## Verification of the python script in local computer:

1 A Python coded **app.py** file has been created with the functionalities for a login application, where I used wtforms, flask libraries. Wtforms python library is for creating forms, Flask as a framework to take actions when someone submits the form.

2 **templates/index.html** provides a designed user interface for our Login application, This file contains the HTML schema, flask and BootStrap. Bootstrap provides a pleasant theme, looking and more standard. This html file post  the credentials provided by the user to the python file and get the verification result.

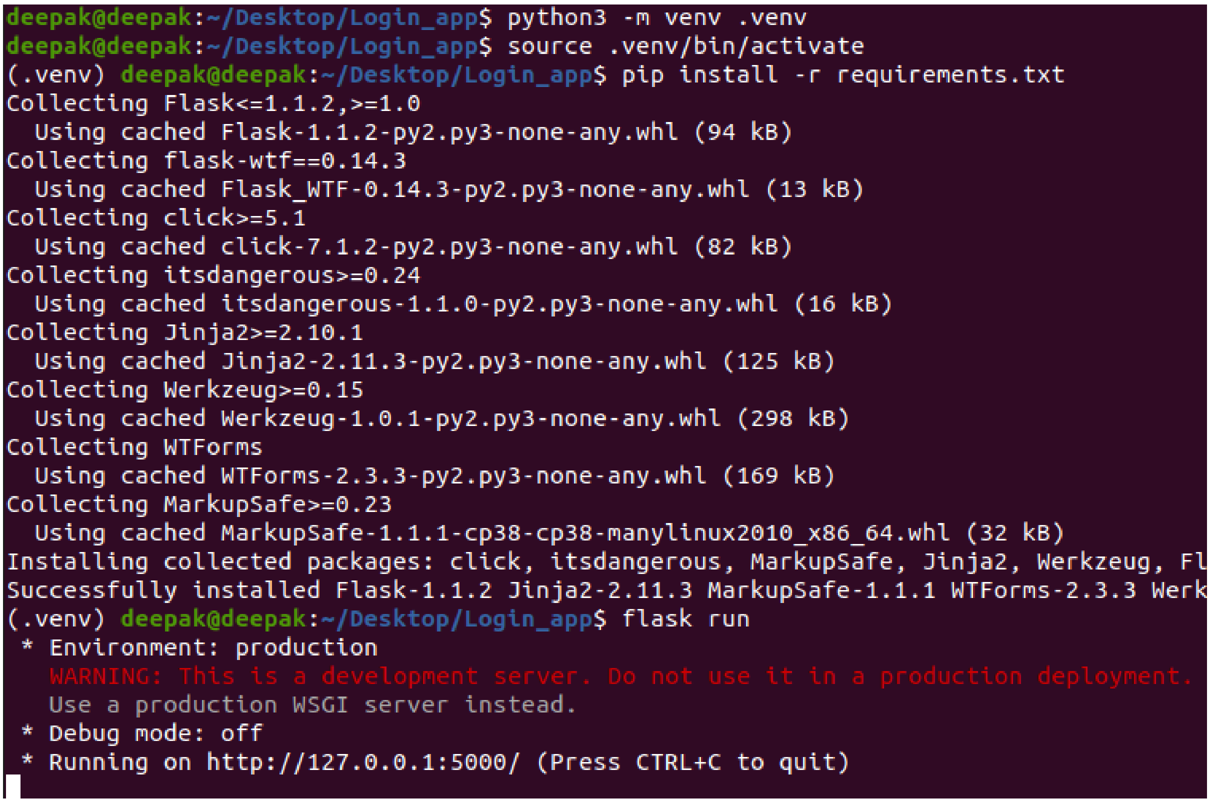
3 **requirements.txt** file contains the information of default flask and wtforms versions, that needs to be installed when the code runs anywhere.

4 The verification of the code can be done using command terminal, with below commands. This will create a similar environment to Azure locally.

```
python3 -m venv .venv
source .venv/bin/activate
pip install -r requirements.txt
```

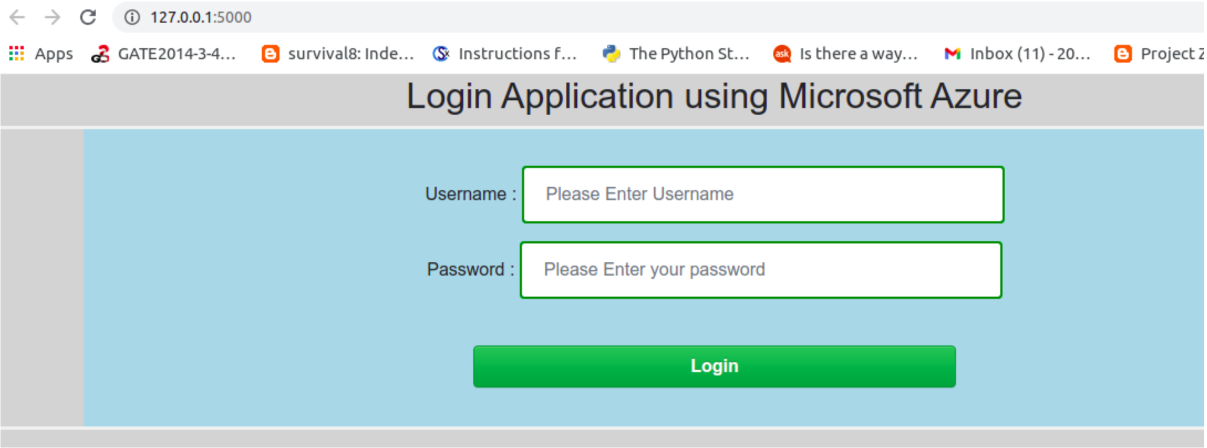
5 Below command, makes the login application gets hosted on http://127.0.0.1:5000/. **__pycache__** contains the byte code generated, as the code is compiled now.

