**Introduction - 500-600 words**

Project overview

* General introduction to the project.
* A project summary.
* Example:  
  The time and effort required to manually sort and classify images is significant and painstaking. The collection of field data and the processing of said data needs to be automated and streamlined in such a way that users can easily get the information they require. Dr Client/UNE has provided a predictive model for the automatic classification of drop bears across their various camera trap deployments. The aim of this project is to deploy this model in a cloud-based solution and to develop a means for users to interact with the output prediction data.

Goals of the project

* What we want to achieve.
* Provide a solution for automated retrieval of raw data (images).
* Provide a means for the automated classification of images (positive/negative sightings of drop bears).
* Store data of positive/negative sightings in a database.
* Develop a solution for end-users (users and researchers) to interact with the data.

Project scope

* How we go about it.
* Deploy a Cloud based solution for running the client's machine learning model on.
* Deploy a Cloud based database for storing the output from the client’s model.
* Develop interface solutions (website and application) for users to interact with the data.
* Describe the overall order of execution upon the camera traps triggering.
* Assumptions and constraints to the project.

Key milestones

* The schedule in terms of the 3 monthly milestones, what will be completed at these milestones.
* Project deliverables on project closure.

Identification of stakeholders

* Dr Client - Main stakeholder for the project.
* The SPM.
* Developers.
* The 5 test users.

**Technical solution - 500-600 words**

Overview of solution

* Camera sends 3 images to the email address, the solution must then send these images to AWS and save some metadata, which will then be stored in a database and processed by the machine learning model for classification. Upon classification, the app/website is updated.

Major components

* Website for users (sort by postcode, sign up for email alerts).
* Website for researchers (sort/filter various information on dropbear sightings).
* Phone application that runs on the latest iOS and Android build (cross platform).
* Amazon Web Services cloud-based solution to process images received using the machine learning model.
* AWS needs to parse images received.
* AWS is used for website hosting.
* Cloud-based database connection to AWS for storage of images and metadata.
* Full documentation of all code and solutions.

Justification of technical solution

* A more detailed and in-depth explanation of how the major components will work and interact with each other.
* Figures and/or diagrams that describe how the technical solution will work.

**Development and project management plan - 400-500 words**

Project methodology

* Project built around Scrum development environment.
* Diagram of our development process.

Required resources

* Software project manager.
* Human resources.
* Computer resources.
* Physical logistics.
* Networking and internet services.
* A table that allocates funding to required resources.

Development team member roles

* The SPM - overseer of the developers.
* Mr Web Guy - does all the website, app and database development
* Mr Cloud Guy - does all the Cloud-based coding and implementation of API

Development team composition

* Website/App/MySQL database developer.
* AWS developer.

Programming languages and environments

* HTML/JavaScript/CSS for website development.
* PostgreSQL for database management.
* Java or Kotlin for Android development.
* Swift for iOS development.
* Python for TensorFlow/AWS API.

**Preliminary execution schedule - 400-500 words**

Include all major components in your proposed solution

* Greater detail on what we’re going to develop and in what order. Essentially an outline of the execution schedule.

Must include component dependency relationships

* Some form of Gantt chart or network map to demonstrate what components must be finished before another can begin.

**Additional/optional sections - 200~ words**

Testing

* Should be included in our report.

User training

* Only 5 test users - do we really need user training?

Deployment

* Prototype proof-of-concept so may not be required.

Maintenance

* Dr Client strongly suggested that maintenance would not be required as we’re simply developing a prototype proof-of-concept.

**Additional comments**

* Research TensorFlow and AWS to get a better understanding of how these components can be linked together for the technical report.

**Useful links**

Example report: <https://cs.uwaterloo.ca/~apidduck/se362/Assignments/A2/fordexample.pdf>  
  
Email retrieval: <https://aws.amazon.com/getting-started/projects/setup-email-receiving-pipeline/>  
  
TensorFlow information: <https://www.tensorflow.org/learn>

Tensorflow example: <https://www.youtube.com/watch?v=HS7U6IugXmE>  
  
SQL relational database (good for sorting/filtering): <https://aws.amazon.com/rds/aurora/>  
  
WTF does Methodology refer to: <https://blog.planview.com/top-6-software-development-methodologies/>