

# **Week 5- Group A (Task)**

## **Two Tier Infrastructure Setup with Packer and Terraform**

### **Task**

- Fork/Copy:
- application code repo: [https://github.com/techbleat/fruits-veg\\_market](https://github.com/techbleat/fruits-veg_market)
  - Infrastructure code repo: <https://github.com/techbleat/class2025iac>

Redo Week 4 task, this time creating 2 AMIs using Packer; Node 1 [NGINX] and Node 2 [ Java 17 /Python3]. Then, use Terraform to spin up the following infrastructure leveraging the AMIs created.

- Node 1: A frontend/Tier 1 system running NGINX
  - Node 2: A backend/Tier 2 system running Python 3 o should run on port 8080
  - Node 3: A backend/Tier 2 system running Java 17 o should run on port 9090
- After completion:
1. share screenshots of your infrastructure
  2. Share your GitHub repo(s) Remember to exclude .terraform directory and other files not needed when pushing your code to the repo.

### **Implementation Steps**

1. Fork/copy the application code repo and the infrastructure code repo
2. Created AMI images using packer
3. Created a tool server for execution
4. Created terraform to spin up the following infrastructure (nginx, python (8080) and java (9090))
5. Configure the load balancing for frontend/Tier 1 – Nginx, backend/Tier2- Python on port 8080 and backend/Tier 2 java on port 9090.

## Fork/Copy

- application code repo: [https://github.com/techbleat/fruits-veg\\_market](https://github.com/techbleat/fruits-veg_market)

The screenshot shows the GitHub repository page for 'fruits-veg\_market'. The repository is public and was forked from 'techbleat/fruits-veg\_market'. It has 8 commits ahead of the main branch. The commit history includes updates to index.html, Jenkinsfile, README, and .gitignore. The repository has 0 stars, 0 forks, and 0 releases. It also has 0 packages published.

Commit	Message	Author	Date	Commits
odufuwabusola	Update index.html	odufuwabusola	19bf32e - 4 days ago	30 Commits
java	updated		2 months ago	
python	Add Jenkinsfile for deployment pipeline setup		last month	
web	Update index.html		4 days ago	
.gitignore	added veg list and updated fruit list		2 months ago	
2tierDeployment.png	added new files and update		2 months ago	
README.md	Fix formatting of run app command in README		2 months ago	

- Infrastructure code repo: <https://github.com/techbleat/class2025iac>

The screenshot shows the GitHub repository page for 'class2025iac'. The repository is public and was forked from 'techbleat/class2025iac'. It is up to date with the main branch. The commit history includes updates to Java binary install, Terraform code, Jenkinsfile, and Jenkinsfile-Packer. The repository has 0 stars, 0 forks, and 0 releases. It also has 0 packages published.

Commit	Message	Author	Date	Commits
shegoj	code updated	shegoj	092a37b - last month	19 Commits
packer	updated Java binary install		2 months ago	
terraform	code updated		last month	
.gitignore	adding terraform code		2 months ago	
Jenkinsfile	Jenkins file update with init reconfigure		2 months ago	
Jenkinsfile-Packer	new files added		2 months ago	
Jenkinsfile-Terraform	code updated		last month	

## Packer

The screenshot shows the VS Code interface with the 'aws-nginx-git.pkr.hcl' file open in the editor. The terminal below shows the execution of the 'packer build' command, which successfully creates an AMI named 'java-git-ami-build.amazon-ebs.nginx-git'. The terminal output includes logs from the build process, such as systemctl commands and AMI deregistration.

