

1. Glassfish server installation and running java servlet application:

i. Checking if java is installed in the system:

java -version

ii. If java is not installed we can install it by running the command :

#sudo apt-get install openjdk-8-jre

iii. We need to locate java's installation directory, export a **JAVA_HOME** variable from the ~/.profile file and append its path to bin directory to our PATH variable in ~/.profile file.

```
export FISH="/opt/glassfish5/bin"
export GO_PATH="/usr/local/go/bin"
export JAVA_HOME="/usr/lib/jvm/java-1.8.0-openjdk-amd64"
export CHROME_DRIVER="/home/manish/Documents/apps"
export PATH="$FISH:$PATH:$FLUTTER_PATH:$JAVA_HOME/bin:$ADB_PATH:$CHROME_DRIVER:$GO_PATH"
```

We can apply the changes running :

source ~/.profile

iv. Now we can download and install java glassfish server:

The java glassfish server 4.4.1 zip file was downloaded from:

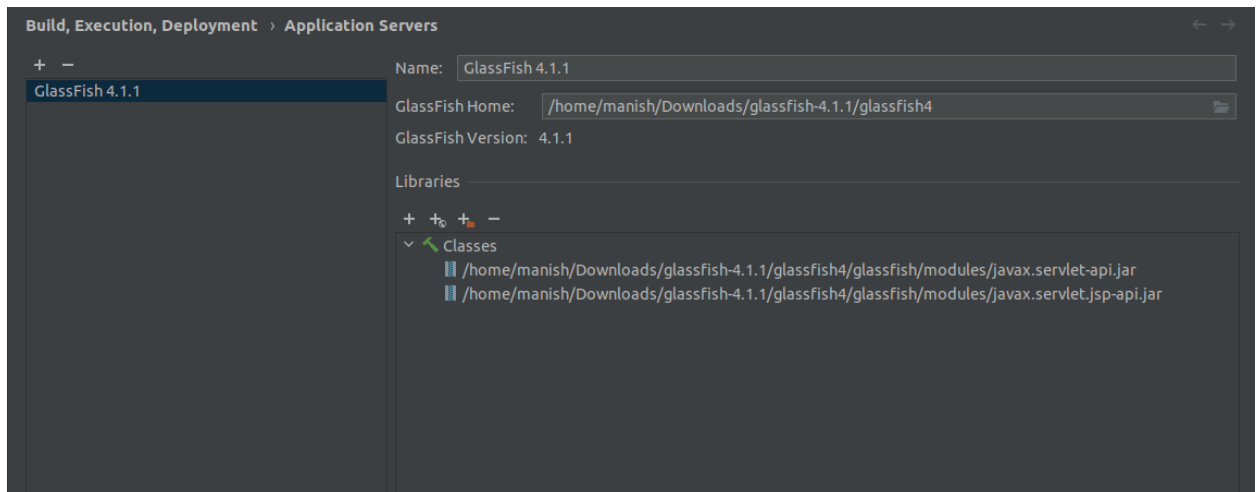
<https://download.oracle.com/glassfish/4.1.1/release/glassfish-4.1.1.zip>

The glassfish-4.1.1.zip file was extracted using the **unzip** command:

unzip glassfish-4.1.1.

v. Created a new java 8 ee web application with maven using IntelliJ idea

vi. In IntelliJ's application server settings, added glassfish's extracted path.



vii. Edited the pom.xml to set packaging to war
<packaging> war</packaging>

```
<groupId>com.example</groupId>
<artifactId>demo</artifactId>
<version>1.0-SNAPSHOT</version>
<name>demo</name>
<packaging>war</packaging>
<properties>
```

viii. Edited the domain.xml file and edited the http server port from 8080 to 8088.
The config file is present in :

