Phase 1:problem definition and design thinking

Noise level monitoring or measurement is a process to measure the magnitude of Noise in industries and residential area. Data collected from Noise level monitoring & Testing helps us to understand trends and action can be taken to reduce noise pollution. Noise pollution is Low or High-frequency sound that can cause/harm the activity of human life. It can be caused by various industrial Machines, Motor Vehicles and Craft etc. **NOISE POLLUTION MONITORING** process is a part of Environmental Monitoring & Testing as noise pollution is also increasing exponentially in recent years .Noise pollution is unwanted and unpleasant sound which can deteriorate human health and other living organisms

Problem statement:

echolocation to communicate, navigate, feed, and find mates, and excess noise interferes with their ability to effectively echolocate.

Some of the loudest underwater noise comes from naval sonar devices. Sonar, like echolocation, works by sending pulses of sound down into the depths of the ocean to bounce off an object and return an echo to the ship, which indicates a location for object. Sonar sounds can be as loud as 235 decibels and travel hundreds of miles under water, interfering with whales' ability to use echolocation. Research has shown that sonar can cause mass strandings of whales on beaches and alter the feeding behavior of endangered blue whales (*Balaenoptera musculus*). Environmental groups are urging the U.S. Navy to stop or reduce using sonar for military training.

Seismic surveys also produce loud blasts of sound within the ocean. Ships looking for deep-sea oil or gas deposits tow devices called air guns and shoot pulses of sound down to the ocean floor. The sound blasts can damage the ears of marine animals and cause serious injury. Scientists believe this noise may also be contributing to the altered behavior of whales.

Among those researching the effects of noise pollution is Michel Andre, a bioacoustics researcher in Spain who is recording ocean sounds using instruments called hydrophones

Design thinking:

- To deploy an iot device which buzzer when noise monitoring index reaches it's maximum value
- Need to identify the right digital noise monitoring sensors
- To identify the concentration of pollution of noise
- To identify the pollution hotspots
- Graphical representation of concentration of the pollutants that varies with time

Conclusion:

By using this project each and every variation we can analyze and inform nearby people in time. We can also analyze data form home using thingspeak.

The most important factor of this system is that it is small, cost efficient and portable. Sensors are available easily anywhere.

This system fully helpful to save the lives and overcome all the problem related to environment.