

Identify two embedded systems that are sold on the market today and analyze their interfaces.

- Smart Watch: Small screen + Easy to hold
- Smart Fridge: Easy to use monitor

Describe all inputs to each system and outputs from each system.

- Smart Watch:

INPUT: Touchpad, power, bluetooth

OUTPUT: Information about weather, time, blood pressure, make calls

- Smart Fridge:

INPUT: Touchpad on monitor, food, power, bluetooth

OUTPUT: Information about food

Classify the inputs and outputs based on their mode of interaction.

- Visual: Information
- Audio: Calls
- Tactile: Touchpad, food
- Electronic: Power, bluetooth

For each input and output, estimate the rate at which data is transferred in any units that seem appropriate. For example, a video game with a screen might output video data at 24 frames per second.

- Information, Bluetooth: A lot
- Calls: 5 calls / day
- Touchpad: 1 Touch / min
- Food: 10 Food / day

- Power: Frequency 50Hz

Estimate the “response time” of the system for different inputs. That is, what is the time between when the system receives input and the system responds to that input? For example, a digital camera might take a picture after a button is pressed. The response time would be the time between pressing the button and taking the picture. Explain how you made your estimation.

- Bluetooth -> Slow
- Touchpad -> Fast
- Food -> Slow
- Power -> Fast