**Flieger- My Buddy**

A Quadcopter drone is a drone with 4 frames, propellers, motors, ESC’s.

**Working-:** The flight controller receives signal from the transmitter which gets input from the user. All the 4 motors, 4 ESC’s are connected to the flight controller.

Let us get familiar with each part of the Drone-:

**Flight Controller**- It receives signal from the transmitter and also take information of the Camera, GPS module if placed in the drone. It acts as a small computer which can be programmed according to the need.

**Electronic Speed Controller (ESC)**-It is used to control the speed, direction of the motors by offering high power, frequency.

**Motors**-Quadcopter uses Brushless motors which are very efficient. It is important to arrange the motors in direction pointing towards the body of the Quadcopter. The setup should be as follows:

* **Front Left – Clockwise motor (CW)**
* **Front Right – Counter clockwise motor (CCW)**
* **Back Left – Counter clockwise motor (CCW)**
* **Back Right – Clockwise motor (CW)**

**Propellers**- Quadcopter uses **2 clockwise** and **2 anticlockwise** propellers. Their spin pushes the air downwards and let the force following Newton’s third law of motion i.e. for every action there is an equal and opposite reaction. Henceforth, as the rotors are pushed down on the air, the air move up on the rotors to make then rotate.

The drone changes its direction as specified:

1. **Throttle- Upward and Downward movement.**

**Positive Throttle-Upward**

**Negative Throttle-Downward**

1. **Pitch: Forward and backward movement.**

**Positive Pitch- Forward**

**Negative Pitch- Backward**

1. **Yaw: Rotation movement in left and right direction.**

**Positive Yaw- Right**

**Negative Yaw- Left**

1. **Roll: Sideways movement in left and right direction.**

**Positive Roll- Right**

**Negative Roll- Left**

**Camera**: It is operated by the remote controller. It rotates as the drone rotates. When the button on the controller is pressed, signal is sent to the flight controller which sends the signal to the camera

**GPS**: It helps to provide the latitude, longitude and point of elevation of the drone. It also helps the drone to return back to its start position.

**Sprinkler:** It is used to spray disinfectants over an area. It is also controlled through the remote controller.