

## **ABSTRACT**

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### **IMPLEMENTATION OF AIR SENSOR FOR REAL-TIME AMBIENT AIRQUALITY MONITORING USING HCD6818 SENSOR AT PT MANUNGGALING RIZKY KARYATAMA TELNICS**

*This Professional Work was conducted at PT Manunggaling Rizky Karyatama Telnics with a primary focus on the Research and Development (R&D) division. As a member of the Back-end Developer team, the trainee was involved in developing a real-time ambient air quality monitoring system using the HCD6818 Sensor. The main tasks included the development of a program to retrieve sensor data in real-time through the Beaglebone microcontroller. The process involved algorithm development, data analysis, and data adjustment to meet the environmental quality standards set by the government. Utilizing the HCD6818 Sensor technology, Beagle Bone Black, and the Python programming language, the trainee successfully implemented an accurate and efficient monitoring system. The sensor provided high-precision air quality data, facilitated data interpretation, and ensured real-time information delivery. The success of this project demonstrates that the integration of air sensor technology can be an effective solution for environmental monitoring, both in industrial and office environments. This project not only fulfills the requirements of the Universitas Pembangunan Jaya for Professional Work but also provides valuable practical experience in the fields of technology and programming. The conclusion of this project emphasizes the significance of air sensor technology in environmental monitoring and provides an insight that the implementation of such sensors can be widely applied across various scales.*

**Keywords:** HCD6818 Sensor, Beagle Bone Black, Air Quality Monitoring, Back-end Developer, Python.