (5): Now we will design the circuit on software.

Step (6): After circuit designing, we will go for PCB designing.

Step (7): After PCB designing we will solder all the components on PCB.

Step (8): Finally we will assemble all the parts.

Block Diagram of Automatic Tripod**:**

Sensors

(Input)

Motor

(Output)

Power

Supply

Micro-controller

**Microcontroller:** Whole microcomputer inside a single chip with input, output and processing unit is known as microcontroller. Microcontrollers are small, versatile, inexpensive devices that can be successfully implemented and programmed. In this project we will use ATmega328P microcontroller.

**Arduino:** Arduino is an open-source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on computer system, used to write and upload programming codes to the physical board. In this project we are using Arduino Uno R3.

**Sensor:** A sensor is a device that measures physical input from its environment and converts it into data that can be interpreted by either a human or a machine. Most sensors are electronic (the data is converted into electronic data), but some are more simple, such as a glass thermometer, which presents visual data. We are using IR sensors for our project.

An IR sensor is a radiation sensitive optoelectronic component with a spectral sensitivity in the infrared wavelength ranges from 780nm to 50um.

**Transmitter:** Transmitter is a device that sends information in form of signals. These are used in cell phones, Bluetooth, and computer networks, radio and TV. It works as output device. In this project we are using radio frequency transmitter.

The radio transmitter is an electronic device that produces radio waves and radiates these waves with the help of an antenna. The radio transmitter that we are using has range of 433Mhz.

**Receiver:** Receiver is a device which receives the transmitted signal and sends the received signal to processor. It acts as an input device.

**Bluetooth Module:** A Bluetooth module is a printed circuit board assembly (PCBA) which integrates Bluetooth functions. It is commonly used for short distance wireless communication. In our project we are going to use HM-10 Bluetooth module (V4.0).

**Time-Stamp:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 20th  (November)  -  25th  (December) | 20th  (January)  -  23th  (February) | 25th  (February)  -  15th  (March) | 20th  (March)  -  20th  (April) | 25th  (April)  -  15th  (May) |
| Task-01  Analysis of circuit |  |  |  |  |  |
| Task-02  Software  Simulation &  bread board  designing |  |  |  |  |  |
| Task-03  PCB designing  and mounting of  components |  |  |  |  |  |
| Task-04  Working on  different  physical  parameters  which  will affect  Our project. |  |  |  |  |  |
| Task-05  Report Writing |  |  |  |  |  |

**References:**

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[3] Website: [www.bluetooth.com](http://www.bluetooth.com)

[4] Website: [www.javatpoint.com](http://www.javatpoint.com)

[5] Website: [www.allaboutelectronics.org](http://www.allaboutelectronics.org)

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