```
flask run
```



```
deepak@deepak:~/Desktop/Login_app$ python3 -m venv .venv
deepak@deepak:~/Desktop/Login_app$ source .venv/bin/activate
(.venv) deepak@deepak:~/Desktop/Login_app$ pip install -r requirements.txt
Collecting Flask<=1.1.2,>=1.0
  Using cached Flask-1.1.2-py2.py3-none-any.whl (94 kB)
Collecting flask-wtf==0.14.3
  Using cached Flask_WTF-0.14.3-py2.py3-none-any.whl (13 kB)
Collecting click>=5.1
  Using cached click-7.1.2-py2.py3-none-any.whl (82 kB)
Collecting itsdangerous>=0.24
  Using cached itsdangerous-1.1.0-py2.py3-none-any.whl (16 kB)
Collecting Jinja2>=2.10.1
  Using cached Jinja2-2.11.3-py2.py3-none-any.whl (125 kB)
Collecting Werkzeug>=0.15
  Using cached Werkzeug-1.0.1-py2.py3-none-any.whl (298 kB)
Collecting WTForms
  Using cached WTForms-2.3.3-py2.py3-none-any.whl (169 kB)
Collecting MarkupSafe>=0.23
  Using cached MarkupSafe-1.1.1-cp38-cp38-manylinux2010_x86_64.whl (32 kB)
Installing collected packages: click, itsdangerous, MarkupSafe, Jinja2, Werkzeug, Fl
Successfully installed Flask-1.1.2 Jinja2-2.11.3 MarkupSafe-1.1.1 WTForms-2.3.3 Werk
(.venv) deepak@deepak:~/Desktop/Login_app$ flask run
 * Environment: production
   WARNING: This is a development server. Do not use it in a production deployment.
   Use a production WSGI server instead.
 * Debug mode: off
 * Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

Below verifies the validation of the python script, that is hosted on port 5000.

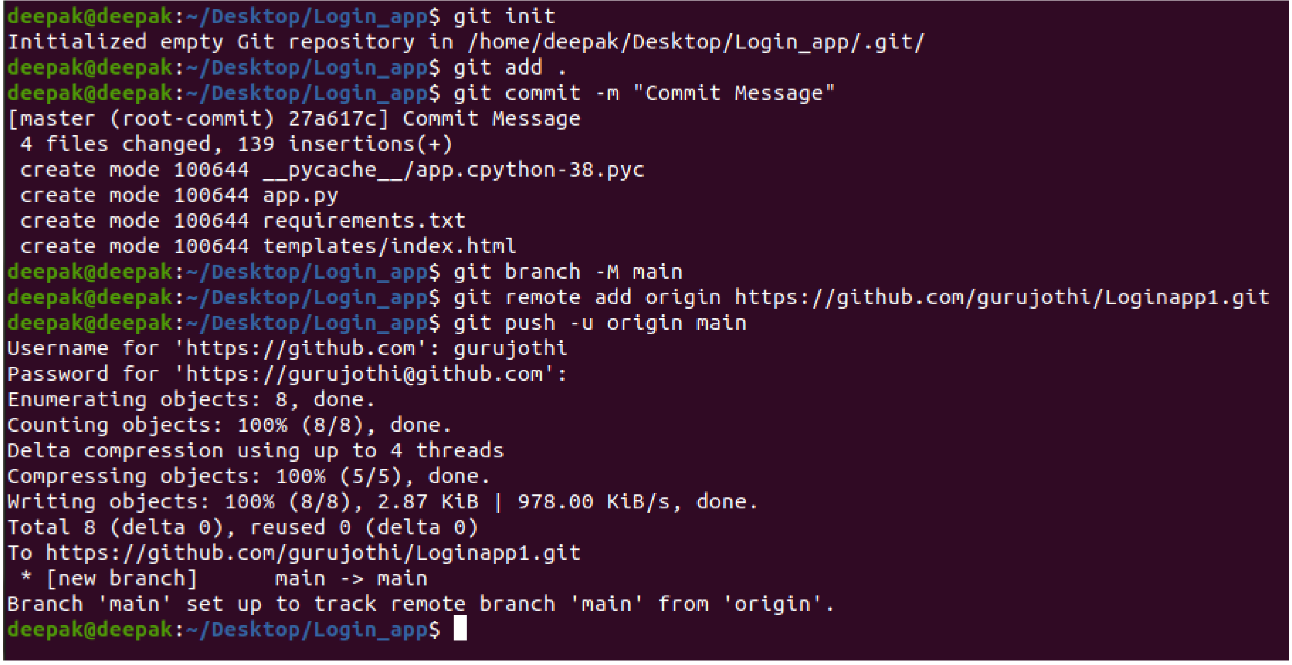


**Pushing the Application code to my github account, for a continuous and Integration deployment to cloud.**

1. Created a repository Loginapp1, in below github account. [https://github.com/gurujothi/Loginapp1](https://github.com/gurujothi/Loginapp1)