glassfish-4.1.1/glassfish4/glassfish/domains/domain1/config/

```
<ssl classname="com.sun.enterprise.security.ssl.GlassfishSSLImpl" ce
rt-nickname="s1as"></ssl>
</protocol>
<protocol name="admin-listener">
  <http encoded-slash-enabled="true" max-connections="250" default-vir
tual-server="__asadmin">
    <file-cache></file-cache>
  </http>
</protocol>
</protocols>
<network-listeners>
  <network-listener protocol="http-listener-1" port="8088" name="http-li
stener-1" thread-pool="http-thread-pool" transport="tcp"></network-listener>
  <network-listener protocol="http-listener-2" port="8181" name="http-li
stener-2" thread-pool="http-thread-pool" transport="tcp"></network-listener>
  <network-listener protocol="admin-listener" port="4848" name="admin-li
stener" thread-pool="admin-thread-pool" transport="tcp"></network-listener>
</network-listeners>
<transports>
  <transport name="tcp"></transport>
</transports>
</network-config>
<thread-pools>
```

ix. opened the admin page of the glassfish server and uploaded the demo war file generated in the source project folder using maven's war plugin.

Also, the war file can be generated by running the command :

mvn package

```
[INFO] Building demo 1.0-SNAPSHOT
[INFO] -----[ war ]-----
[INFO]
[INFO] --- maven-war-plugin:3.3.1:war (default-cli) @ demo ---
[INFO] Packaging webapp
[INFO] Assembling webapp [demo] in [/home/manish/IdeaProjects/demo/target/demo-1.0-SNAPSHOT]
[INFO] Processing war project
[INFO] Copying webapp resources [/home/manish/IdeaProjects/demo/src/main/webapp]
[INFO] Building war: /home/manish/IdeaProjects/demo/target/demo-1.0-SNAPSHOT.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.132 s
[INFO] Finished at: 2021-11-12T21:27:35+05:45
[INFO] -----
Process finished with exit code 0
```

Deploy Applications or M x

localhost:4848/common/index.jsf

profiles icon gh-act iPh json comp qt kube npuc s regex cour kube gre ui inern vim store app Other Bookmarks

Home About... Help

User: admin Domain: domain1 Server: localhost

GlassFish™ Server Open Source Edition

Tree

Common Tasks

Domain

- server (Admin Server)
- Clusters
- Standalone Instances

Nodes

- Applications

Lifecycle Modules

- Monitoring Data

Resources

- Concurrent Resources
- Connectors
- JDBC
- JMS Resources
- JNDI
- JavaMail Sessions
- Resource Adapter Configs

Configurations

- default-config
- server-config
- Update Tool

Deploy Applications or Modules

OK Cancel

Specify the location of the application or module to deploy. An application can be in a packaged file or specified as a directory.

* Indicates required field

Location:

☒ Packaged File to Be Uploaded to the Server

☐ Local Packaged File or Directory That Is Accessible from GlassFish Server

Browse...

demo-1.0-SNAPSHOT.war

Browse Files

Browse Folders...

Type: *

Web Application

Context Root:

Path relative to server's base URL.

Application Name: *

demo-1.0-SNAPSHOT

Virtual Servers:

server

Associates an Internet domain name with a physical server.

Status:

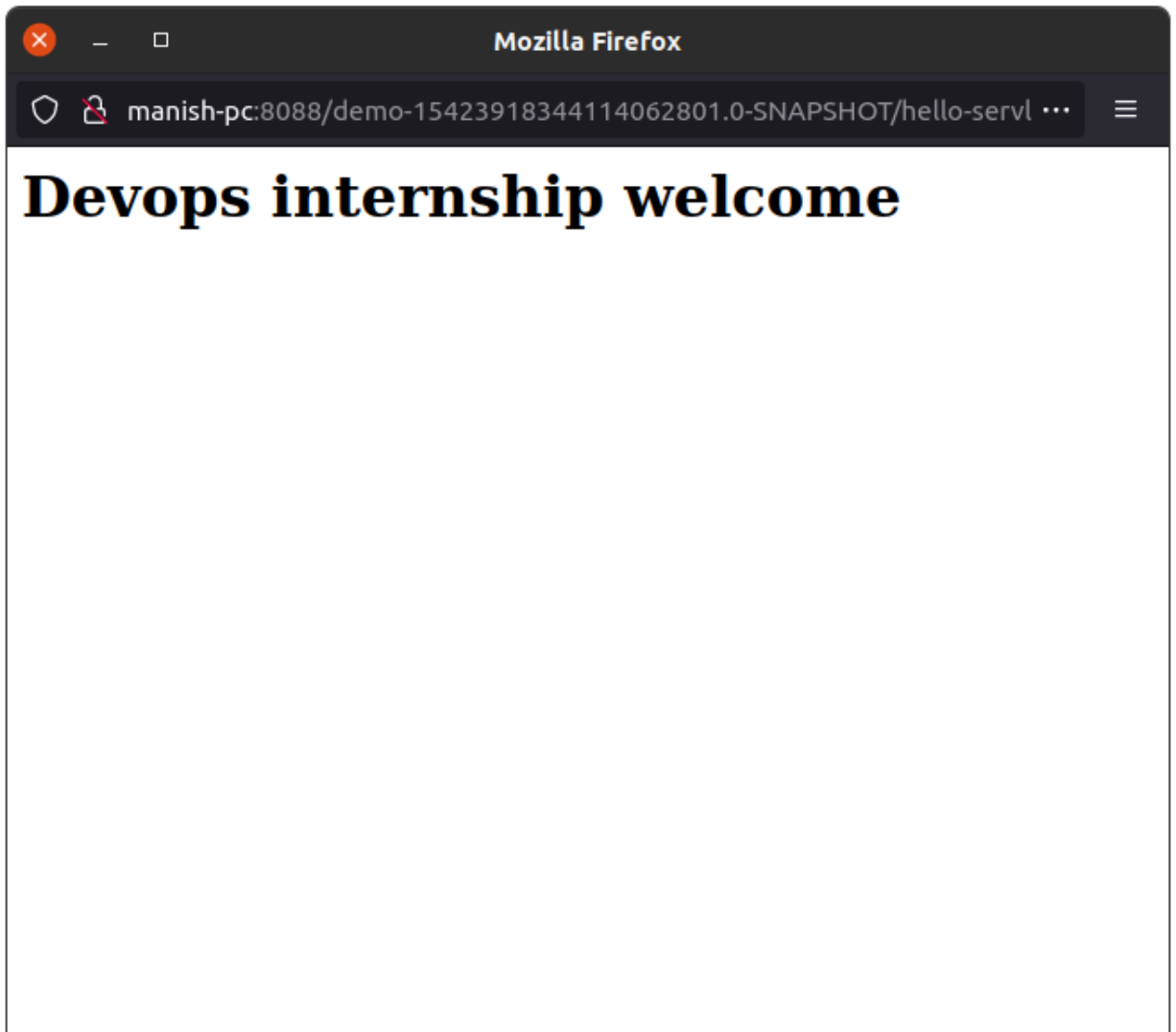
☒ Enabled

Allows users to access the application.

