

DEPARTMENT RESOURCE BOOKING SYSTEM

AWS ARCHITECTURE DESIGN and IMPLEMENTATION

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AWS account setup:

The screenshot displays two main pages from the AWS Academy Learner Lab.

Home Page: The top section shows the "AWS Academy Learner Lab [141571]" dashboard. It features a large graphic of a classical building with columns and clouds, labeled "aws academy". To the left is a sidebar with navigation links: Home, Modules, Discussions, Grades, Lucid (Whiteboard), Calendar, Inbox, History, and Help. On the right, there are buttons for "View Course Stream", "View Course Calendar", "View Course Notifications", "To Do" (with a note "Nothing for now"), and "Recent Feedback" (with a note "Nothing for now"). Below the dashboard is a detailed description of the Learner Lab environment, noting it provides a long-running sandbox for ad-hoc exploration of AWS services. It also mentions session limits, budget constraints, and resource cleanup at session end. A "Get Started" button is at the bottom.

Modules Page: The bottom section shows the "Modules" page for the same course. It lists several modules: "Course Welcome and Overview", "Pre-Course Survey", "AWS Academy Learner Lab Student Guide", "AWS Academy Learner Lab Compliance and Security" (with a "Complete All Items" button), "Learn how to effectively use the AWS Academy Learner Lab", "Module Knowledge Check" (with a score of 100/100), "AWS Academy Learner Lab", and "Launch AWS Academy Learner Lab". The sidebar on the left remains consistent with the Home page.

IAM roles & policies:

LabRole

The screenshot shows the AWS IAM Roles page. On the left, there's a navigation sidebar with options like Identity and Access Management (IAM), Dashboard, Access management (User groups, Users, Roles, Policies, Identity providers, Account settings, Root access management, Temporary delegation requests), Access reports (Access Analyzer, Resource analysis, Unused access, Analyzer settings, Credential report, Organization activity, Service control policies, Resource control policies), and IAM Identity Center/AWS Organizations.

The main content area is titled "LabRole info". It has a "Summary" section with details: Creation date (December 24, 2025, 14:03 UTC+05:00), ARN (arn:aws:iam::891377039157:role/LabRole), Last activity (~), Maximum session duration (1 hour), Link to switch roles in console (<https://signin.aws.amazon.com/switchrole?roleName=LabRole&account=891377039157>), and Instance profile ARN (arn:aws:iam::891377039157:instance-profile/LabInstanceProfile).

The "Permissions" tab is selected, showing "Permissions policies (7) info". It lists seven policies: AmazonEC2ContainerRegistryReadOnly, AmazonECSClusterPolicy, AmazonEKSWorkerNodePolicy, AmazonSSMManagedInstanceCore, c184191a47750351131497021w891377039157-V..., c184191a47750351131497021w891377039157-V..., and c184191a47750351131497021w891377039157-V... All are AWS managed and attached to the role.

VPC/subnets/security groups

VPC (default)

The screenshot shows the AWS VPC dashboard. The left sidebar includes options for AWS Global View, Virtual private cloud (Subnets, Route tables, Internet gateways, Egress-only internet gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, NAT gateways, Peering connections, Route servers), Security (Network ACLs, Security groups), CloudShell, and Feedback.

The main area is titled "Your VPCs". It shows one VPC entry: "Your VPCs (1/1) Info". The VPC ID is "vpc-0428b2c22c7aed6de", State is "Available", and it was last updated 8 minutes ago. There are "Actions" and "Create VPC" buttons. Below this is a detailed view for "vpc-0428b2c22c7aed6de". It shows the "Details" tab with information: VPC ID (vpc-0428b2c22c7aed6de), State (Available), Main network ACL (acl-03e24302eba6df5c3), IPv6 CIDR (Network border group), State (Available), Tenancy (default), Default VPC (Yes), Network Address Usages metrics, Block Public Access (Off), DHCP option set (dopt-01ab203e9ead0429a), IPv4 CIDR (172.31.0.0/16), Route 53 Resolver DNS Firewall rule, and DNS hostnames (Enabled). The "Main route table" is "rtb-01f90b8e72eb6cef8". The "IPv6 pool" is listed as "-". The "Owner ID" is shown as "voclabs/user4452768:bsse23002@itu.edu.pk".

Subnet (default)

The screenshot shows the AWS VPC Subnets page. On the left, there's a navigation sidebar with sections like VPC dashboard, Virtual private cloud, Security, and PrivateLink and Lattice. The main area displays a table of subnets:

Name	Subnet ID	State	VPC	Block Public...	IPv4
-	subnet-09b4ec648331c97	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-0e51299f36902ba5	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-0ebac680eb51446c8	Available	vpc-0428b2c22c7aed6de	Off	172.
<input checked="" type="checkbox"/>	subnet-0ebf8147b2311310a	Available	vpc-0428b2c22c7aed6de	Off	172.
-	subnet-08a0bc1337ded4300	Available	vpc-0428b2c22c7aed6de	Off	172.

Below the table, a modal window is open for the selected subnet: **subnet-0ebf8147b2311310a**. It contains tabs for Details, Flow logs, Route table, Network ACL, CIDR reservations, Sharing, and Tags. The Details tab shows the following information:

Details	Subnet ARN	State	Block Public Access
Subnet ID subnet-0ebf8147b2311310a	arn:aws:ec2:us-east-1:891377039157:subnet/subnet-0ebf8147b2311310a	Available	Off
IPv4 CIDR 172.31.80.0/20	Available IPv4 addresses 4091	IPv6 CIDR -	IPv6 CIDR association ID -
Availability Zone use1-az2 (us-east-1b)	Network border group us-east-1	VPC vpc-0428b2c22c7aed6de	Route table rtb-019008e72eb6cef8
Network ACL		Auto-assign public IPv4 address	Auto-assign IPv6 address

Security group

The screenshot shows the AWS Security Groups page. The left sidebar includes sections for Virtual private cloud, Security, and PrivateLink and Lattice. A success message is displayed: **Security group (sg-0950a7435a29cf1c3 | ITU-Security-Group) was created successfully**.

A modal window is open for the security group **sg-0950a7435a29cf1c3 - ITU-Security-Group**. It has tabs for Details, Inbound rules, Outbound rules, Sharing, VPC associations, and Tags. The Details tab shows:

Security group name	Security group ID	Description	VPC ID
ITU-Security-Group	sg-0950a7435a29cf1c3	ITU-Security-Group-For-Project-SDC	vpc-0428b2c22c7aed6de
Owner	891377039157	Inbound rules count 3 Permission entries	Outbound rules count 1 Permission entry

The Inbound rules tab lists three rules:

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source
-	sgr-06d7fbda295a18bb	IPv4	HTTP	TCP	80	0.0.0.0/0
-	sgr-02b2c0d30c6226297	IPv4	SSH	TCP	22	160.250.51.91/32
-	sgr-0a4ebc28b73250816	IPv4	Custom TCP	TCP	5000	0.0.0.0/0

Security group name: ITU-Security-Group
 Name cannot be edited after creation.

Description: ITU-Security-Group-For-Project-SDC

VPC Info: vpc-0428b2c22c7aed6de

Inbound rules

Type	Protocol	Port range	Source	Description - optional
SSH	TCP	22	Custom	
HTTP	TCP	80	Custom	
Custom TCP	TCP	5000	Custom	

Add rule

Outbound rules

Type	Protocol	Port range	Destination	Description - optional
All traffic	All	All	Custom	0.0.0.0/0

Add rule

EC2, S3, Lambda, DynamoDB, RDS, API Gateway, or any used service

EC2 Instance

Instances (1/1)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
ITU-Linux-Server	i-083d3fbbe372bcd97	Running	t2.micro	Initializing		us-east-1c	ec2-54-172-127-74.co...