2. Using below commands in the terminal, the code is pushed to the above repository's main branch.

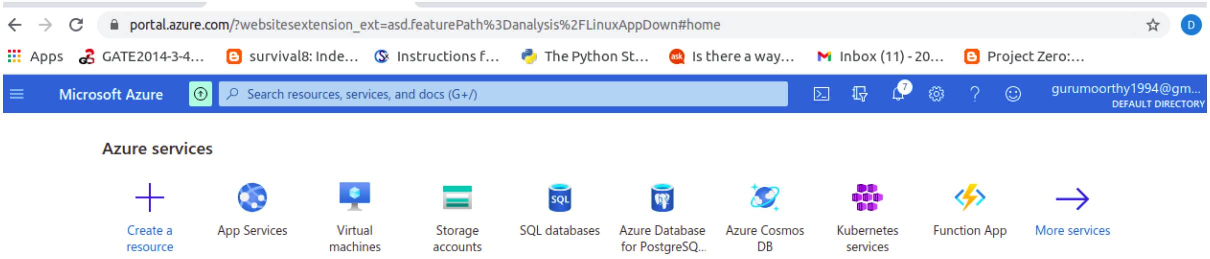
```
git init
git add .
git commit -m "Commit Message"
git branch -M main
git remote add origin https://github.com/gurujothi/Loginapp1.git
git push -u origin main
```



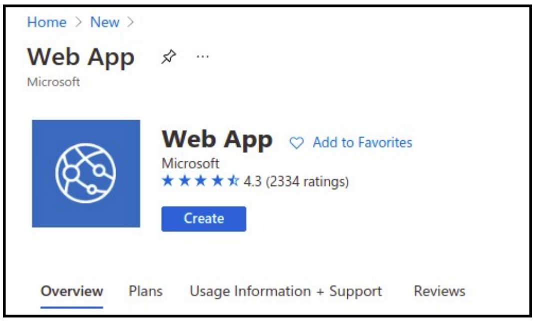
```
deepak@deepak:~/Desktop/Login_app$ git init
Initialized empty Git repository in /home/deepak/Desktop/Login_app/.git/
deepak@deepak:~/Desktop/Login_app$ git add .
deepak@deepak:~/Desktop/Login_app$ git commit -m "Commit Message"
[master (root-commit) 27a617c] Commit Message
 4 files changed, 139 insertions(+)
 create mode 100644 __pycache__/app.cpython-38.pyc
 create mode 100644 app.py
 create mode 100644 requirements.txt
 create mode 100644 templates/index.html
deepak@deepak:~/Desktop/Login_app$ git branch -M main
deepak@deepak:~/Desktop/Login_app$ git remote add origin https://github.com/gurujothi/Loginapp1.git
deepak@deepak:~/Desktop/Login_app$ git push -u origin main
Username for 'https://github.com': gurujothi
Password for 'https://gurujothi@github.com':
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (8/8), 2.87 KiB | 978.00 KiB/s, done.
Total 8 (delta 0), reused 0 (delta 0)
To https://github.com/gurujothi/Loginapp1.git
 * [new branch]      main -> main
Branch 'main' set up to track remote branch 'main' from 'origin'.
deepak@deepak:~/Desktop/Login_app$
```

## Deployment of Login application in Cloud, using Microsoft Azure with Continuous Integration and Deployment(with Github)

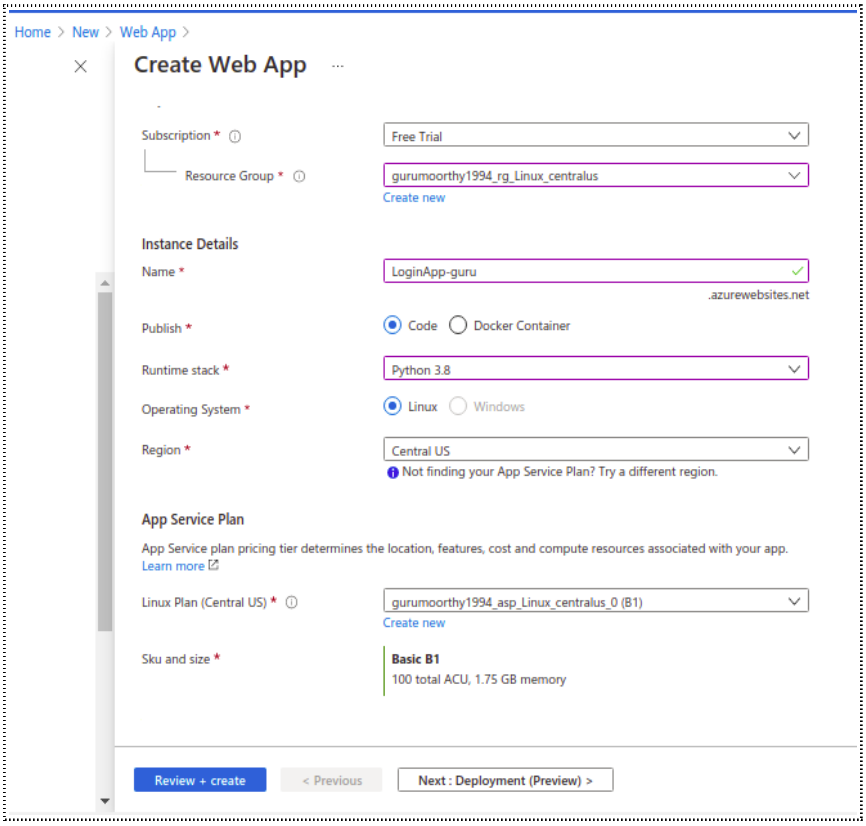
Login to the Microsoft Azure Account. I have a Free Trial Subscription.



