Team 10

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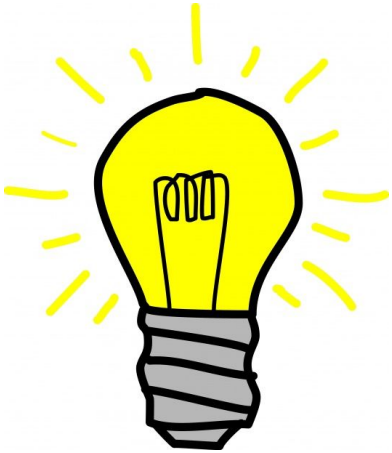
Tactical-Tank

A fully mobile tank that has the capability to snap a picture at the push of a button. The tank is controlled by an arduino remote that sends signals to the tank via wireless transceivers. The remote also has a button to talk to a raspberry pi through serial communication. The pi then takes a picture and directly uploads the image to our very own website.

Project Idea

- A stealthy vehicle that takes images on command. An arduino controls the motors and a pi takes the pictures. Both are mounted on the tank
- The Tank is controlled by a remote arduino from a distance
- The remote has three buttons for movement and one for taking a picture
- Photos are uploaded to a website hosted by the pi



I/O Devices

Remote Arduino

- Wireless transceiver
- Image button
- Left button
- Right button
- Forward button

Tank Arduino

- Wireless transceiver
- Notify LED
- Left motor
- Right motor

Raspberry Pi

- Camera
- IR sensors
- Wifi hotspot

Communication Devices

Wireless Transceivers
This is how the two arduinos talk to each other. The remote arduino sends signals to the receiving tank arduino. The remote tells the tank arduino which motors to turn on as well as notify if to pass on information to the raspberry pi.

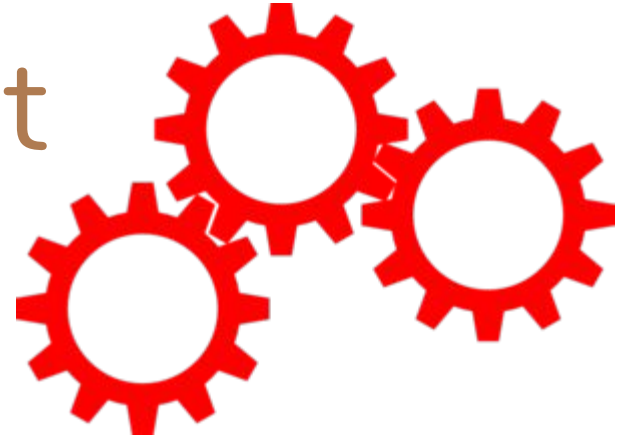
Serial Communication
This is how the tank arduino and the raspberry pi talk to each other. They are connected via usb because they are both mounted on the tank. The arduino receives a signal from the remote on when to take a picture. This signal is then transmitted to the pi that takes the physical picture.

Wifi Hotspot
This is how the raspberry pi sends the images to the website. The raspberry pi has a wifi hotspot to which a laptop can connect to. Then, the pi sends the image through the wifi connection to ultimately be displayed on the website.

Original Work

- Communication Mechanisms
- Capturing Image
- Website Host for Images
- Remote Controller
- Tank Architecture
- Microcontroller Devices
- Power Supply

Work Management



- **GitHub** - Sharing code and version control
- **Weekend** - Coordinated working all day over weekend
- **Pair Programming** - Worked together on code
- **Role Assignment** - Gave members certain tasks and supply acquirements
- **Google Docs** - Ability to work on a single document simultaneously

Roles

Javier

- Project Description
- Power Supply
- Tank Code
- Raspberry Pi Code
- GitHub Repository

Tomas

- Presentation
- Documentation
- Code Tweak/Comment
- Hardware Adjustment
- Remote Code
- Communications

Damian

- Tank Architecture
- Hardware Assembly
- Website Code
- Materials
- Camera Configuration