Implicit CDI

☒ Enabled

Implicit discovery of CDI beans

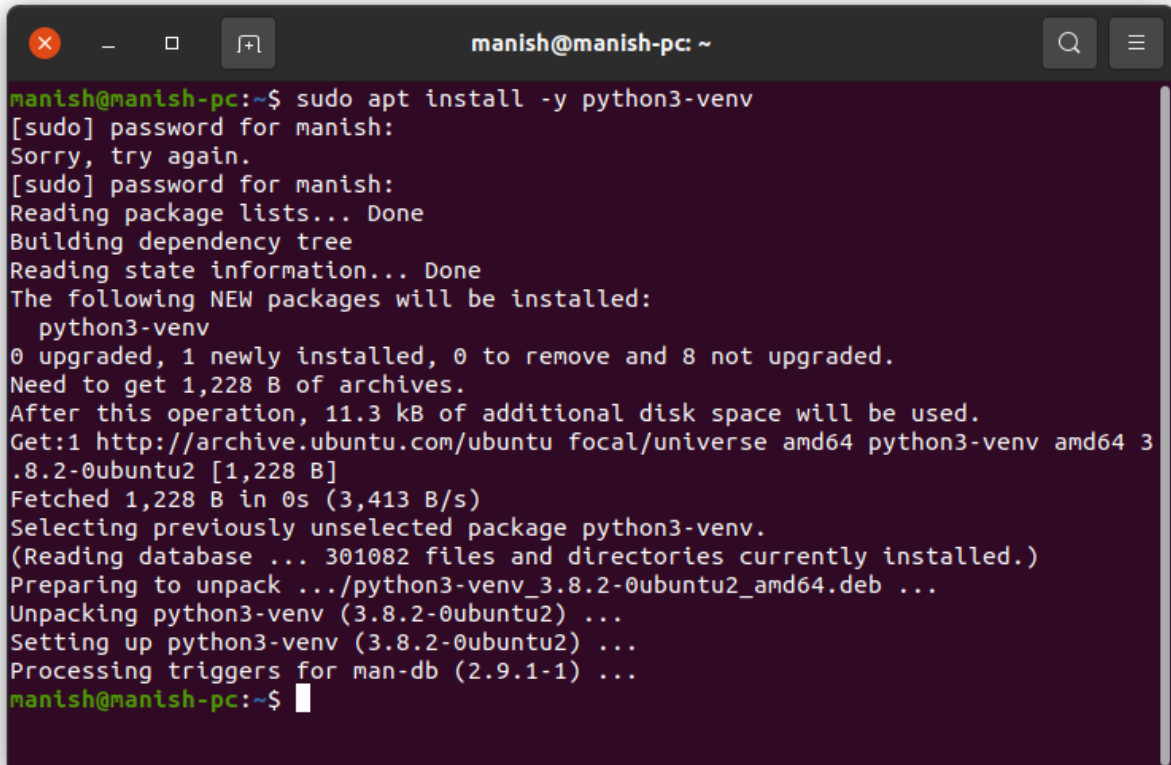


2. Django app deployment with Gunicorn app server

There are the following steps for deploying a django app in a gunicorn server:

1. Install python, pip and python virtual env
 - pip was installed in the system with
sudo apt install -y pip3

- Python virtual environment was installed using
sudo apt install -y python3-venv

A terminal window titled 'manish@manish-pc: ~' with standard Ubuntu window controls. The terminal output shows the command 'sudo apt install -y python3-venv' being executed. It prompts for a password, shows progress for reading package lists and building the dependency tree, and lists the new packages to be installed. It then shows the disk space requirements and the download of the package from the Ubuntu archive. Finally, it shows the unpacking and setting up of the python3-venv package, and the processing of triggers for man-db.

```
manish@manish-pc:~$ sudo apt install -y python3-venv
[sudo] password for manish:
Sorry, try again.
[sudo] password for manish:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  python3-venv
0 upgraded, 1 newly installed, 0 to remove and 8 not upgraded.
Need to get 1,228 B of archives.
After this operation, 11.3 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu focal/universe amd64 python3-venv amd64 3
.8.2-0ubuntu2 [1,228 B]
Fetched 1,228 B in 0s (3,413 B/s)
Selecting previously unselected package python3-venv.
(Reading database ... 301082 files and directories currently installed.)
Preparing to unpack .../python3-venv_3.8.2-0ubuntu2_amd64.deb ...
Unpacking python3-venv (3.8.2-0ubuntu2) ...
Setting up python3-venv (3.8.2-0ubuntu2) ...
Processing triggers for man-db (2.9.1-1) ...
manish@manish-pc:~$
```

2. Create a virtual env named venv and activate it
 - A virtual environment named venv was created in a new directory using

python3 -m venv venv

- Venv is activated with :

