# Arduino Smarthome Hub

Shufeng Li, Dawn Dixon, and Abdullah Alotaibi

## Introduction

We are going to make a smart home hub to help the user to wake up and care for their home. It will wake the user with an alarm, turn on the lights, and read the date, time, and weather forecast. The hub will also water the plants if the soil is dry and if there is no rain in the forecast. The hub will be attached to a smoke and flame detector that will alert the user on their phone if there is a fire.

## Motivation and Significance

Our hub is designed to make life easier. The user will be able to wake up with ease and not have to worry about their plants or leaving their house in case of a fire.

## Goals and Objectives and Features

Our smart home hub will have a morning alarm and read the date, time, and weather forecast out loud. It will turn on the lights and water the plants if needed. It will also alert the user if there is smoke in the house.

## Proposed Methodology

We are going to attach the Arduino to a speaker, an LED light, a soil sensor, a water pump, and a smoke detector. We are going to use Node RED to access openweathermap.org. We are going to store the information from our sensors on a cloud. And we will create an app with MIT App inventor, so we can monitor the house and garden on our phone.

## Implementation

We are going to attach a speaker to our Arduino. We can use Node RED to get the date and time and play a morning alarm sound from the speaker. We will use the Arduino to turn on the LED when the morning alarm goes off. Using Node RED, we will also retrieve the weather forecast from openweathermap.org and use the Talkie voice library to read the message we create. We are going to attach a smoke and flame detector to the Arduino and send a notification to the user's phone if there is fire. We are also going to attach the Arduino to a soil sensor to check if the plants need water. If the weather is dry and there is no rain in the forecast, then the Arduino will use a water pump to water the plants.

## Conclusion

This hub will be able to simplify the user's morning routine. It will wake the user and help them plan for their day. It will care for plants and alert the user in case of a fire.