

The memory microwave: Cooks, stores, and adjusts to your needs

The Memrowave

Group 31

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## Project narrative

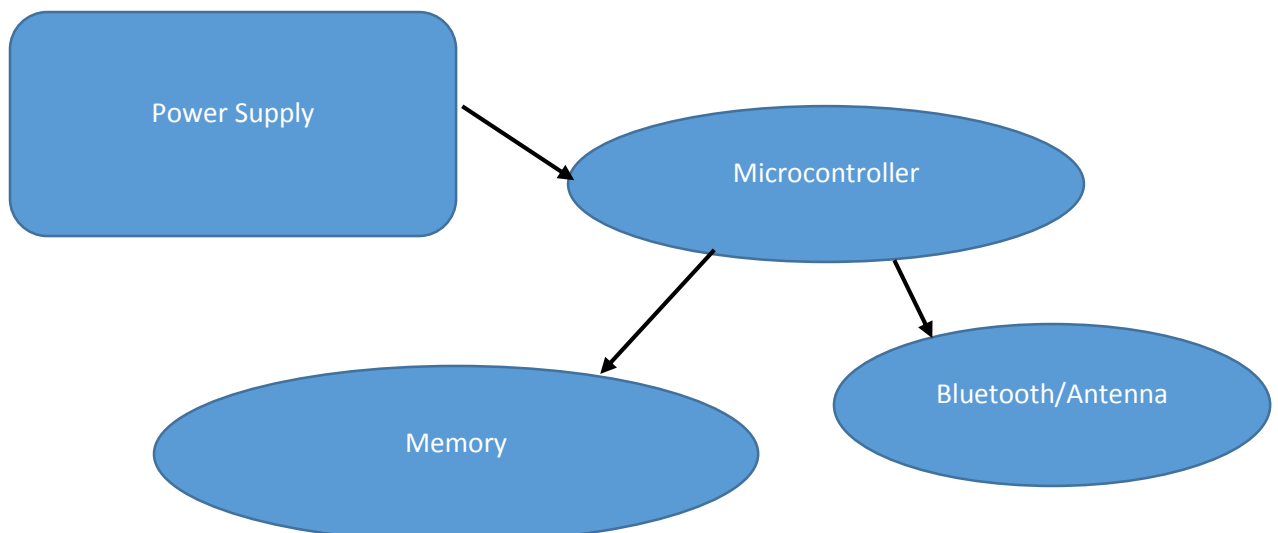
The memory microwave takes an extremely convenient house hold appliance and makes it better. The Memrowave stores a variety of common microwaveable groceries inside its brain with cook times. Making your morning commute even quicker. Simply scan the product's barcode or QR code to retrieve the stored information, close, and start cooking. The Memrowave came into concept based off the ever growing need to simplify our lives even further. Creating this product will do just that. Some of the key functions of this product will be. Cook times stored in memory, daily calorie counter, user adjustable times for cooking products in case times are off, a Bluetooth connection to alter the owner of finished food, and user friendly system to add more items to the allocated memory. Storing cook times into memory is the main purpose of our design. With this feature a user can simply walk up to the microwave, scan and cook. A daily calorie counter will be incremented from morning to night and reset for the next day. This feature is too help people from eating above their desired amount in snacks. If a preexisting grocery is overcooked or undercooked the owner can simply edit the times but seconds with a press of a button. This microwave will also provide a user with alerts to finished food via Bluetooth connection. No one wants to wait around a microwave for 10 or more minutes. Lastly food that didn't come presorted into memory can be added simply by scanning a new barcode and placing in unused memory. The Memrowave will add little to no weight relative to a current microwaves weight. Ease of use is a main priority, creating a simple user interface will keep people from getting frustrated.

