

ECE 458
Development Guide
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Project Overview: The purpose of our project is to create a web inventory tracking system for the Duke ECE department. We built our web app using Django with a Postgresql database. The application is running on an Apache webserver on an Ubuntu virtual machine provided by Duke OIT.

Link: <https://colab-sbx-379.oit.duke.edu/>

High-Level Design: Our project uses the standard Django project architecture, with three applications: home, manager, and administration. Each app has a few main files:

- `models.py`: Specifies the persistent models which Django translates into Postgresql tables
- `views.py`: A set of Python functions that take Web requests and return Web responses
- `urls.py`: The URL declarations for the project; a “table of contents” of the site

These files, in addition to html templates for the different pages, control the behavior of the application.

ReST API: We used the Django Rest Framework to implement a ReST API to achieve the same functionality as available in the web application.

Database Schema: The database schema is as follow:

```
Item(id, item_name, count, model_number, description)
Tag(id, tag)
Request(id, owner, item_id, reason, admin_comment, quantity, status, parent_cart)
Cart_Request(id, cart_owner, cart_reason, cart_admin_comment, cart_status)
CustomFieldEntry(id, field_name, is_private, value_type)
CustomShortTextField(id, parent_item, field_name, field_value)
CustomLongTextField(id, parent_item, field_name, field_value)
CustomIntField(id, parent_item, field_name, field_value)
CustomFloatField(id, parent_item, field_name, field_value)
Log(id, initiating_user, involved_item, nature, timestamp, related_request, affected_user)
User(id, username, password)
```

Development Environment: The technology versions used for development are specified below:

Django 1.10.5
Python 3.4.3

Postgresql 9.3
Ubuntu 14.04