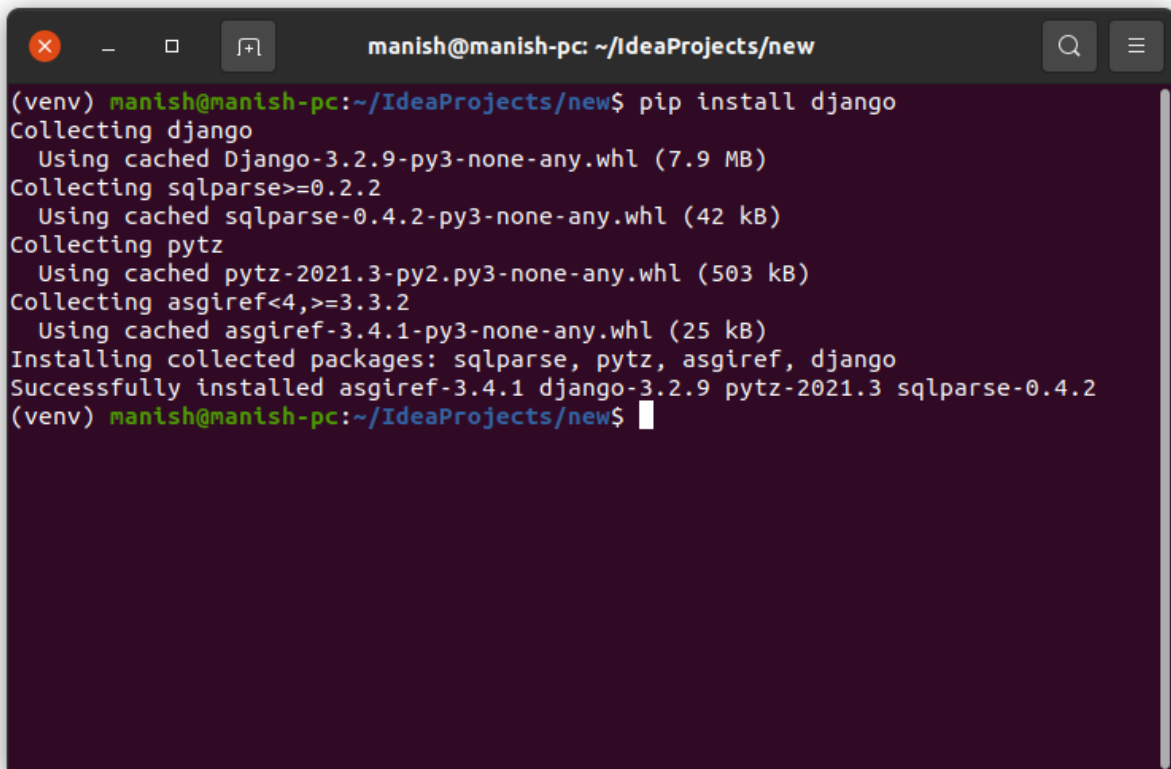
source ./venv/bin/activate

```
manish@manish-pc:~/IdeaProjects/new$ ls
venv
manish@manish-pc:~/IdeaProjects/new$ source venv/bin/activate
(venv) manish@manish-pc:~/IdeaProjects/new$
```

3. Install django and gunicorn packages in the venv

- django is installed with pip:

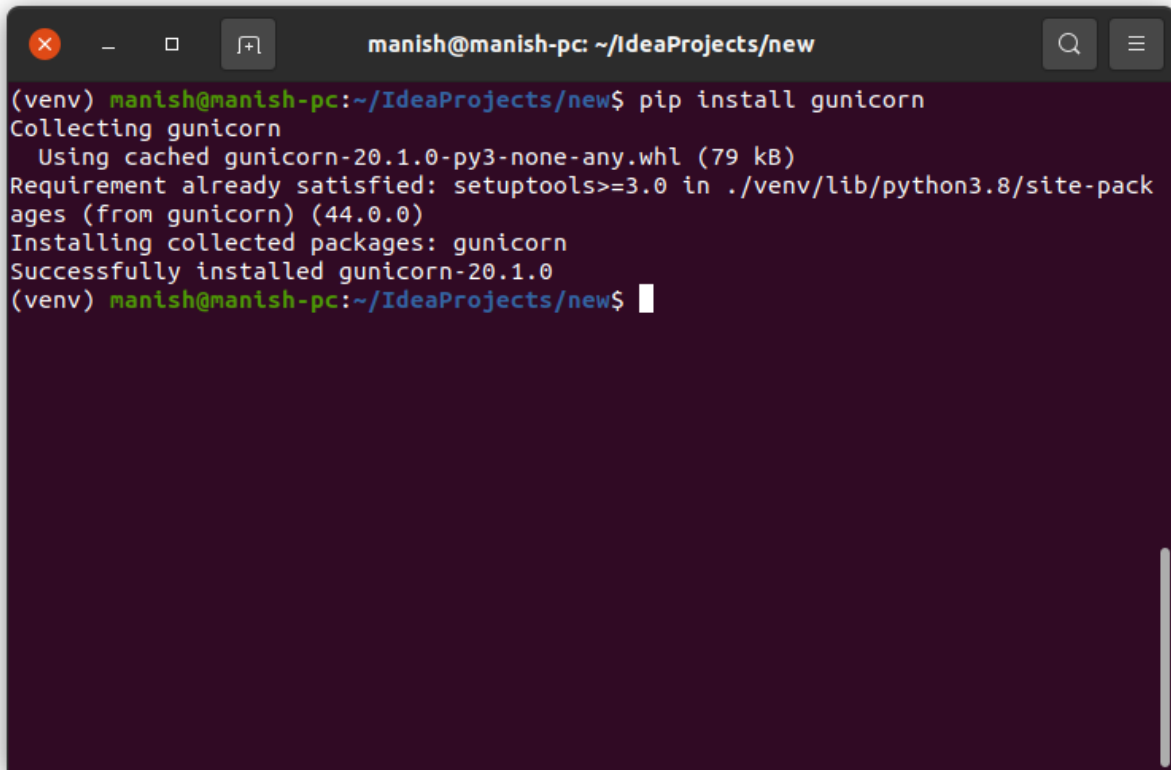
pip install django



```
manish@manish-pc: ~/IdeaProjects/new
(venv) manish@manish-pc:~/IdeaProjects/new$ pip install django
Collecting django
  Using cached Django-3.2.9-py3-none-any.whl (7.9 MB)
Collecting sqlparse>=0.2.2
  Using cached sqlparse-0.4.2-py3-none-any.whl (42 kB)
Collecting pytz
  Using cached pytz-2021.3-py2.py3-none-any.whl (503 kB)
Collecting asgiref<4,>=3.3.2
  Using cached asgiref-3.4.1-py3-none-any.whl (25 kB)
Installing collected packages: sqlparse, pytz, asgiref, django
Successfully installed asgiref-3.4.1 django-3.2.9 pytz-2021.3 sqlparse-0.4.2
(venv) manish@manish-pc:~/IdeaProjects/new$
```

- gunicorn is installed with pip :

pip install gunicorn

A terminal window with a dark purple background. The title bar shows 'manish@manish-pc: ~/IdeaProjects/new'. The terminal text shows the command 'pip install gunicorn' being executed in a virtual environment. The output indicates that gunicorn-20.1.0 is being collected from a cache, that the setup tools requirement is satisfied, and that the package is successfully installed.

```
(venv) manish@manish-pc:~/IdeaProjects/new$ pip install gunicorn
Collecting gunicorn
  Using cached gunicorn-20.1.0-py3-none-any.whl (79 kB)
Requirement already satisfied: setuptools>=3.0 in ./venv/lib/python3.8/site-pack
ages (from gunicorn) (44.0.0)
Installing collected packages: gunicorn
Successfully installed gunicorn-20.1.0
(venv) manish@manish-pc:~/IdeaProjects/new$
```