## Specifications and Requirements

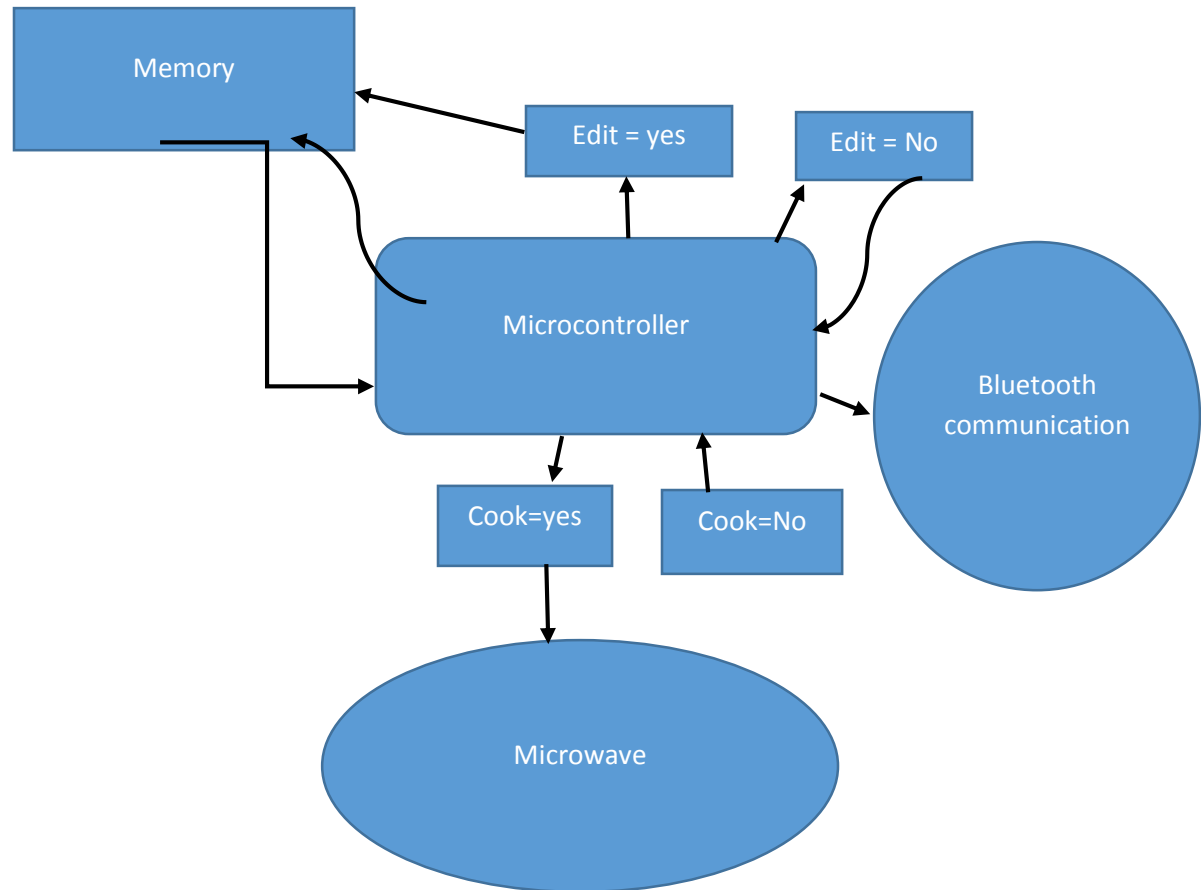
Storing cook times into memory is the main purpose of our design, early Memrowave retypes will come presorted with 50 common household items such as popcorns, various noodle soups and canned soups, and etc. In addition to the 50 pre encoded items the Memrowave will have 256 Mbytes of RAM and flash memory. This extra memory allows the user to add more items to the list, thus expanding the use of this microwave. Bluetooth will communicate up to 60 meters via a owners cellular phone. This feature range of 60 meters will prove more than necessary inside a person's home. If activated the device will give real time updates to the user. The daily calorie counter will looked up a products calories from memory and add the calories to a counter. This counter will use an internal clock to reset after midnight. A user may also change the reset time however, it will always be over a period of 24 hours. Altering cook times based off of user tastes will be done after cooking and can be changed in increment's for plus or minus 5 seconds. Computations will be done using a BeagleBoard or Texas Instrument's MSP430.

### Block Diagram

#### Hardware



## Software



## Project budget and financing

As of right now financing will be out of pocket via group members. Cost will be as follows:

Power supply: \$30

BeagleBoard: \$55

Fabricated PCBs: \$60

Bluetooth: \$23

Microwave: \$150

Webcam for barcode: \$40

Budget total: \$358

Project milestone for both semesters.

#### Semester one

Research is completed to determine best possible way to read barcode. Followed by Hardware component options. Our group's next milestone will be figuring out integration techniques for the microcontroller and memory. Followed by reaching Bluetooth communication to the device and phone. Finally components will be order during semester break

#### Semester two

Parts and ordered, shipped and arrived. Completion of the barcode to memory storage is completed. Integration of memory and the microwave. Bluetooth connection is achieved from the microcontroller and microwave's timer. Parts are integrated on a bread board. Complete integration is a success. PCB are order, shipped and arrived. Each sub system is work together with the microwave. Completion.