Click **Create a Resource**. Search and Select **Webapp**. We need to create webapp in cloud, that will have our code.



On the Basis tab, mention the necesssary details, as below. I named my web app instance as **LoginApp-guru**, and the region to deploy is Central US. Need to chose Runtime stack as Python 3.8, as same as our code. Finally Review and create.



Subscription * Free Trial

Resource Group * gurumoorthy1994_rg_Linux_centralus

Create new

Instance Details

Name * LoginApp-guru .azurewebsites.net

Publish * ● Code ○ Docker Container

Runtime stack * Python 3.8

Operating System * ● Linux ○ Windows

Region * Central US

Not finding your App Service Plan? Try a different region.

App Service Plan

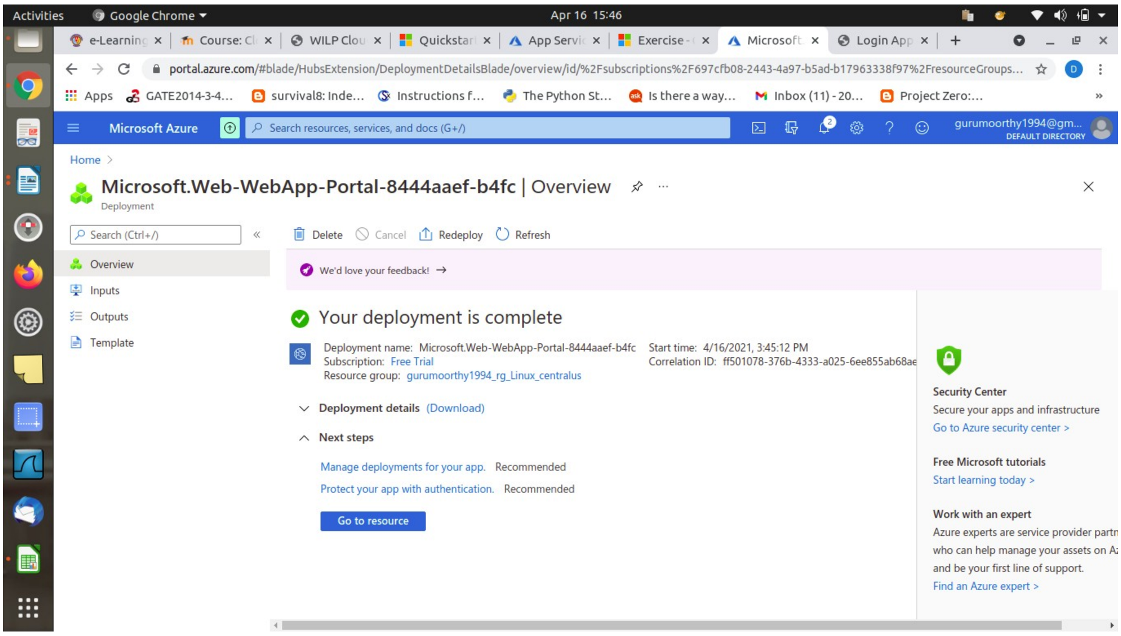
App Service plan pricing tier determines the location, features, cost and compute resources associated with your app. Learn more

Linux Plan (Central US) * gurumoorthy1994_asp_Linux_centralus_0 (B1)

Create new

Sku and size * Basic B1 100 total ACU, 1.75 GB memory

Once we click create, The deployment of our web app **LoginApp-guru** will start and gets to complete as below.



Activities
Google Chrome
Apr 16 15:46
portal.azure.com/#blade/HubsExtension/DeploymentDetailsBlade/overview/id/%2Fsubscriptions%2F697cfb08-2443-4a97-b5ad-b17963338f97%2FresourceGroups...
Microsoft Azure
Search resources, services, and docs (G+/)
gurumoorthy1994@gm...