4. Create a django project:

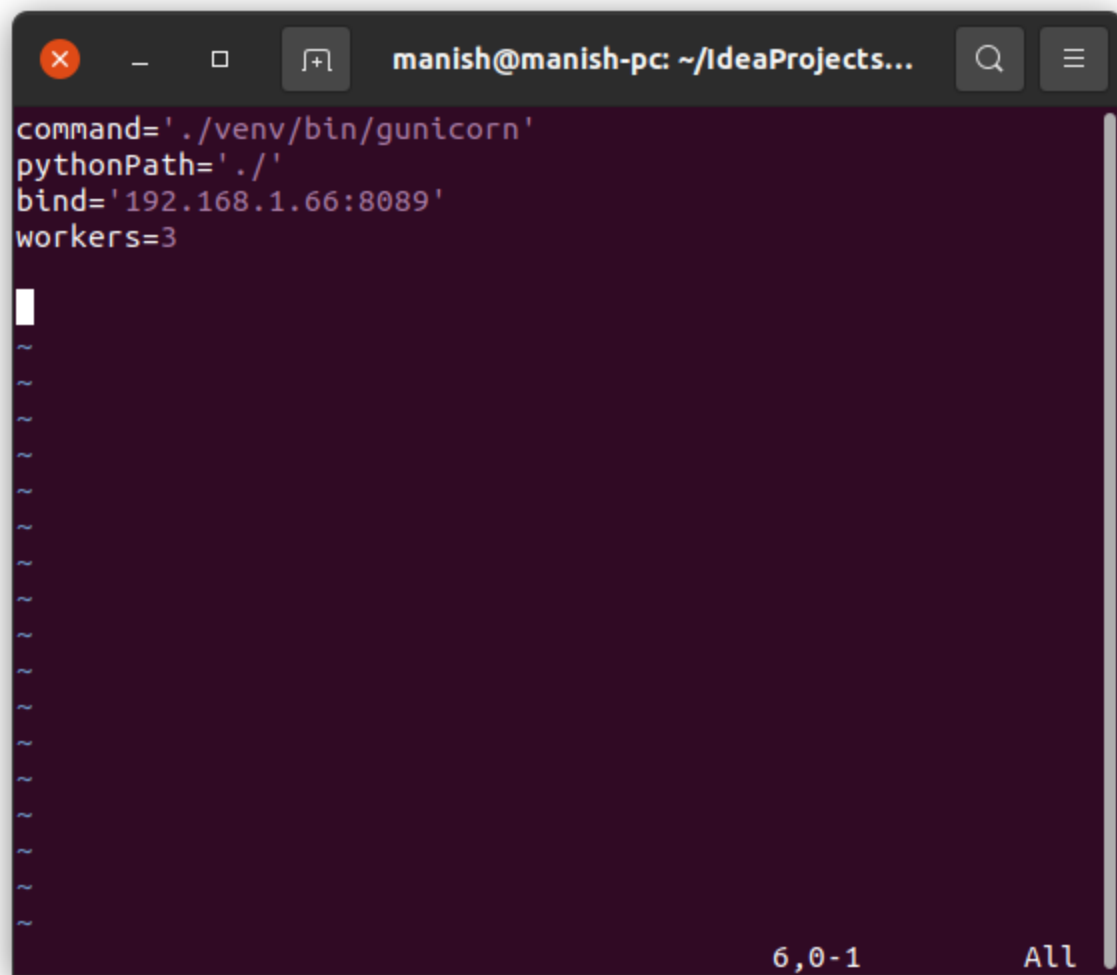
- a new django project called demo is created

django-admin startproject demo

5. Create gunicorn_config.py file as a configuration file of gunicorn server :

- A config file gunicorn_config.py is created with the following properties:

```
command = './venv/bin/gunicorn'
pythonPath = './'
bind = '192.168.1.66:8089'
workers = '3'
```

