

D1: Proposal

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Requirements: Specify the project objective, select the appropriate board, and specific hardware and software needed. Your proposal must include a one paragraph justification of the choices. A back-of-napkin drawing can be included. Identify from where the board will be ordered and how you will obtain the needed software and documentation, and the expected cost.

Project Objective:

- Using a camera to detect motion. When motion is detected, turn on the camera, stream the video to a computer, and play “you’re finally awake”.

Selected Board:

Raspberry Pi 4 Model B

Hardware Needed:

Hardware	Estimated Cost
Raspberry Pi 4G X	\$ 94.01
SD/MicroSD X	\$ 14.99
SD/microSD Adapter	\$ 19.99
MicroHDMI cable X	\$ 6.99
USB Keyboard/Mouse	\$ 14.99
USB MicroSD Card Reader X	\$ 9.99
Power Supply X	\$ 9.99
Motion Sensor X	\$ 6.99
Pi Camera X	\$ 8.09
Audio Speaker X	\$ 12.95
Total	\$ 170.95

Paragraph:

For our choice of board we decided to go with the Raspberry Pi 4B because it already has built in wifi capabilities. Along with this we did some research on different operating systems that we can run on the Raspberry Pi, ultimately we decided something very general would be best suited for our application. For this reason we are going to be using the Raspbian OS as it has user friendly interfaces and features general purposes. Apart from this, the motion sensor, camera, and speakers were all chosen as they are compatible with our board. We chose simple parts and inexpensive ones as we were not looking for precision applications. Choosing overly complex sensors and such would add a layer of complexity not needed for the scope of this project.

Cost Sources:

Raspberry Pie, MicroSD, MicroHDMI cable, Power Supply:

[Link](#)

[CanaKit Raspberry Pi 4 4GB Starter PRO Kit - 4GB RAM](#)

USB Keyboard Mouse:

[link](#)

Motion Sensor:

[link](#)

Speaker:

[link](#)

Camera:

[link](#)

MicroUSB adapter

[Link](#)

Back-Of-Napkin:

