

Lab 10 Notebook

10.1g

4. Take a screenshot that includes your OdinID showing the page number and the description of the class for your lab notebook.

766| PORTLAND STATE UNIVERSITY 2023-2024 BULLETIN

KHOD2

CS 421P - Programming Language Implementation: Syntax and Static Semantics (4)

Techniques and tools for construction of compiler and interpreter front-ends, including: representation of programs using abstract syntax trees; lexical analysis, and lexer generators; parsing (recursive descent, top-down, and bottom-up), and parser generators; type checking and static analysis. Design and implementation of a front-end for a small programming language.

Prerequisite: CS 205, CS 302, CS 311, CS 314, and CS 358.

CS 422 - Programming Language Implementation: Code Generation and Dynamic Semantics (4)

Techniques and tools for construction of compiler and interpreter back-ends, including: interpreter design; code generation strategies for standard programming constructs; intermediate representations; optimization techniques; run-time organization, including functions, objects, and closures; run-time systems. Design and implementation of an interpreter and a compiler back-end for a small programming language.

Prerequisite: CS 205, CS 302, CS 311, CS 314, and CS 358.

CS 422L - Lab for CS 422 (0)

Lab for CS 422.

CS 422P - Programming Language Implementation: Code Generation and Dynamic Semantics (4)

Techniques and tools for construction of compiler and interpreter back-ends, including: interpreter design; code generation strategies for standard programming constructs; intermediate representations; optimization techniques; run-time organization, including functions, objects, and closures; run-time systems. Design and implementation of an interpreter and a compiler back-end for a small programming language.

Prerequisite: CS 205, CS 302, CS 314, and CS 358.

CS 430P - Internet, Web, & Cloud Systems (4)

Covers modern networked computing systems and the abstractions they provide. Specifically, students will learn about and apply their knowledge of topics such as Internet protocols, virtual machines and containers, web servers and frameworks, and databases as well as their deployment in modern cloud environments.

Also offered for graduate-level credit as CS 530 and may be taken only once for credit. Prerequisite: Upper-division standing and admission into the CS program.

Take a screenshot that includes your OdinID showing the error that is returned for your lab notebook.

```
␣,  
) khod2
```

The code failed since it won't be able to run inference on such a huge context and throws this exception: 400 The request cannot be processed. The most likely reason is that the provided input exceeded the model's input token limit.

Provide an explanation as to why the description is not returned for your lab notebook.

We set the prompt up so that the API model would only use the first 5000 words, and return an answer only if the answer was found in that limit. The model determined it wasn't, so it didn't return the description of 430P.

Take a screenshot including your OdinID that shows how long it took to perform the prediction across every chunk

```
khod2
```

```
Time elapsed 18.36002254486084
```

How many chunks returned predictions?

5.

Take a screenshot that includes your OdinID showing the result that is returned for your lab notebook.

khod2

the prompt: Answer the question as precise as possible using the provided context. If the answer is not contained in the context, say "answer not available in context"

Context:

['Internet, Web, Cloud Systems', 'Internet, Web, Cloud Systems', 'Covers modern networked computing systems and the abstractions they provide Specifically, students will learn about and apply their knowledge of topics such as Internet protocols, virtual machines and containers, web servers and frameworks, and databases as well as their deployment in modern cloud environments', 'Covers modern networked computing systems and the abstractions they provide Specifically, students will learn about and apply their knowledge of topics such as Internet protocols, virtual machines and containers, web servers and frameworks, and databases as well as their deployment in modern cloud environments Also offered for graduate -level credit as CS 430P and may be taken only once for credit Prerequisite: Graduate - standing and admission into CS program', 'Advanced software design patterns using Java as the presentation language Course is suitable to software architects and developers who are already well-versed in this language In addition, it offers continuous opportunities for learning the most advanced features of the Java language and understanding some principles behind the design of its fundamental libraries Also offered as CS 653 and may be taken only once for credit Prerequisite: programming in Java and CS 520']?

Question:

What is the course description for CS 530?

