Department of Computer Science & Engineering,

BRAC University.

Course Title: Computer Interfacing

Course Code: CSE 360

Group Number: 06

Submitted by: 1. Mohammad Aman Ullah Khan, ID: 19301139;

2. Nirjhar Gope, ID: 19301140;

3. Shifat Mahamud, ID: 19101621;

4. Nishat Ahmed Nobel, ID: 19301133.

Project Title: Drone Weather Station

Project Description:

In this project, we use a sensor to detect the weather by a drone and provide a real-time update. These drones will gather data from remote locations, specifically those flown into the boundary layer, which is the lowest layer of the Earth's atmosphere. They have sensors that can gather information from the atmosphere, such as temperature, humidity, and wind, to help them improve weather forecasting models. For example, a temperature and humidity sensor to sense the data, and UV sensor measures how strong the ultra violet radiation from the sun is at a particular place on a particular day and then send it to the microcontroller. The drone can receive instructions from the laptop or mobile device that is connected to the bluetooth module. The instruction will then be transmitted via the Arduino microcontroller, and the Arduino Board controls the sensors, running on the Arduino software, and it will give us automatic data collection and the option of real-time data posting through Bluetooth and the drone will fly as instructed.

Components Required:

1. Quadcopter frame;
2. 2312 770KV BLDC (Brushless DC Motors);
3. BLHeli 14.7 25A ESC (Electronic speed control - ESC);
4. APM 2.8 Flight Controller. (Ardupilot Mega - APM);
5. GPS;
6. Compass;
7. 4200mAh Lipo Battery;
8. 6ch SBUS Radio Set;
9. B3 Pro Charger;
10. Connecting wire;
11. Glue gun;
12. Glue stick.

Sensors:

1. Temperature sensors;
2. Barometric pressure sensors;
3. Humidity sensors;
4. Dew point sensors;
5. Light sensors;
6. UV sensors;
7. Infrared sensors;
8. Wind speed and direction sensors.