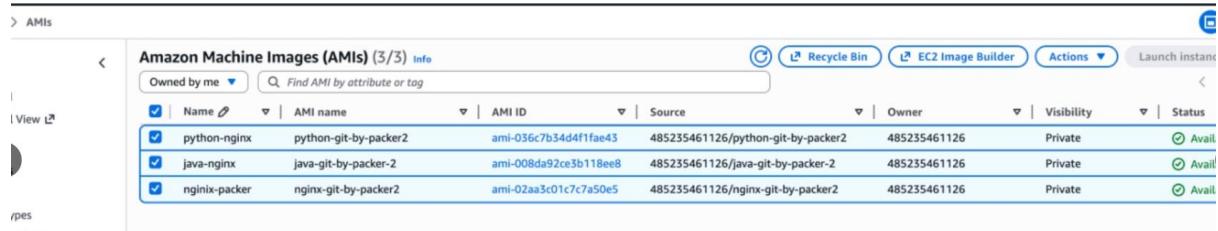
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER
MacBookPro:Two-Tier-Infra-Packer owobusolaodufuwas$ packer build .
==> java-git-ami-build.amazon-ebs.nginx-git: perl-lib-0.65-477.amzn2023.0.7.x86_64
==> java-git-ami-build.amazon-ebs.nginx-git:
==> java-git-ami-build.amazon-ebs.nginx-git: Complete!
==> java-git-ami-build.amazon-ebs.nginx-git: Stopping the source instance...
==> java-git-ami-build.amazon-ebs.nginx-git: Stopping instance
==> java-git-ami-build.amazon-ebs.nginx-git: Waiting for the instance to stop...
==> java-git-ami-build.amazon-ebs.nginx-git: Creating AMI java-git-by-packer-v2 from instance i-0792570
59d1be7486
==> java-git-ami-build.amazon-ebs.nginx-git: Attaching run tags to AMI...
==> java-git-ami-build.amazon-ebs.nginx-git: AMI: ami-07bd727b2d0cee5e
==> java-git-ami-build.amazon-ebs.nginx-git: Waiting for AMI to become ready...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Skipping Enable AMI deprecation...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Skipping Enable AMI deregistration protection...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Terminating the source AWS instance...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Cleaning up any extra volumes...
==> nginx-git-ami-build.amazon-ebs.nginx-git: No volumes to clean up, skipping
==> nginx-git-ami-build.amazon-ebs.nginx-git: Deleting temporary security group...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Deleting temporary keypair...
==> nginx-git-ami-build.amazon-ebs.nginx-git: Running post-processor: (type shell-local)
==> nginx-git-ami-build.amazon-ebs.nginx-git (shell-local): Running local shell script: /var/folders/g/c/5_pfhqv52y9gvp9tjlb5660000gn/T/packer-shell198204011
==> nginx-git-ami-build.amazon-ebs.nginx-git (shell-local): AMI build is finished For Nginx
Build 'nginx-git-ami-build.amazon-ebs.nginx-git' finished after 4 minutes 47 seconds.
==> java-git-ami-build.amazon-ebs.nginx-git: Skipping Enable AMI deprecation...
==> java-git-ami-build.amazon-ebs.nginx-git: Skipping Enable AMI deregistration protection...
==> java-git-ami-build.amazon-ebs.nginx-git: Deregistering the source AMI from AWS...
```

## Packer successfully Installed

The screenshot shows the VS Code interface with the 'aws-nginx-git.pkr.hcl' file open in the editor. The terminal below shows the execution of the 'packer build' command, which creates multiple AMIs. The output indicates that AMIs were created in us-east-1: ami-0399a230a87d5772f, ami-0399a30a87d5772f, ami-07bd727b2d0cee5e, and ami-07bd727b2d0cee5e.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER
MacBookPro:Two-Tier-Infra-Packer owobusolaodufuwas$ packer build .
==> Builds finished. The artifacts of successful builds are:
--> nginx-git-ami-build.amazon-ebs.nginx-git: AMIs were created:
us-east-1: ami-0399a230a87d5772f
--> nginx-git-ami-build.amazon-ebs.nginx-git: AMIs were created:
us-east-1: ami-0399a30a87d5772f
--> java-git-ami-build.amazon-ebs.nginx-git: AMIs were created:
us-east-1: ami-07bd727b2d0cee5e
--> java-git-ami-build.amazon-ebs.nginx-git: AMIs were created:
us-east-1: ami-07bd727b2d0cee5e
```

