Page 2:  
This is our presentation outline. We will first talk about the objectives and the reasons why we create this system. Then, we will talk about the function provided by client side and Server side.

Page 4:  
The reasons that made us create this system because nowadays there is large amount of exhaust emission released due to industry high-speed development, which is harmful to human's health. Besides that, observatory cannot provide accurate data for every region. Also, some places human cannot arrive easily, like disaster area or mountain etc.

Page 5:  
We can connect the UAV through different platforms, Android App and Windows App.

Page 6:  
For android app, we can control the UAV to fly.There is a map that can show us the location of the UAV. We can also look at different climatic data collected by the UAV. Besides, we can also take photos or videos during live streaming.

Page 7:  
For Windows app, we can collect data and view live streaming form UAV. Besides, we can view the details of UAV and build up new mission. Other than that, graphs will be instantly generated when climatic data is received.

Page 8:  
As for the UAV, it can provide visualized climatic data to user and allow live stream.

Page 9:  
Here’s our use case diagram of mobile app.

Page 10:  
This is the use case diagram of Windows app.

Page 11:  
This is the sequence diagram of mobile app.

Page 12:  
This is the sequence diagram of Windows app when users trying to build up new mission.

Page 13:  
Here’s our class diagram of mobile app.

Page 14:  
Here’s our class diagram of Windows app.

Page 15:  
This is our project schedule.

Page 16:  
For the critical environment, first of all we worried about the network stability, as the network connection sometimes is too slow.   
Then is the battery capacity limitation. Under our calculation, the battery we used will provide 21.6 minutes of flight times.   
Next, is the fire risk with LiPo battery. We use Lithium Polymer technology which allows considerable energy to be stored in a small package. However, they are related to fire risk and have been known to catch fire spontaneously while charging or if punctured.   
After that, will be the weather problem. We do not recommend users to fly drones in rainy, snowy days or even in the drizzle because not only the aircraft may take some physical effects, but also the electronics may take damages.

Page 17:  
Last, we are going to sum up our presentation.   
For mobile app, we can view live streaming from UAV when controlling the UAV. We can photos or videos can be taken during live streaming.  
For Windows app, we can build up a new mission. We can also check the data collected by the UAV. Besides that, it can analyze climatic data.  
Live streaming, location of UAV on map and details of UAV can be done on both mobile and Windows app.

As for UAV, visualized climatic data will be collected.

Now, I will connect the UAV deceive to the application. On the top side, there is a menu bar. Before the user connects the UAV, the user should connect the wi-fi that the UAV provided. Press the connect button.

Now, you can see the video on the streaming view immandary. The user can watch the environment beside the UAV to keep it safe.

On the UAV details view, all details are displayed to the user for them to monitor the status of the UAV.

On the Map view, there is a point that locate the UAV. When the UAV moving, it will keep following it.

on the data Collection view, we can see the environment data are collected every 5 seconds and redraw the graphs. The user can see the changing and the trend of the environment.

approximately

At the bottom right, we can check the humidity. It will start showing the humidity after started to the drone. After we finish the mission, we can press "Output Result" button and there will be json files and some photos of the graphs generated by the system.

After we have finished collecting the climatic data we want, then we can press the button "Output Result", some Json files and photos of graphs generated by UAV will be shown.

For safety, all propellers are removed. There are 4 motors. 4 ESC, also known as Electronic Speed Controls, which are connected to the computer. ESC is a circuit that controls and regulates the speed of motor

This green board is raspberry pi, a credit card size computer, it attaches to the auto pilot hat.

This green board with the top black combines together to become the flight controller

The black item in the middle is the wireless adapter, used for wifi access point, so we can connect the UAV through the access point.

At last, 4-cells battery can provide approximately 20 minute+

+s flight times.