My React/Django web app

Tuesday, April 2, 2019   1:54 PM

What You will need:

Backend PT1:

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- **Python 3.7.2**
- **Pip**
- **Pipenv (instructions to install below)- Will need to create a new pipenv environment on every new sanitized creation of cloud server. This process alone takes about 2 mins**

  What is pipenv? Pipenv is a production-ready tool that aims to bring the best of all packaging worlds to the Python world. It harnesses Pipfile, pip, and virtualenv into one single command.

  From <https://scotch.io/tutorials/build-a-to-do-application-using-django-and-react#toc-setting-up-the-frontend>

1) Install Python 3.7.2 libapache2-mod-wsgi
2) Push and unzip django-todo-react folder to vm:
   tar -xvf django-todo-react.tar

   From <https://www.pendrivelinux.com/how-to-open-a-tar-file-in-unix-or-linux/>

3) Install pip:
   sudo apt-get update
   sudo apt-get install python3-pip apache2 libapache2-mod-wsgi-py3

   From <https://www.digitalocean.com/community/tutorials/how-to-serve-django-applications-with-apache-and-mod_wsgi-on-ubuntu-14-04>

4) Install pipenv shell using cmd:
   a. Sudo pip install pipenv
   b. pipenv shell /*starts pip vm shell, which is the only thing Django will run on that I have found

```
E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react>dir
 Volume in drive E is My Passport
 Volume Serial Number is 0AA3-0D8A

 Directory of E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react

04/03/2019  07:27 PM    <DIR>          .
04/03/2019  07:27 PM    <DIR>          ..
03/29/2019  10:44 AM    <DIR>          .vscode
04/12/2019  01:54 PM    <DIR>          backend
03/29/2019  04:24 PM    <DIR>          frontend
04/03/2019  07:27 PM    <DIR>          node_modules
04/03/2019  07:27 PM                55 package.json
04/12/2019  01:37 PM               229 Pipfile
03/29/2019  10:46 AM             8,513 Pipfile.lock
04/03/2019  07:27 PM             1,472 yarn.lock
               4 File(s)         10,269 bytes
               6 Dir(s)  1,934,259,261,440 bytes free

E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react>pipenv shell
Launching subshell in virtual environment…
Microsoft Windows [Version 10.0.17134.648]
(c) 2018 Microsoft Corporation. All rights reserved.

(django-todo-react-qEQXqsZZ) E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react>
```
   */

5) Install Django
   a. pipenv install --skip-lock Django /*dependencies are already part of the file, so you will receive an error if you try to install Django on the shell without the --skip-lock cmd */
6) Nav to backend folder in django-todo-react /*need to review this process manually before automating. I think I missed an error*/
   a. cd backend
   b. Cd backend
   c. Edit settings.py needs to have external IP as an allowed host:

```
# SECURITY WARNING: don't run with debug turned on in production!
DEBUG = True

ALLOWED_HOSTS = ['35.227.36.86']


# Application definition

INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
```
      i.
      ii. Save file
   d. Back up 1 level to file location that has manage.py
   e. Python3 manage.py migrate //used to push appropriate django nodes to the server for use.
   f. Python3 manage.py collectstatic //overwrite when asked
   g. python manage.py runserver 0.0.0.0:8000
   h. /* should see following screen if server was created properly

```
(django-todo-react-qEQXqsZZ) E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react\backend>python manage.py runserver
                                                        Watching for file changes with StatReloader
                          Performing system checks...

System check identified no issues (0 silenced).
April 16, 2019 - 12:26:32
Django version 2.2, using settings 'backend.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
[16/Apr/2019 12:31:24] "GET /api/todos/ HTTP/1.1" 200 761
```
   */
7) Create the appropriate migrations files(might not need to do this step, will need to test on sanitized cloud VMS)
   a. Python manage.py makemigrations [modelName]
   b. migrate [modelName]
   c. /*repeat until all migrations are done. Files that need to be migrated are the following except __init__.py:

```
(django-todo-react-qEQXqsZZ) E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react\backend\tod
o>dir
 Volume in drive E is My Passport
 Volume Serial Number is 0AA3-0D8A

 Directory of E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react\backend\todo

03/26/2019  02:01 PM    <DIR>          .
03/26/2019  02:01 PM    <DIR>          ..
03/26/2019  02:14 PM               222 admin.py
03/05/2019  04:29 PM                88 apps.py
03/05/2019  05:24 PM    <DIR>          migrations
03/26/2019  02:05 PM               272 models.py
03/26/2019  02:17 PM               243 serializers.py
03/05/2019  04:29 PM                63 tests.py
03/26/2019  02:07 PM               321 views.py
03/05/2019  04:29 PM                 0 __init__.py
               7 File(s)          1,209 bytes
               3 Dir(s)  1,934,259,261,440 bytes free

(django-todo-react-qEQXqsZZ) E:\CSU\GitRepositories\Launchpad2018Project\ReactDjangoWebApp\django-todo-react\backend\tod
o>
```
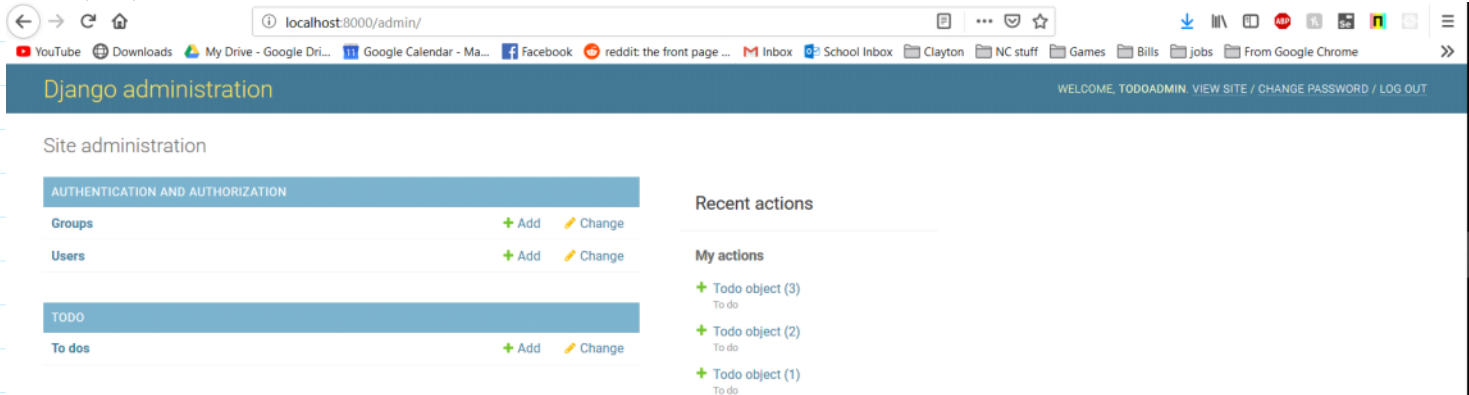*/

Set up appropriate APIs

7) Quit backend server temporarily
   a. restart server by entering python manage.py runserver. Note all things MUST be
      done in pipenv shell AND in the folder that contains manage.py folder.
8) Run: pipenv install djangorestframework django-cors-headers
   a. note: make sure settings.py/admin.py/and models.py are pushed into sanitized VMs.
      They are configuration settings that will break if you touch them.
9) Again: Ensure are copied over properly:
   a. serializers.py
   b. views.py
   c. urls.py
10) Restart server: python manage.py runserver
11) To test backend if running: go to: backendport/modelname; example:
    0.0.0.0:8000/admin/ will look like this:

BackendPT2: Database attachment
-Dangjo REST framework uses SQLite3 as a lightweight database to
contain it's information. This is because Dangjo is meant for websites
that has a small amount of traffic. As a result, no database
implementation will be needed.

FRONTEND:
You will need:
   NodeJS
   Create-react-app
   Lightweight frontend server(Like Yarn)

1) Open new cmd line and SSH into machine
2) Install lastest stable version of Nodejs(running as ubuntu commands to denote elevated rights
   needed)
   a. Cmd:
      sudo apt install nodejs npm
      Nodejs --version
      v.8.10.0
      Npm --version
      V3.5.2
      From <https://linuxize.com/post/how-to-install-node-js-on-ubuntu-18.04/>

3) Install create-react-app
   a. Cmd: npm install -g create-react-app
   b. Create a new react app
   c. and navigate to django-todo-react and start pipenv shell (If you start an install of pipenv,
      then you are NOT in the correct folder.
   d. Navigate to frontend
4) Start frontend server //I used yarn
   a. To install yarn: //MUST be installed in pipenv shell
      i. Cmd: sudo apt-get update && sudo apt-get install yarn
   b. Cmd: sudo yarn //installs appropriate dependencies

c. cmdL sudo yarn start //should look like this. On localhost a browser with the frontend opens:

```
Command Prompt - pipenv  shell - yarn  start                    —  □  ✕
Compiled successfully!

You can now view frontend in the browser.

  http://localhost:3000/

Note that the development build is not optimized.
To create a production build, use yarn build.
```
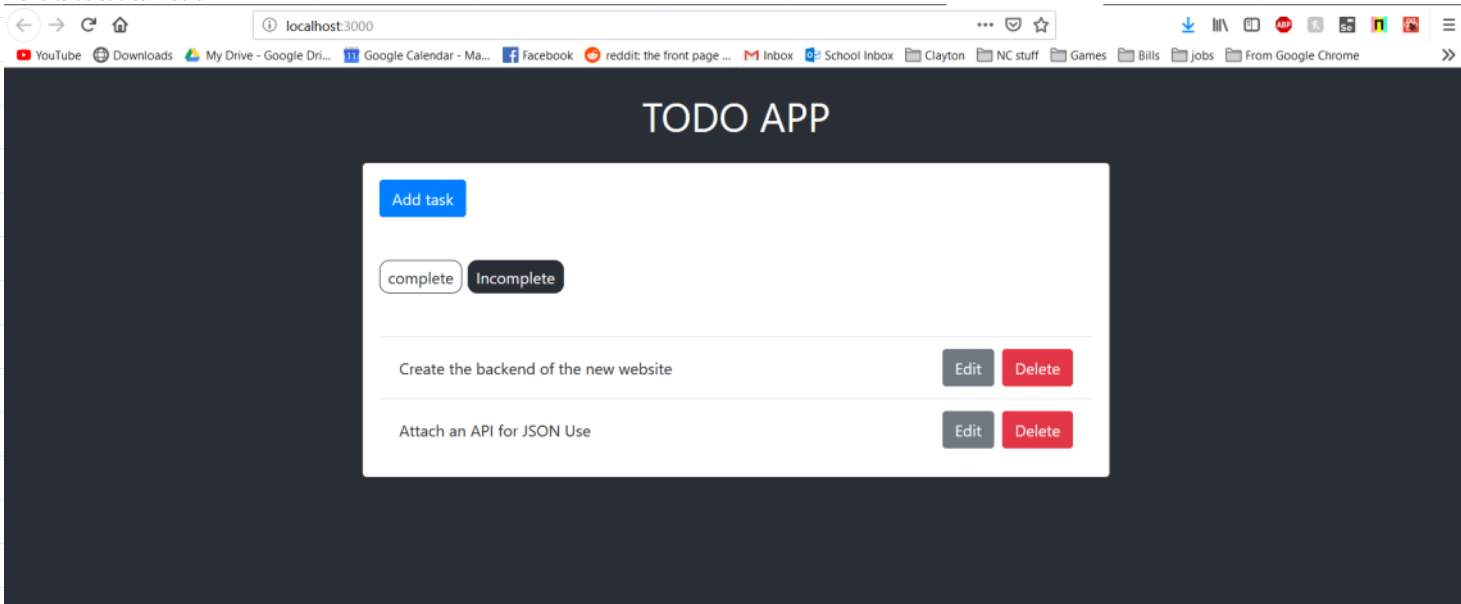
d. The frontend should look like this:

TODO APP

Add task

complete   Incomplete

Create the backend of the new website   Edit   Delete

Attach an API for JSON Use   Edit   Delete

e.

5) Will need to install axios and edit json package appropriately(see todo tutorial)
   a. Install axios: yarn add axios
   b. Add bootstrap to ensure it is installed properly
      i. Cmd: yarn add bootstrap reactstrap Should have the following versions:

```json
// frontend/package.json

[...]        "name": "frontend",
"version": "0.1.0",
"private": true,
"proxy": "http://localhost:8000",
"dependencies": {
  "axios": "^0.18.0",
  "bootstrap": "^4.1.3",
  "react": "^16.5.2",
  "react-dom": "^16.5.2",
  "react-scripts": "2.0.5",
  "reactstrap": "^6.5.0"
},
[...]
```
   ii.

   c. Restart yarn
6) Should be able to play with webapp. Things will be appropriately created and passed to backend

Ashley's TODO:
Creating tuser authentication and selenium test scripts

☐ ssh -i ./.ssh/gcloud2 swim@35.227.36.86

☐ scp -i ./.ssh/gcloud2 ./django-todo-react.tar swim@35.227.36.86:.

If wrong version of python installed:
https://jcutrer.com/linux/upgrade-python37-ubuntu1810

Django admin login: ToDoAdmin
Password: Swimming!

From <https://discordapp.com/channels/@me/506575831477256204/568249896889614347>

create the tar file

scp the tar up to the cloud

unzip the tar once in the cloud