Answer:

the number of words in the prompt: 1623

PaLM Predicted: Covers modern networked computing systems and the abstractions they provide Specifically, students will learn about and apply their knowledge of topics such as Internet protocols, virtual machines and containers, web servers and frameworks, and databases as well as their deployment in modern cloud environments Also offered for graduate -level credit as CS 430P and may be taken only once for credit Prerequisite: Graduate - standing and admission into CS program

Take a screenshot including your OdinID that shows the results of the queries.

```
: khod2

print(answer_my_question("Are international students eligible for grad prep?"))
```

Yes, international students are eligible for the postbaccalaureate Grad Prep program and can receive an I-20 for the program.

```
: print(answer_my_question("If my undergraduate GPA is below 3.0, will it be possible to be admitted to the MS program?"))
```

It is possible for an applicant to be recommended for admission whose undergraduate GPA is slightly below 3.0 if their overall application is very strong and the admissions committee determines that the applicant is a good fit for the program. It is recommended that an applicant's low GPA be addressed in their Statement of Purpose within their application.

```
: print(answer_my_question("What are the requirements for the masters cybersecurity certificate?"))
```

The cybersecurity certificate program requires admission as a graduate student, similar to admission to the Master's program, in the Computer Science department. The program requires 21 total credits of graduate classes. There are two core classes for a total of 6 credits. In addition, five elective classes must be taken for the needed additional 15 credits. In summary, seven total graduate classes must be taken two are core and five are electives.

```
: print(answer_my_question("What are the requirements for admission to the Computer Science major?"))
```

1. Completion of each of the following core CS courses with a C or better: CS 161 Introduction to Programming and Problem Solving 4
2. Completion of each of the following non-CS courses with a grade of C- or better: MTH 251 Calculus I MTH 252 Calculus II or MTH 261 Linear Algebra Three Approved Laboratory Science courses
3. Prior to admission, PSU students are expected to complete the Freshman and Sophomore Inquiry series. Similarly, transfer students are expected to complete the Maseeh College lower division general education requirements. Completing the general

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5. Which of the approaches described would have issues with token limits on LLMs?

The first approach would, stuffing the model with all documents.

Which of the approaches would result in the most queries for the LLM to handle? How many LLM requests are performed from a single user query in this approach?

The second method, map-reducing with chunks. There are as many LLM requests performed as there are designated chunks from the full context.

Which of the approaches requires one to search a vector database for an appropriate context that is then sent to the LLM?

The third method, map-reduce with embeddings.

10.2g

6. Take a screenshot of the output to include in your lab notebook. How many networks, subnetworks, and VM instances have been created?

```
khod2@cloudshell:~/networking101 (cloud-khodakovskiy-khod2)$ gcloud deployment-manager deployments create networking101-g-lab.yaml
The fingerprint of the deployment is b'fL9ljBJ_1fnA7Nm-pIdDag=='
Waiting for create [operation-1701326927240-60b590b251bf8-d0791e0d-8d8f30f4]...done.
Create operation operation-1701326927240-60b590b251bf8-d0791e0d-8d8f30f4 completed successfully.
NAME: asia-east1
TYPE: compute.v1.subnetwork
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: asia1-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: e1-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:

NAME: eul-vm
TYPE: compute.v1.instance
STATE: COMPLETED
ERRORS: []
INTENT:
```

One network, 5 subnetworks, and 5 instances were created.

Visit the web console for VPC network and show the network and the subnetworks that have been created. Validate that it has created the infrastructure in the initial figure. Note the lack of firewall rules that have been created.

cloud-Khodakovskiy-khod2
vpc

VPC network details
EDIT
DELETE VPC NETWORK

DNS server policy
None

< SUBNETS STATIC INTERNAL IP ADDRESSES FIREWALLS FIREWALL >

Subnets + ADD SUBNET FLOW LOGS

Filter Enter property name or value ? III

<input type="checkbox"/>	Name ↑	Region	Stack Type	Internal IP ranges	External IP ranges
<input type="checkbox"/>	asia-east1	asia-east1	IPv4	10.40.0.0/16	None
<input type="checkbox"/>	europe-west1	europe-west1	IPv4	10.30.0.0/16	None
<input type="checkbox"/>	us-east5	us-east5	IPv4	10.20.0.0/16	None
<input type="checkbox"/>	us-west-s1	us-west1	IPv4	10.10.0.0/16	None
<input type="checkbox"/>	us-west-s2	us-west1	IPv4	10.11.0.0/16	None

Visit the web console for Compute Engine and show all VMs that have been created, their internal IP addresses and the subnetworks they have been instantiated on. Validate that it has created the infrastructure shown in the initial figure.

cloud-Khodakovskiy-khod2

compu

Search

VM instances

CREATE INSTANCE

IMPORT VM

REFRESH

INSTANCES

OBSERVABILITY

INSTANCE SCHEDULES

VM instances

Filter Enter property name or value

<input type="checkbox"/>	Status ↑	Name	Zone	Recommendations	In use by	Internal IP	External IP	Network
<input type="checkbox"/>	✓	w2-vm	us-west1-b			10.11.0.100 (nic0)	34.145.37.5 (nic0)	networking101
<input type="checkbox"/>	✓	w1-vm	us-west1-b			10.10.0.2 (nic0)	35.203.141.156 (nic0)	networking101
<input type="checkbox"/>	✓	eu1-vm	eu-west1-d			10.30.0.2 (nic0)	35.205.35.197 (nic0)	networking101
<input type="checkbox"/>	✓	e1-vm	us-east5-a			10.20.0.2 (nic0)	34.162.189.15 (nic0)	networking101
<input type="checkbox"/>	✓	asia1-vm	asia-east1-b			10.40.0.2 (nic0)	35.221.184.198 (nic0)	networking101

Click on the **ssh** button for one of the VMs and attempt to connect. Did it succeed?

This infinite load is all I could get from it.

Establishing connection to SSH server...

8. Take a screenshot that indicates the new rules have been deployed.

The screenshot shows the AWS VPC network details page for a VPC named 'vpc'. The page has a header with the account name 'cloud-Khodakovskiy-khod2' and a search bar. Below the header, there are tabs for 'VPC network details', 'EDIT', and 'DELETE VPC NETWORK'. The 'VPC network details' tab is active. Below the tabs, there are buttons for 'ADD FIREWALL RULE' and 'DELETE'. A filter bar is present with the text 'Filter Enter property name or value'. Below the filter bar, there is a table with the following columns: 'Name', 'Enforcement order', 'Type', and 'Deployment scope'. The table contains four rows of firewall rules:

Name	Enforcement order	Type	Deployment scope
vpc-firewall-rules	1	VPC firewall rules	Global
networking-firewall-allow-internal		Ingress firewall rule	Global
networking-firewall-allow-ssh		Ingress firewall rule	Global
networking-firewall-allow-icmp		Ingress firewall rule	Global

9.

Location Pair	Ideal Latency	Measured Latency
us-west1 us-east5	~45 ms	~49 ms
us-west1 europe-west1	~93 ms	~135 ms
us-west1 asia-east1	~114 ms	~119 ms
us-east5 europe-west1	~76 ms	~94 ms
us-east5 asia-east1	~141 ms	~180 ms
europe-west1 asia-east1	~110 ms	~256 ms

16. Are the instances in the same availability zone or in different ones?

They appear to be in different availability zones, a and c.

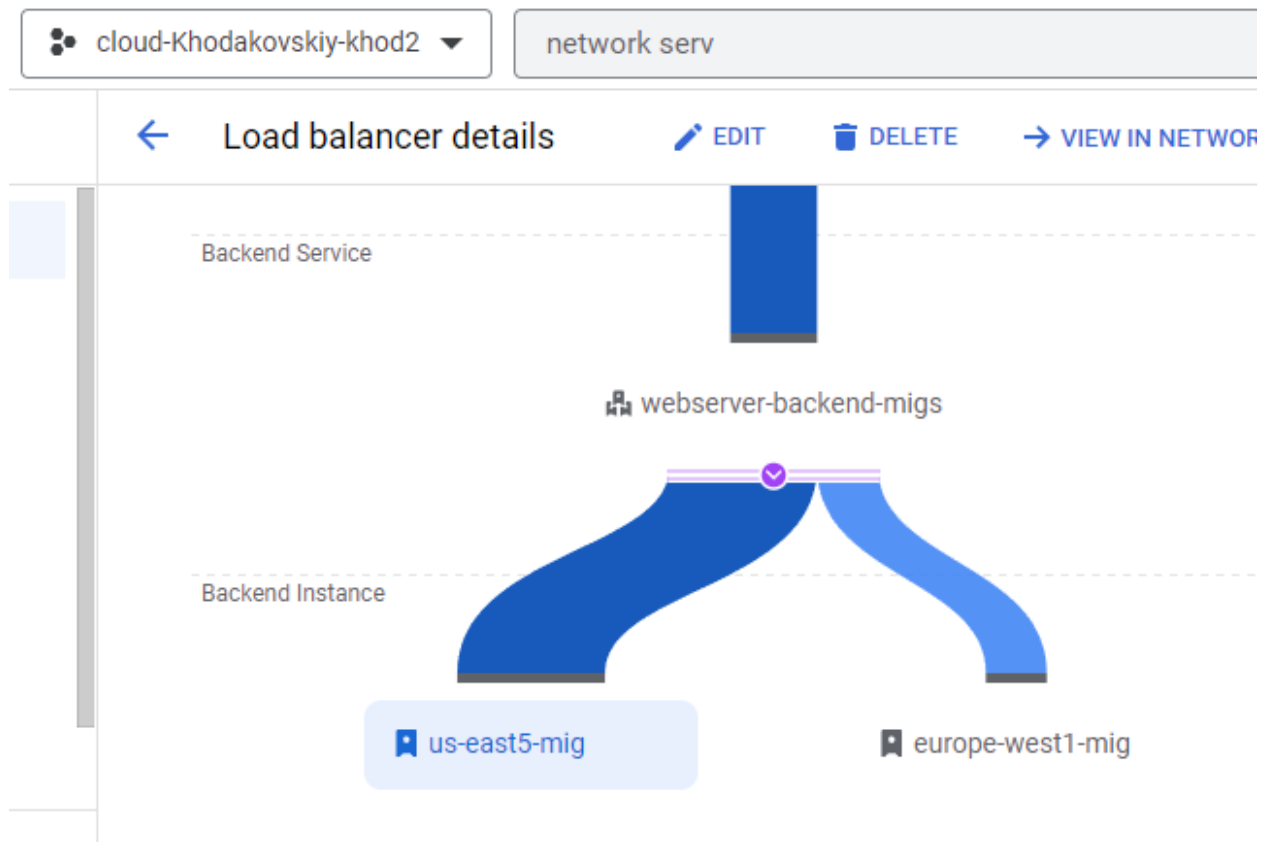
List all availability zones that your servers show up in for your lab notebook.

us-east5-a, europe-west1-b, europe-west1-c, europe-west1-d.

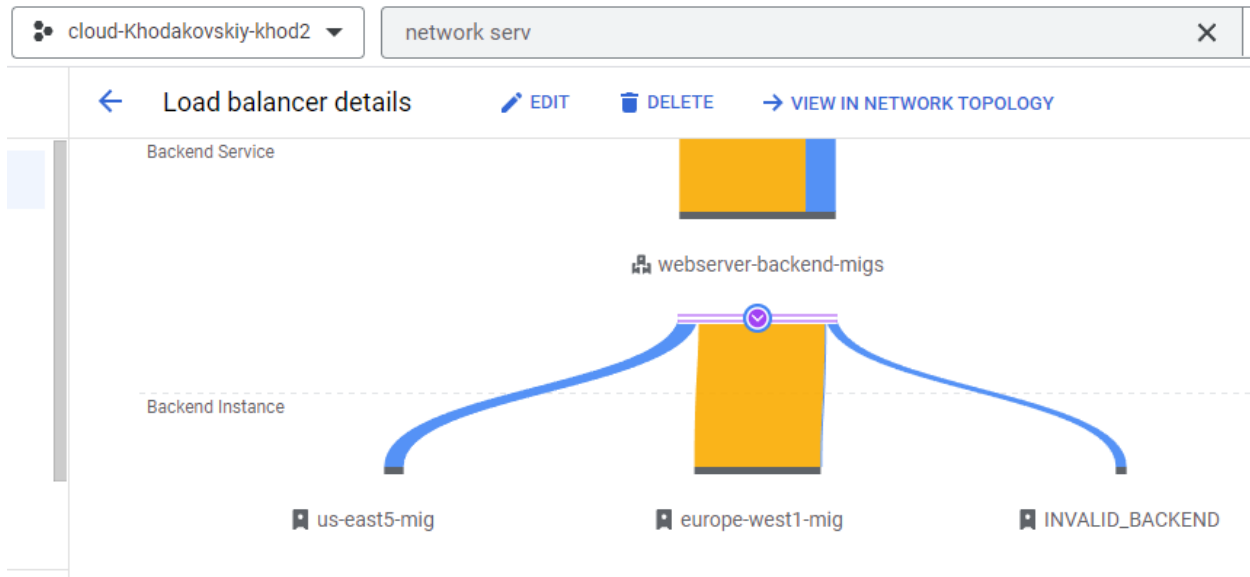
19. Which availability zone does the server handling your request reside in?

us-east5-a.