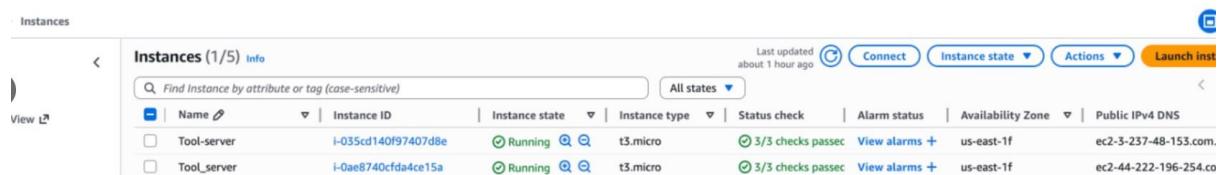
## AMI Images created from Packer



A screenshot of the AWS CloudWatch Metrics console. The left sidebar shows 'Metrics' and 'Logs'. The main area displays a table titled 'Amazon Machine Images (AMIs) (3/3)'. The columns are: Name, AMI name, AMI ID, Source, Owner, Visibility, and Status. The data rows are:

Name	AMI name	AMI ID	Source	Owner	Visibility	Status
python-nginx	python-git-by-packer2	ami-036c7b54d4f1fae43	485235461126/python-git-by-packer2	485235461126	Private	Available
java-nginx	java-git-by-packer-2	ami-008da92ce3b118ee8	485235461126/java-git-by-packer-2	485235461126	Private	Available
nginx-packer	nginx-git-by-packer2	ami-02aa3c01c7c7a50e5	485235461126/nginx-git-by-packer2	485235461126	Private	Available

## Tool Server



A screenshot of the AWS CloudWatch Metrics console. The left sidebar shows 'Metrics' and 'Logs'. The main area displays a table titled 'Instances (1/5)'. The columns are: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 DNS. The data rows are:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Tool-server	i-035cd140f97407d8e	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-3-237-48-153.com
Tool_server	i-0ae8740cfda4ce15a	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-222-196-254.co

## Terraform initiated (vscode)

```
● MacBookPro:terraform owobusolaodufuwa$ terraform init
  Initializing the backend...
  Initializing provider plugins...
    - Finding hashicorp/aws versions matching "~> 5.0"...
    - Installing hashicorp/aws v5.100.0...
    - Installed hashicorp/aws v5.100.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
```

## Terrafoam initiated (aws- ec2)

```
[ec2-user@ip-172-31-75-37 Two-Tier-Infra-Packer]$ cd terraform/
[bash: cd: terraform/: No such file or directory
[ec2-user@ip-172-31-75-37 Two-Tier-Infra-Packer]$ cd terrafoam
[ec2-user@ip-172-31-75-37 terrafoam]$ ls
main.tf
[ec2-user@ip-172-31-75-37 terrafoam]$ terraform init
  Initializing the backend...
  Initializing provider plugins...

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
[ec2-user@ip-172-31-75-37 terrafoam]$
```

```

Plan: 6 to add, 0 to change, 3 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_security_group.java_web: Destroying... [id=sg-031e80f167d090ae5]
aws_security_group.nginx_web: Destroying... [id=sg-09edebb86d4ed436b]
aws_security_group.python_web: Destroying... [id=sg-0e2f3130fe454e390]
aws_security_group.nginx_web: Destruction complete after 1s
aws_security_group.nginx_web: Creating...
aws_security_group.python_web: Destruction complete after 1s
aws_security_group.python_web: Creating...
aws_security_group.java_web: Destruction complete after 1s
aws_security_group.java_web: Creating...
aws_security_group.python_web: Creation complete after 2s [id=sg-01c8815caa4d4e7e7]
aws_security_group.nginx_web: Creation complete after 2s [id=sg-0ddc644d1099ac846]
aws_security_group.java_web: Creation complete after 2s [id=sg-0e3bca4d7e7c40e8d]
aws_instance.python-node: Creating...
aws_instance.nginx-node: Creating...
aws_instance.java-node: Creating...
aws_instance.python-node: Still creating... [00m10s elapsed]
aws_instance.nginx-node: Still creating... [00m10s elapsed]
aws_instance.java-node: Still creating... [00m10s elapsed]
aws_instance.nginx-node: Creation complete after 13s [id=i-05fb3eef145ea4cc5]
aws_instance.java-node: Creation complete after 13s [id=i-0d049d82ca20b54f1]
aws_instance.python-node: Creation complete after 13s [id=i-04af527facaa8e0794]

Apply complete! Resources: 6 added, 0 changed, 3 destroyed.
[ec2-user@ip-172-31-75-37 terraform]$ 

