Tracking Wildlife Counts Using the Internet Of Things: Project Plan

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Aims & Objectives

- To build an Internet of Things solution that can accurately detect the type and presence of various animals
- To implement a computer vision solution that allows the detection of animals onboard a low powered, portable computer.
- Learn a deeper understanding of the Internet of Things and sensor-driven systems through working on a technically-rigourous project

Expected Outcome & Deliverables

- A program built for the Creator Ci40 prototyping board that can read in an image sent by the external camera module, and classify the types and counts of animals in the image, before sending this data to a base station via a LORA connection
- A program for the IR clicker device to detect movement and send a message to a nearby camera device
- A program for the camera device to take a photo when it receives a command via 6LoWPAN and send it to the Ci40 board
- A simple cloud service to store and display results received from the prototype boards
- A rigorous testing regime for as much code as possible
- (If possible) a real-life test of the system in an uncontrolled environment (i.e. a park or zoo)
- A design specification for the programs.

Work Plan

- Project start to end of October, search for exisitng solutions and formalise requiremnets with supervisor
- October to November, begin to get familiar with the prototyping boards and their associated toolings
- November to end of February, work on getting the following systems operational:

  - Triggering camera shutter via command sent over 6LoWPAN
  - Detecting movement from the IR sensing device and sending a 6LoWPAN command
  - Deciphering data sent from camera to Ci40 into a processible image
  - Work on image recognition of images on the Ci40.
- Mid-February to end of March, write project report and build simple cloud system.