20. Take a screenshot of the initial traffic distribution.

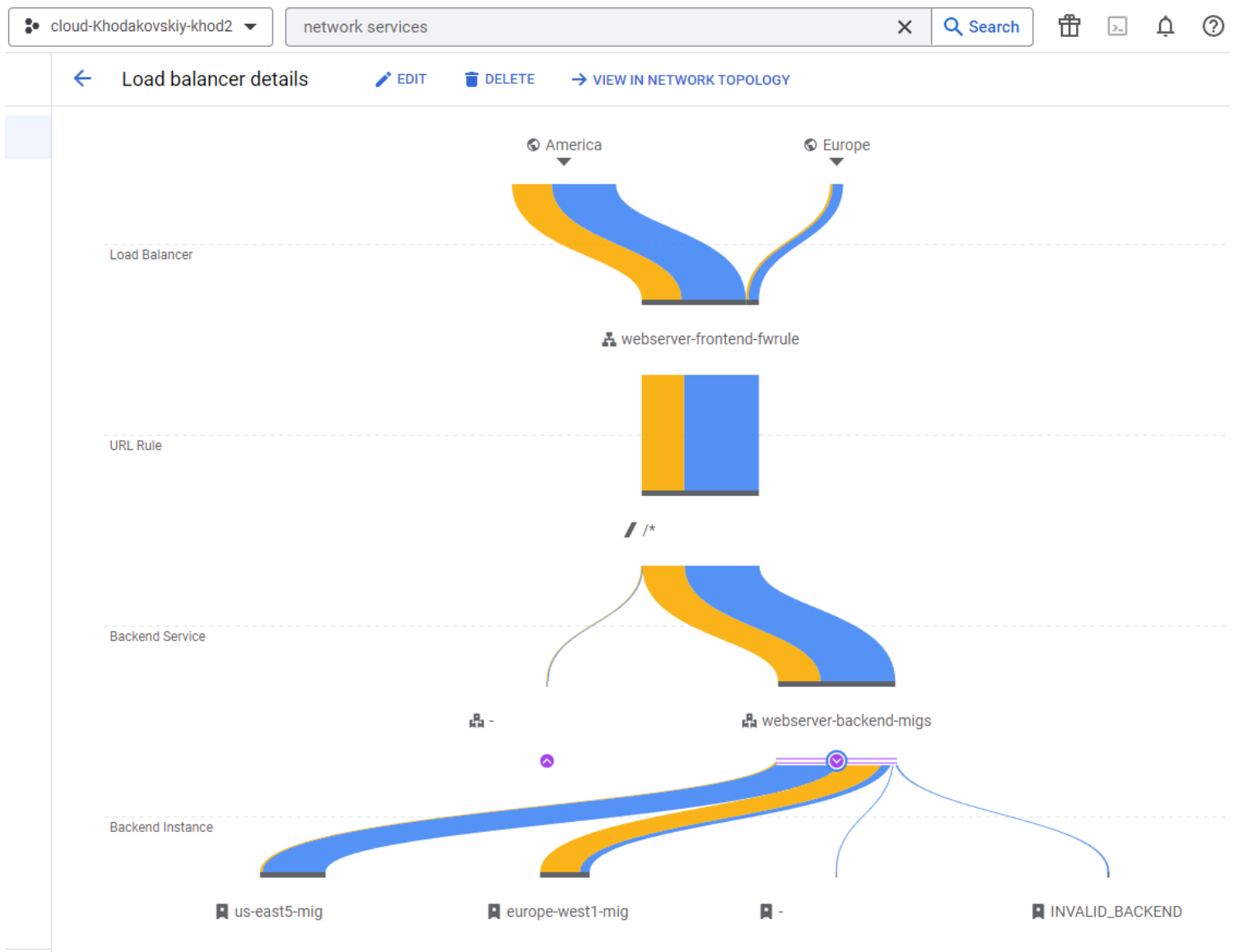


Take a screenshot of the UI as additional instances are brought up and show that the traffic distribution shifts.



This doesn't really make sense to me, but maybe it's because Europe-west still has 3 instances? I might have messed something up.

21. Show a screenshot of the final traffic distribution.



It seems like something came out wrong. I am not sure what. I got this error multiple times:

[siege aborted due to excessive socket failure; you can change the failure threshold in \$HOME/.siegerc]

If you have to mark me down for the different result, that's fine. I didn't want to use more money on this last one, but if you can tell me what went wrong I'd appreciate that.