DEFAULT DIRECTORY
Home
Search (Ctrl+/)
Overview
Inputs
Outputs
Template
Delete
Cancel
Redeploy
Refresh
We'd love your feedback! →
Go to resource

Microsoft.Web-WebApp-Portal-8444aaef-b4fc | Overview

Deployment

Your deployment is complete

Deployment name: Microsoft.Web-WebApp-Portal-8444aaef-b4fc
Subscription: Free Trial
Resource group: gurumoorthy1994_rg_Linux_centralus

Start time: 4/16/2021, 3:45:12 PM
Correlation ID: ff501078-376b-4333-a025-6ee855ab68ae

Deployment details (Download)

Next steps

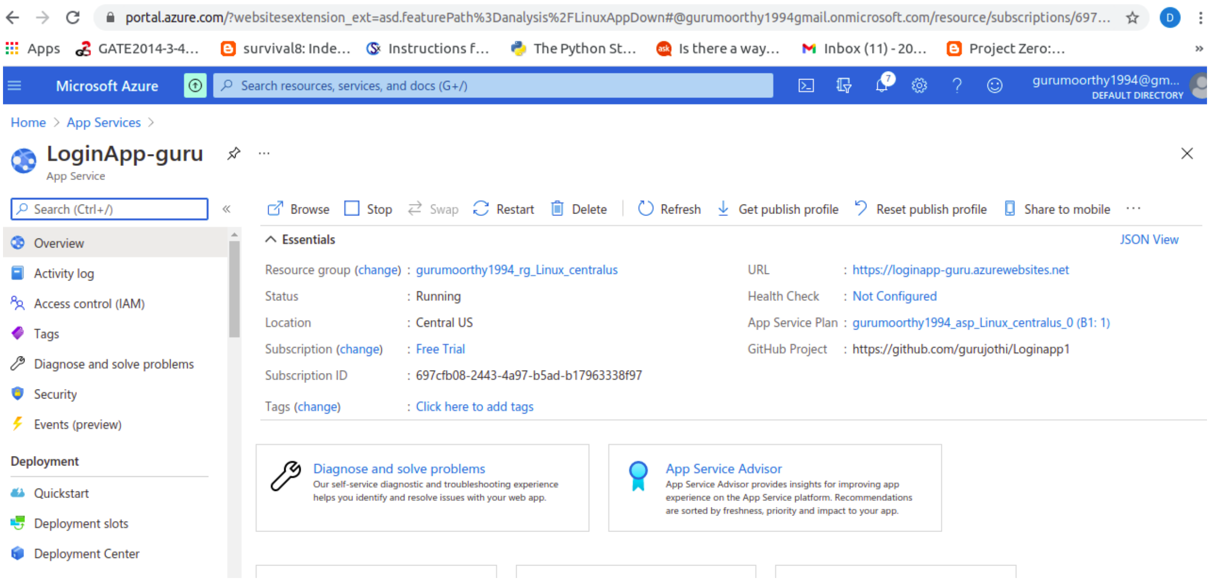
Manage deployments for your app. Recommended
Protect your app with authentication. Recommended

Security Center
Secure your apps and infrastructure
Go to Azure security center >

Free Microsoft tutorials
Start learning today >

Work with an expert
Azure experts are service provider partn
who can help manage your assets on Az
and be your first line of support.
Find an Azure expert >

Click **Go to resource,** after the deployment complete, we will get all the details of the webapp.



LoginApp-guru

App Service

Essentials

Resource group (change) : gurumoorthy1994_rg_Linux_centralus
Status : Running
Location : Central US
Subscription (change) : Free Trial
Subscription ID : 697cfb08-2443-4a97-b5ad-b17963338f97
Tags (change) : Click here to add tags

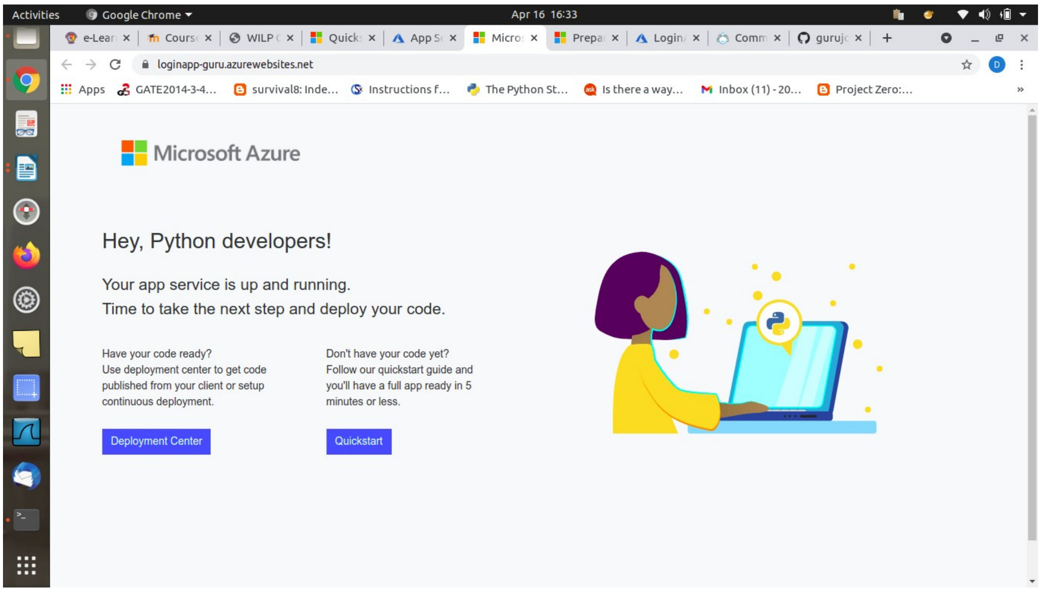
URL : https://loginapp-guru.azurewebsites.net
Health Check : Not Configured
App Service Plan : gurumoorthy1994_asp_Linux_centralus_0 (B1: 1)
GitHub Project : https://github.com/gurujothi/Loginapp1

Diagnose and solve problems
Our self-service diagnostic and troubleshooting experience helps you identify and resolve issues with your web app.