```

## The three nodes were created using terraform

Instances	Name	Instance ID	State	Type	Status Check	Alarm Status	Availability Zone	Public IPv4 DNS	Public IP
	terraform-python-node	i-04af527facaa8e0794	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-222-117-8.com...	44.222
	terraform-java-node	i-0d049d82ca20b54f1	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-192-247-43.co...	44.192
	terraform-nginx-node	i-05fb3eef145ea4cc5	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-3-237-18-165.com...	3.237

## Nginx from Terraform

EC2 > Instances

Instances (1/5) Info									
Last updated less than a minute ago									
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP	
Tool-server	i-035cd140f97407dbe	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-3-237-48-153.com...	3.237	
Tool_server	i-0a68740cfda4cc15a	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-222-196-254.co...	44.222	
terraform-python-node	i-04af527facaa8e0794	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-222-117-8.com...	44.222	
terraform-java-node	i-0d049d82ca20b54f1	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1f	ec2-44-192-247-43.co...	44.192	
<b>terraform-nginx-node</b>	<b>i-05fb3eef145ea4cc5</b>	<b>Running</b>	<b>t3.micro</b>	<b>3/3 checks passed</b>	<b>View alarms +</b>	<b>us-east-1f</b>	<b>ec2-3-237-18-165.com...</b>	<b>3.237</b>	

**i-05fb3eef145ea4cc5 (terraform-nginx-node)**

**Security groups**

sg-0ddc644d1099ac846 (terraform-20260121180159588100000001)

**Inbound rules**

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sgr-01e72f1073a0bd588	22	TCP	0.0.0.0/0	terraform-20260121180159588100...	SSH
-	sgr-0e3cee924005b6381	80	TCP	0.0.0.0/0	terraform-20260121180159588100...	HTTP

# Java from Terraform running on port 9090

EC2 > Instances

**EC2**

Instances (1/5) **Info**

Last updated 1 minute ago **Connect** Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public
Tool-server	i-035cd140f97407d8e	Running	t3.micro	5/5 checks passed	View alarms +	us-east-1f	ec2-5-237-48-153.com...	3.237
Tool_server	i-0ae8740cfd4a1e15a	Running	t3.micro	5/5 checks passed	View alarms +	us-east-1f	ec2-44-222-196-254.co...	44.222
terraform-python-node	i-04af527facab0e0794	Running	t3.micro	5/5 checks passed	View alarms +	us-east-1f	ec2-44-222-117-8.com...	44.222
<b>terraform-java-node</b>	<b>i-0d049d82ca20b54f1</b>	<b>Running</b>	<b>t3.micro</b>	<b>5/5 checks passed</b>	<b>View alarms +</b>	<b>us-east-1f</b>	<b>ec2-44-192-247-43.co...</b>	<b>44.192</b>
terraform-nginx-node	i-05fb3eeff145ea4cc5	Running	t3.micro	5/5 checks passed	View alarms +	us-east-1f	ec2-5-237-18-165.com...	3.237

**i-0d049d82ca20b54f1 (terraform-java-node)**

IAM Role: - Owner ID: 485235461126 Launch time: Wed Jan 21 2026 18:02:03 GMT+0000 (Greenwich Mean Time)

Security groups: sg-03ebe4d7e7c40ed8 (terraform-20260121180159633500000003)

Inbound rules:

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sgr-0e837840c2fd9d60	9090	TCP	0.0.0.0/0	terraform-20260121180159633500...	HTTP
-	sgr-0bed2ed8a5019e6274	22	TCP	0.0.0.0/0	terraform-20260121180159633500...	SSH

Python from Terraform running on port 8080

The screenshot shows the AWS EC2 Instances page. At the top, there's a search bar for finding instances by attribute or tag, and a dropdown menu for selecting instance states. The main table lists seven instances:

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Last updated
<input type="checkbox"/>	Tool-server	i-035cd1409f7407d8e	<span>Running</span>	t3.micro	<span>3/3 checks passed</span>	<span>View alarms</span>	us-east-1f	ec2-3-237-48-153.com...	1 minute ago
<input type="checkbox"/>	Tool_server	i-0ae8740cf0fa4ce15a	<span>Running</span>	t3.micro	<span>3/3 checks passed</span>	<span>View alarms</span>	us-east-1f	ec2-44-222-196-254.com...	<span>44.222</span>
<input checked="" type="checkbox"/>	terraform-python-node	i-04af527facab8e0794	<span>Running</span>	t3.micro	<span>3/3 checks passed</span>	<span>View alarms</span>	us-east-1f	ec2-44-222-117-8.com...	<span>44.222</span>
<input type="checkbox"/>	terraform-java-node	i-0ed049db2ca20b54f1	<span>Running</span>	t3.micro	<span>3/3 checks passed</span>	<span>View alarms</span>	us-east-1f	ec2-44-192-247-43.co...	<span>44.192</span>
<input type="checkbox"/>	terraform-nginx-node	i-05fb5eeff145ea4cc5	<span>Running</span>	t3.micro	<span>3/3 checks passed</span>	<span>View alarms</span>	us-east-1f	ec2-3-237-18-165.com...	<span>3.237</span>

Below the table, a specific instance is selected: **i-04af527facab8e0794 (terraform-python-node)**. Its security group is listed as sg-01cb815caa4d4e7e. The Inbound rules section shows two entries:

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sgr-0a2cb5c4263ea67f	22	TCP	0.0.0.0/0	terraform-2026012118015960840000002	SSH
-	sgr-04587c516d55eacad	8080	TCP	0.0.0.0/0	terraform-2026012118015960840000002	HTTP

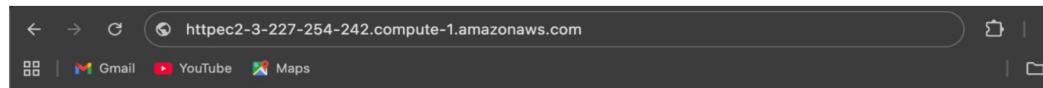
# Nginx

```
Verifying : nginx-core-1.18.0-0.1.amzn2023.0.2.x86_64
Verifying : nginx-fsleyes-1:1.28.0-1.amzn2023.0.2.noarch
Verifying : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch

Installed:
generic-logos-httpsd-18.0.0-12.amzn2023.0.3.noarch gperftools-liba-2.9.1-1.amzn2023.0.3.x86_64 libunwind-1.4.0-5.amzn2023.0.3.x86_64 nginx-1:1.28.0-1.amzn2023.0.2.x86_64
nginx-core-1:1.28.0-1.amzn2023.0.2.x86_64 nginx-fsleyes-1:1.28.0-1.amzn2023.0.2.noarch nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch

Complete!
[root@ip-172-31-70-26 ~]# ls
[root@ip-172-31-70-26 ~]# pwd
/root
[root@ip-172-31-70-26 ~]# cd ..
[root@ip-172-31-70-26 /]# pwd
/
[root@ip-172-31-70-26 /]# cd -
[root@ip-172-31-70-26 ~]# mkdir week-5
[root@ip-172-31-70-26 ~]# cd week-5
[root@ip-172-31-70-26 week-5]# ls
[root@ip-172-31-70-26 week-5]# git clone https://github.com/odufuwabusola/fruits-veg_market.git
Cloning into 'fruits-veg_market'...
remote: Enumerating objects: 128, done.
remote: Counting objects: 100% (72/72), done.
remote: Compressing objects: 100% (47/47), done.
remote: Total 128 (delta 47), reused 27 (delta 25), pack-reused 56 (from 1)
Receiving objects: 100% (128/128), 1.69 MiB / 43.26 MiB/s, done.
Resolving deltas: 100% (54/54), done.
[root@ip-172-31-70-26 week-5]# ls
fruits-veg_market
[root@ip-172-31-70-26 week-5]# cd fruits-veg_market/
[root@ip-172-31-70-26 fruits-veg_market]# ls
2tierDeployment.png README.md java python web
[root@ip-172-31-70-26 fruits-veg_market]# cd web
[root@ip-172-31-70-26 web]# ls
Jenkinsfile index.html
[root@ip-172-31-70-26 web]# cd index.html
[root@ip-172-31-70-26 index.html]# Not a directory
[root@ip-172-31-70-26 web]# sudo cp index.html /usr/share/nginx/html/
[root@ip-172-31-70-26 web]# ls
Jenkinsfile index.html
[root@ip-172-31-70-26 web]# sudo systemctl start nginx
```

