

Republic of Iraq  
Ministry of Higher Education and  
Scientific Research  
University of Babylon  
College of Information Technology  
Department of Information  
Networks



# Forest fire detection project

*A Project*

*Submitted to the University of Babylon / College of information  
technology / Department of Information Networks in Partial  
Fulfillment of the Requirements of the bachelor's degree in  
Information Networks*

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## **Abstract**

Forest fires pose a significant threat to the environment and human lives. Early detection and prompt response are crucial in mitigating the destructive impact of such disasters. This project presents a forest fire detection system utilizing an ESP8266 microcontroller and a flame sensor. The system is designed to continuously monitor the environment for signs of fire. Upon detecting abnormal increases in temperature indicative of a potential fire outbreak, the system triggers an alert mechanism to notify relevant authorities or stakeholders. The alert mechanism utilizes email notifications for real-time communication. The system's sensitivity to fire detection is enhanced by adjusting the threshold values of the flame sensor readings. The effectiveness of the system in detecting forest fires is evaluated through simulations and practical testing scenarios. The proposed system offers a cost-effective and efficient solution for early forest fire detection, thereby facilitating timely intervention and minimizing the damage caused by such calamities.