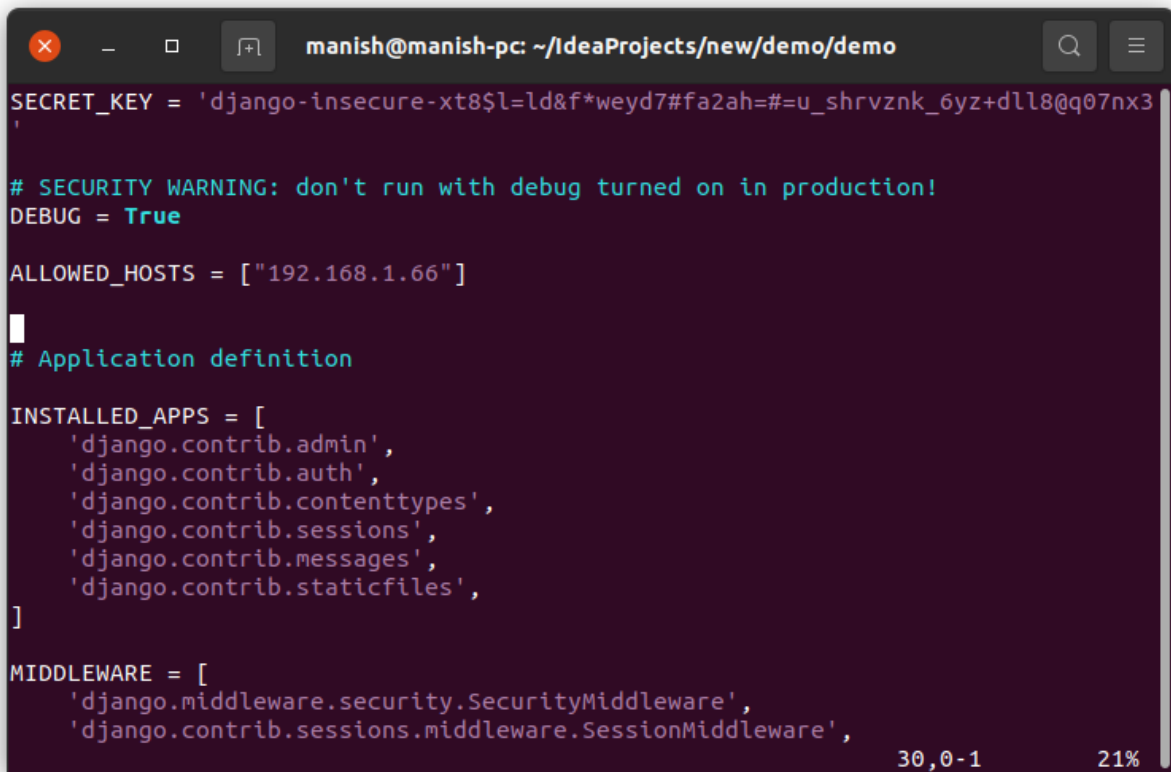



The image shows a screenshot of an IDE window with a dark theme. The title bar at the top reads "manish@manish-pc: ~/IdeaProjects...". The main editor area has a dark purple background and contains the following text:

```
command='./venv/bin/gunicorn'  
pythonPath='./'  
bind='192.168.1.66:8089'  
workers=3
```

Below this text, there are several lines of tilde (~) characters, indicating a list of files or a directory structure. At the bottom right of the editor area, the text "6,0-1" and "All" are visible, likely representing a range of lines or a filter.

6. Edited the settings.py file and add the add host's IP address(**192.168.1.66:8089**) in the hosts array



The image shows a code editor window with a dark theme. The title bar at the top reads "manish@manish-pc: ~/IdeaProjects/new/demo/demo". The code is in Python and represents Django settings. It includes a SECRET_KEY, a security warning, DEBUG set to True, ALLOWED_HOSTS, an application definition section, INSTALLED_APPS, and MIDDLEWARE. The code is as follows:

```
SECRET_KEY = 'django-insecure-xt8$1=ld&f*weyd7#fa2ah=#=u_shrvzmk_6yz+d1l8@q07nx3'

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

ALLOWED_HOSTS = ["192.168.1.66"]

# Application definition

INSTALLED_APPS = [
    'django.contrib.admin',
    'django.contrib.auth',
    'django.contrib.contenttypes',
    'django.contrib.sessions',
    'django.contrib.messages',
    'django.contrib.staticfiles',
]

MIDDLEWARE = [
    'django.middleware.security.SecurityMiddleware',
    'django.contrib.sessions.middleware.SessionMiddleware',
```

At the bottom right of the editor, there is a status bar showing "30,0-1" and "21%".

7. Run gunicorn command to deploy the app

```
# gunicorn -c gunicorn_config.py demo.wsgi
```

```
manish@manish-pc: ~/IdeaProjects/new
(venv) manish@manish-pc:~/IdeaProjects/new$ gunicorn -c gunicorn_config.py demo.wsgi
[2021-11-13 21:50:45 +0545] [32816] [INFO] Starting gunicorn 20.1.0
[2021-11-13 21:50:45 +0545] [32816] [INFO] Listening at: http://192.168.1.66:8089 (32816)
[2021-11-13 21:50:45 +0545] [32816] [INFO] Using worker: sync
[2021-11-13 21:50:45 +0545] [32820] [INFO] Booting worker with pid: 32820
[2021-11-13 21:50:45 +0545] [32821] [INFO] Booting worker with pid: 32821
[2021-11-13 21:50:45 +0545] [32822] [INFO] Booting worker with pid: 32822
[2021-11-13 21:50:48 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:48 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:48 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:48 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
[2021-11-13 21:50:49 +0545] [32816] [INFO] Handling signal: winch
Not Found: /static/admin/css/fonts.css
```

8. Testing the app in the browser

