**CONCLUSION AND FUTURE WORK:**

**CONCLUSION:**

Food poisoning has been the source of innumerable diseases, to reduce and avoid illness we use bio sensors and electrical sensors to determine the freshness of household food items like diary, fruits, and meat, to expend the device for more items by adding new sensors and by using existing sensors.

Detecting the naturally emitted gases such as Methane, Ammonia and Ethylene as food decay can be used to detect food spoilage. Even before the presence of any visible signs of spoilage, Arduino gas sensors are able to detect gas emissions from food items. Using sensors to detect the presence of these gases among foods can help detect food spoilage early and prevent consumption of spoiled food. Different types of sensors can be linked to further extend the usage of system and to increase the sensitivity of such detection methods.

As per research conducted by World Health Organization an estimated 600 million – almost 1 in 10 people in the world – fall ill after eating contaminated food and 420,000 die every year, resulting in the loss of 33 million healthy life years (DALYs).

**FUTURE SCOPE:**

* The sensor data is recorded in the cloud and can be downloaded in csv format. So that it can be used for deploying machine learning and deep learning algorithms and this data can be used for further development.
* We can add more sensors like MQ136 and MQ137 for detecting hydogen sulfide and ammonia gases. Meat, fish, etc. releases sulfide gases when there are spoiled.
* Voice command can be provided
* GPS module can be added if there are two or more food spoilage devices.
* Detection of alcohol level in food substance to expand the sensing fields.
* For application in liquid process food streams, inclusion of Nano-Detect process will be used to develop on-line and off-line monitoring systems (sensors) which combine the expertise of sensitive molecular biological processes with the potency of nanotechnology.
* Usage of high precision sensors to increase area of sensing.
* Integration of two or more sensors for foods which display dual parameters. Based on amount of calorie consumption a pressure sensor is included which helps to maintain a balanced diet.