## Frontend Load Balancer



### Produce List

[Load Fruits](#) [Load Vegetables](#)

#### Fruits (FastAPI)

Fruit	Price (\$)
Apple	1.20
Banana	0.80
Pineapple	2.20
Cherry	3.50
Orange	1.80
Blueberry	2.50
Lime	5.50
Mango	2.40
Kiwi	6.50
Organinc Cucumber	2.00
Lemon	2.00
Grapes	2.20

#### Vegetables (Java)

Vegetable	Price (\$)
Cucumber	1.00

## Python Load balancer

### Produce List

[Load Fruits](#) [Load Vegetables](#)

Loaded ✓

#### Fruits (FastAPI)

Fruit	Price (\$)
Apple	1.20
Banana	0.80
Pineapple	2.20
Cherry	3.50
Orange	1.80
Blueberry	2.50
Lime	5.50
Mango	2.40
Kiwi	6.50
Organinc Cucumber	2.00
Lemon	2.00
Grapes	2.20

#### Vegetables (Java)

Vegetable	Price (\$)
Cucumber	1.00

## Python running on port 8080

```
using cached typing_inspection-0.4.2-py3-none-any.whl (14 kB)
Collecting aiohttp<5,>=3.6.2
  Using cached aiohttp-4.12.1-py3-none-any.whl (113 kB)
Collecting idna>=2.8
  Downloading idna-3.11-py3-none-any.whl (71 kB)
    |████████| 71 kB 16.0 MB/s
Collecting exceptiongroup>=1.0.2
  Using cached exceptiongroup-1.3.1-py3-none-any.whl (16 kB)
Installing collected packages: typing-extensions, idna, exceptiongroup, typing-inspection, pydantic-core, h11, click, aiohttp, annotated-types, websockets, watchfiles, uvloop, uvicorn, starlette, pyyaml, python-dotenv, pydantic, httptools, annotated-doc, fastapi
Successfully installed annotated-doc-0.0.4 annotated-types-0.7.0 aiohttp-4.12.1 click-8.1.8 exceptiongroup-1.3.1 fastapi-0.128.0 h11-0.16.0 httptools-0.7.1 idna-3.11 pydantic-2.12.5 pydantic-core-2.41.5 python-dotenv-1.2.1 pyyaml-6.0.3 starlette-0.49.3 typing-extensions-4.15.0 typing-inspection-0.4.2 uvicorn-0.39.0 uvloop-0.22.1 watchfiles-1.1.1 websockets-15.0.1
WARNING: You are using pip version 21.3.1; however, version 25.3 is available.
You should consider upgrading via the 'root@ip-172-31-72-127 python]# uvicorn main:app --host 0.0.0.0 --port 8080 --reload
INFO:     Will watch for changes in these directories: ['/root/week-5/fruits-veg_market/python/.venv/bin/python']
INFO:     Uvicorn running on http://0.0.0.0:8080 (Press CTRL+C to quit)
INFO:     Started reloader process [2846] using WatchFiles
INFO:     Started server process [2848]
INFO:     Waiting for application startup.
INFO:     Application startup complete.
```

## Java Load Balancer

### Produce List

[Load Fruits](#) [Load Vegetables](#)

Loaded ✓

#### Fruits (FastAPI)

Fruit	Price (\$)
Apple	1.20
Banana	0.80
Pineapple	2.20
Cherry	3.50
Orange	1.80
Blueberry	2.50
Lime	5.50
Mango	2.40
Kiwi	6.50
Organinc Cucumber	2.00
Lemon	2.00
Grapes	2.20

#### Vegetables (Java)

Vegetable	Price (\$)
Carrot	0.60
Broccoli	1.40
Tomato	0.90
Spinach	1.10
Potato	0.50