App Service Advisor
App Service Advisor provides insights for improving app experience on the App Service platform. Recommendations are sorted by freshness, priority and impact to your app.

Now the app service started to running. And we can access cloud hosted site as below.

<webapp-name>.azurewebsites.net
i.e. loginapp-guru.azurewebsites.net



Microsoft Azure

Hey, Python developers!

Your app service is up and running.
Time to take the next step and deploy your code.

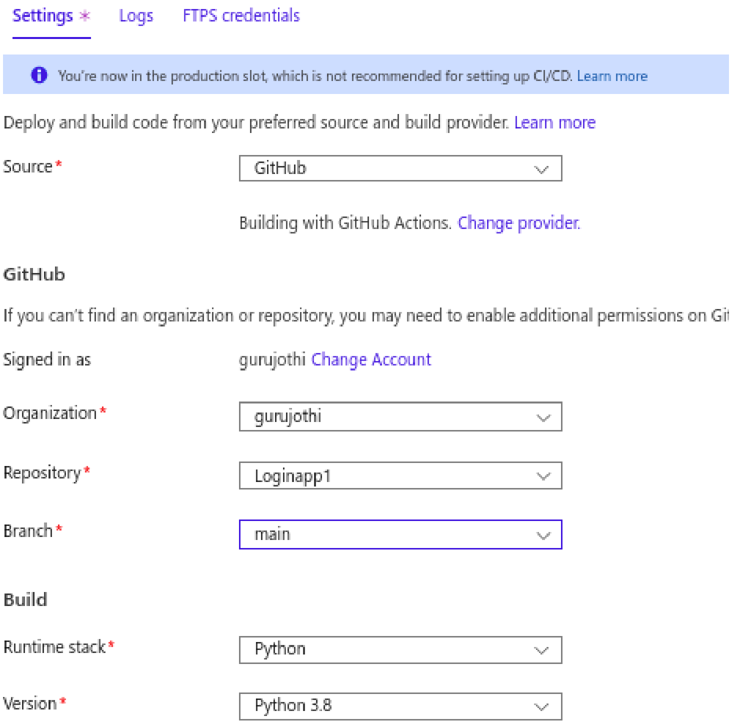
Have your code ready?
Use deployment center to get code published from your client or setup continuous deployment.

Don't have your code yet?
Follow our quickstart guide and you'll have a full app ready in 5 minutes or less.

We did not configure our github repository to the web app **LoginApp-guru.** This is the reason, that above web site looks like azure UI.

Configuring the webapp with my github repository

Click Deployment center(under Deployment) in the left pane of our web app **LoginApp-guru.** First our Github account to be authorised and can provide our details. The Source – Github, Organisation – gurujothi, repository - Loginapp1, Branch – main. And Save.



You're now in the production slot, which is not recommended for setting up CI/CD. Learn more

Deploy and build code from your preferred source and build provider. Learn more

Source * GitHub

Building with GitHub Actions. Change provider.

GitHub

If you can't find an organization or repository, you may need to enable additional permissions on Gi

Signed in as gurujothi Change Account

Organization * gurujothi

Repository * Loginapp1

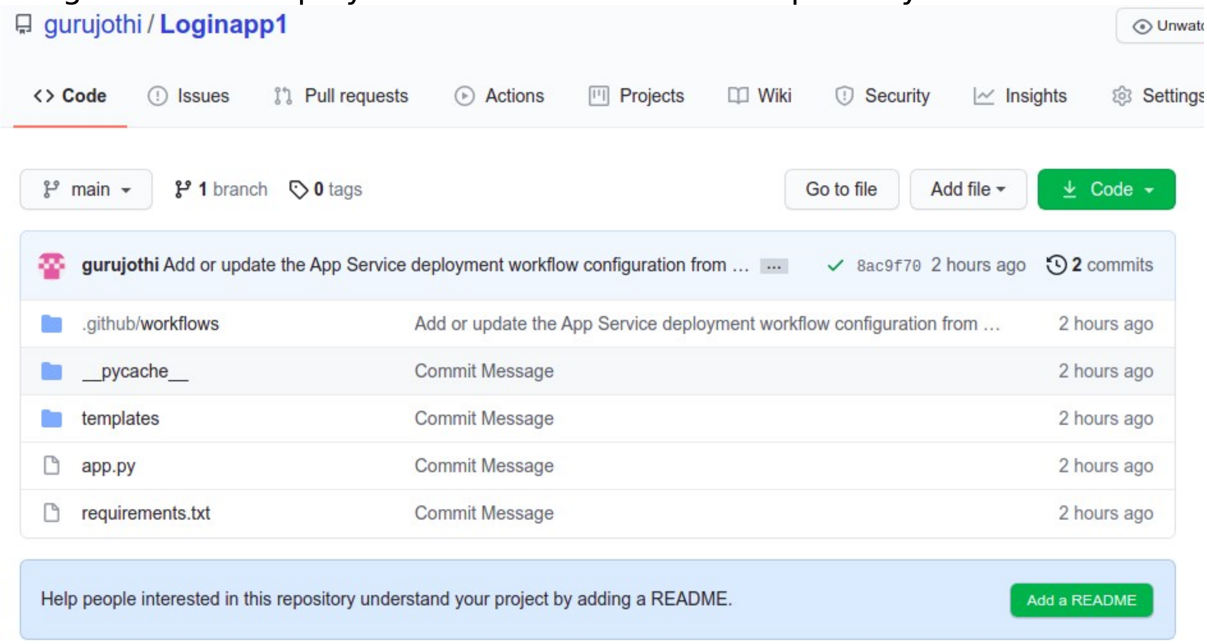
Branch * main

Build

Runtime stack * Python

Version * Python 3.8

As soon as we save, **.github/workflows** directory will be created to our repository, This workflow configuration makes sure the continuous integration and deployment of our code in this repository.

