

Phase 1: Problem Definition and Design Thinking

Project Definition: smart public transportation has become one of the most important things for developing cities and improving people's quality of life. Public transportation users face many problems, the most important of which is the long wait at the bus station. This project includes defining objectives, designing the IoT sensor system, developing the data-sharing platform, and integrating them using IoT technology and Python.

Design Thinking:

Project Objectives: The main objective of the prototype is to reduce the wait time at the bus station by knowing the nearest buses to a user, the real-time location of buses on the Google map to help passengers track buses in real-time, the arrival time of buses, and speed. The system was implemented based on Internet of Things (IoT) technology, by using the Global Positioning System (GPS), a microcontroller with a built-in Wi-Fi module (ESP32), and a mobile user interface by the Blynk IoT platform.