## Java running on port 9090

```
Downloaded from central: https://repo.maven.apache.org/maven2/io/micrometer/micrometer-observation/1.12.10/micrometer-observation-1.12.10.jar (72 kB at 238 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/cw2/am/am-tree/9.5/am-tree-9.5.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/springframework/boot/spring-boot-loader-tools/3.3.4/spring-boot-loader-tools-3.3.4.jar (464 kB at 1.5 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/jdom/jdom2/2.0.6.1/jdom2-2.0.6.1.jar
Downloaded from central: https://repo.maven.apache.org/maven/plugins/maven-shade-plugin/3.5.0/maven-shade-plugin-3.5.0.jar (147 kB at 468 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.2.1/maven-dependency-tree-3.2.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-dependency-tree/3.2.1/maven-dependency-tree-3.2.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/eclipse/aether/aether-util/1.0.0.v20140518/aether-util-1.0.0.v20140518.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/cw2/am/am-commons/9.5/am-commons-9.5.jar (72 kB at 216 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/eclipse/aether/aether-api/1.0.0.v20140518/aether-api-1.0.0.v20140518.jar
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-2.13.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/eclipse/aether/aether-util/1.0.0.v20140518/aether-util-1.0.0.v20140518.jar (146 kB at 406 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-2.13.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/eclipse/aether/aether-api/1.0.0.v20140518/aether-api-1.0.0.v20140518.jar (136 kB at 362 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-2.13.0.jar (233 kB at 561 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-2.13.0.jar (484 kB at 1.1 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-collections4/4.4/commons-collections4-4.4.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/vafer/jdependency/2.8.0/jdependency-2.8.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/jdom/jdom2/2.0.6.1/jdom2-2.0.6.1.jar (328 kB at 901 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/vafer/jdependency/2.8.0/jdependency-2.8.0.jar (233 kB at 561 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-io/2.13.0/commons-io-2.13.0.jar (484 kB at 1.1 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/commons-io/commons-collections4/4.4/commons-collections4-4.4.jar (752 kB at 1.7 MB/s)
[INFO] Attaching agents: []



:: Spring Boot ::          (v3.3.4)

2026-01-21T21:36:58.121Z  INFO 3934 --- [           main] com.produce.vegetables.ProduceApp      : Starting ProduceApp using Java 17.0.17 with PID 3934 (/root/week-5/fruits-veg_market/java/target/classes started by root in /root/week-5/fruits-veg_market/java)
2026-01-21T21:36:58.128Z  INFO 3934 --- [           main] com.produce.vegetables.ProduceApp      : No active profile set, falling back to 1 default profile: "default"
2026-01-21T21:36:59.131Z  INFO 3934 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat initialized with port 9090 (http)
2026-01-21T21:36:59.174Z  INFO 3934 --- [           main] o.apache.catalina.core.StandardService : Starting service [Tomcat]
2026-01-21T21:36:59.174Z  INFO 3934 --- [           main] o.apache.catalina.core.StandardEngine : Starting Servlet engine: [Apache Tomcat/10.1.30]
2026-01-21T21:36:59.224Z  INFO 3934 --- [           main] o.a.c.c.C.[Tomcat@localhost/]         : Initializing Spring embedded WebApplicationContext
2026-01-21T21:36:59.224Z  INFO 3934 --- [           main] o.s.web.context.ContextLoader        : Root WebApplicationContext: initialization completed in 975 ms
2026-01-21T21:36:59.544Z  INFO 3934 --- [           main] o.s.b.w.embedded.tomcat.TomcatWebServer : Puma started on port 9090 (http) with context path '/'
2026-01-21T21:36:59.553Z  INFO 3934 --- [           main] com.produce.vegetables.ProduceApp      : Started ProduceApp in 1.865 seconds (process running for 2.218)
```

## GitHub

<https://github.com/odufuwabusola/Two-Tier-Infra-Packer>

The screenshot shows the GitHub repository page for 'Two-Tier-Infra-Packer'. The repository has 1 branch and 0 tags. Recent commits include a terraform code update from BUSOLA-O (24 minutes ago) and file updates for packer and terraform (1 hour ago and 24 minutes ago respectively). The repository has 0 stars, 0 forks, and 0 watching. It also has 0 releases published.