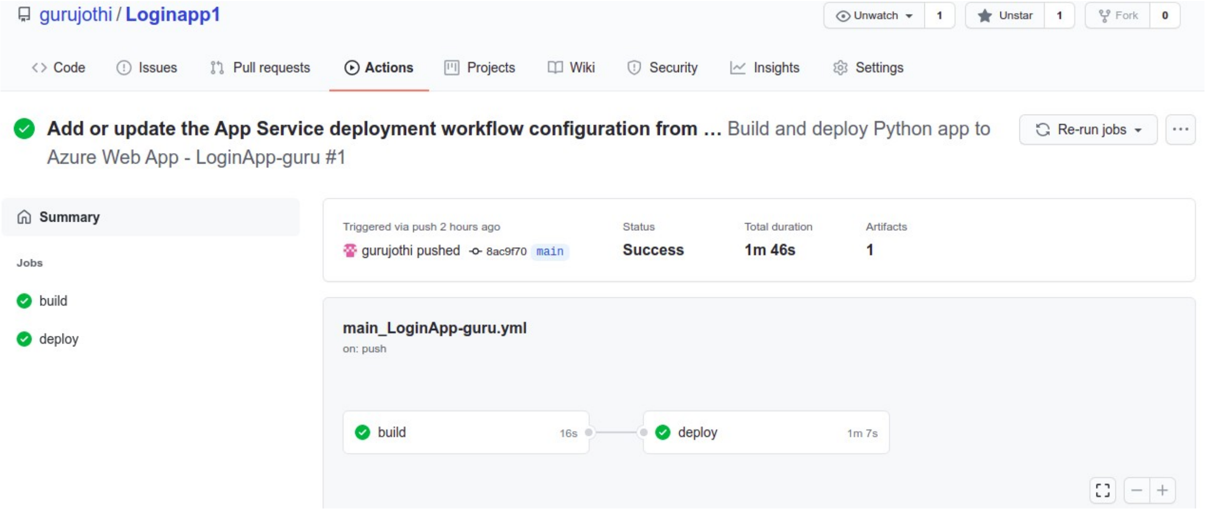


**gurujothi** Add or update the App Service deployment workflow configuration from … ✓ 8ac9f70 2 hours ago 2 commits

| | | |
|---|---|---|
| .github/workflows | Add or update the App Service deployment workflow configuration from … | 2 hours ago |
| __pycache__ | Commit Message | 2 hours ago |
| templates | Commit Message | 2 hours ago |
| app.py | Commit Message | 2 hours ago |
| requirements.txt | Commit Message | 2 hours ago |

Help people interested in this repository understand your project by adding a README.

If we check on the Actions tab in GitHub, we can see the progress of our app build to cloud and monitor its success deploy. If fails, we can check the logs here in Actions tab.



✓ **Add or update the App Service deployment workflow configuration from …** Build and deploy Python app to Azure Web App - LoginApp-guru #1

Triggered via push 2 hours ago
gurujothi pushed 8ac9f70 main

Status: **Success**

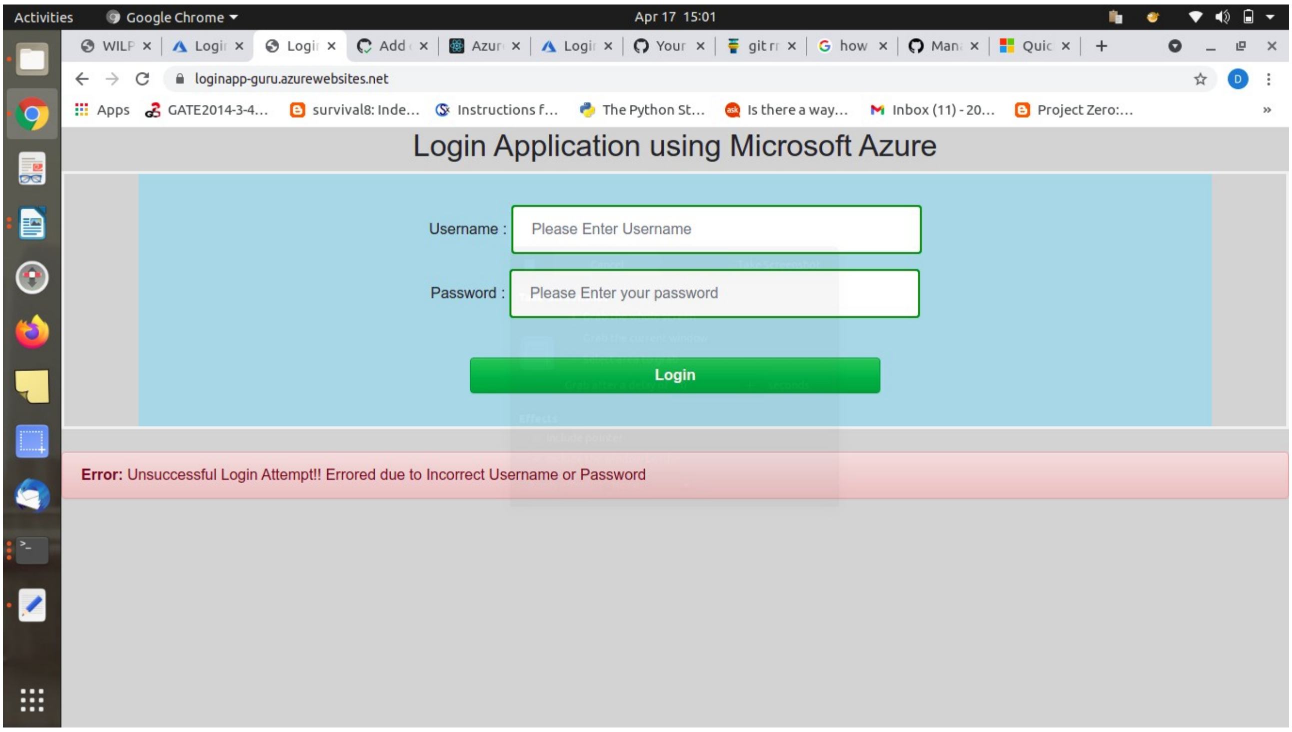
Total duration: **1m 46s**

Artifacts: **1**

**main_LoginApp-guru.yml**
on: push

✓ build 16s → ✓ deploy 1m 7s

Finally, if we acces the web app again, loginapp-guru.azurewebsites.net,which hosted as a PAAS service in Microsoft Azure.



Login Application using Microsoft Azure

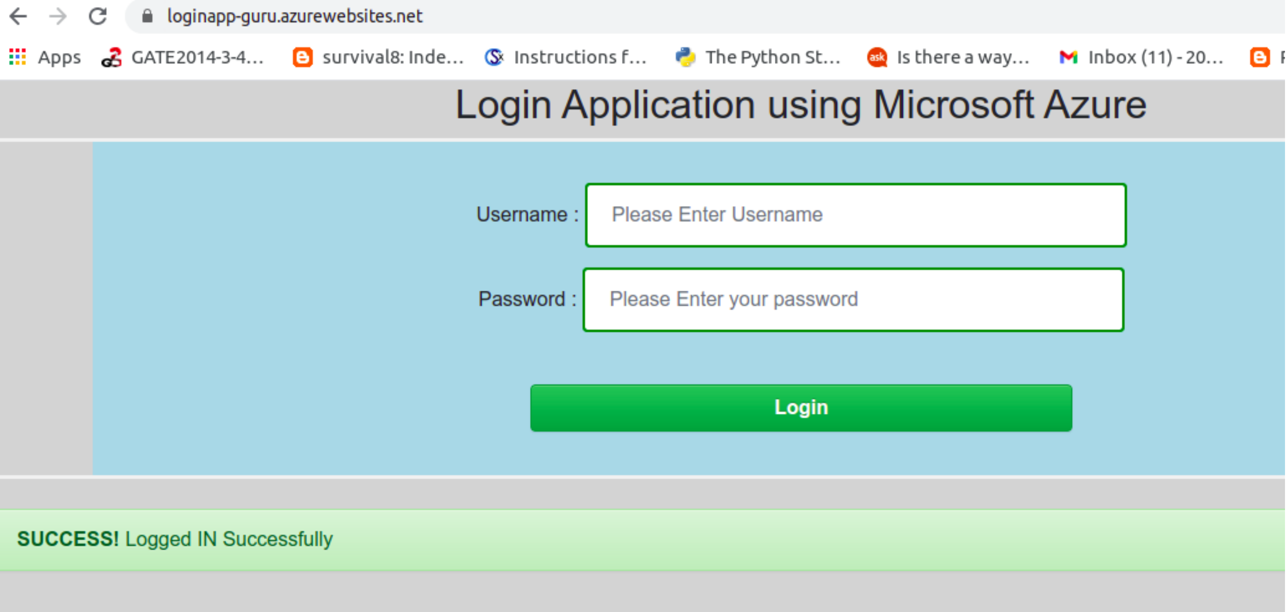
Username : Please Enter Username

Password : Please Enter your password

Login

**Error:** Unsuccessful Login Attempt!! Errored due to Incorrect Username or Password

If we give correct credential,
Username: Gurumoorthy, password: password
We are able to see the login message.



Login Application using Microsoft Azure

Username : Please Enter Username

Password : Please Enter your password

Login

**SUCCESS!** Logged IN Successfully

Please note that if any change in github repository main branch, that will affect our code in the loginapp-guru webapplication.