i-083d3fbbe372bcd97 (ITU-Linux-Server)

Details

Instance summary

- Instance ID: i-083d3fbbe372bcd97
- IPv6 address: -
- Hostname type: IP name: ip-172-31-22-167.ec2.internal
- Answer private resource DNS name: IPv4 (A)
- Auto-assigned IP address: 54.172.127.74 [Public IP]

Public IPv4 address: 54.172.127.74 | open address

Instance state: Running

Private IP DNS name (IPv4 only): ip-172-31-22-167.ec2.internal

Instance type: t2.micro

VPC ID: vpc-0428b2c22c7aed6de

Private IPv4 addresses: 172.31.22.167

Public DNS: ec2-54-172-127-74.compute-1.amazonaws.com | open address

Elastic IP addresses: -

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Route Table (default)

The screenshot shows the AWS VPC Route tables page. The left sidebar navigation includes 'VPC dashboard', 'AWS Global View', 'Virtual private cloud' (with 'Route tables' selected), 'Security' (with 'Network ACLs' and 'Security groups'), and 'CloudShell' and 'Feedback' buttons. The main content area displays a table titled 'Route tables (1/1) Info'. The table has columns for Name, Route table ID, Explicit subnet associ..., Edge associations, Main, and VPC. One row is listed: 'rtb-01f90b8e72eb6cef8' (Name), 'rtb-01f90b8e72eb6cef8' (Route table ID), '—' (Explicit subnet associ...), '—' (Edge associations), 'Yes' (Main), and 'vpc-0428b2c22c7aed6de' (VPC). Below the table, a detailed view for 'rtb-01f90b8e72eb6cef8' is shown with tabs for 'Details', 'Routes', 'Subnet associations', 'Edge associations', 'Route propagation', and 'Tags'. The 'Details' tab shows the following information:

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-01f90b8e72eb6cef8	Yes	—	—
VPC	Owner ID		
vpc-0428b2c22c7aed6de	891377039157		

At the bottom right of the main content area, there are links for '© 2026, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

Internet gateway (default)

The screenshot shows the AWS VPC Internet gateways page. The left sidebar navigation includes 'VPC dashboard', 'AWS Global View', 'Virtual private cloud' (with 'Internet gateways' selected), 'Security' (with 'Network ACLs' and 'Security groups'), and 'CloudShell' and 'Feedback' buttons. The main content area displays a table titled 'Internet gateways (1/1) Info'. The table has columns for Name, Internet gateway ID, State, VPC ID, and Owner. One row is listed: 'igw-098b21d9ec04ad7d2' (Name), 'igw-098b21d9ec04ad7d2' (Internet gateway ID), 'Attached' (State), 'vpc-0428b2c22c7aed6de' (VPC ID), and '891377039157' (Owner). Below the table, a detailed view for 'igw-098b21d9ec04ad7d2' is shown with tabs for 'Details' and 'Tags'. The 'Details' tab shows the following information:

Internet gateway ID	State	VPC ID	Owner
igw-098b21d9ec04ad7d2	Attached	vpc-0428b2c22c7aed6de	891377039157

At the bottom right of the main content area, there are links for '© 2026, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

DynamoDB

The screenshot shows the AWS DynamoDB Tables page. The sidebar on the left has sections for Dashboard, Tables, Explore items, and DAX. The main area displays three tables:

Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode
Bookings	Active	id (\$)	-	0	0	Off	Star	On-demand	On-demand
Resources	Active	id (\$)	-	0	0	Off	Star	On-demand	On-demand
Users	Active	email (\$)	-	0	0	Off	Star	On-demand	On-demand

Data on DynamoDB Tables:

The screenshot shows the AWS DynamoDB Explore items page for the 'Users' table. The sidebar includes sections for Dashboard, Tables, Explore items, and DAX. The main area shows the table structure and a scan result:

Table: Users - Items returned (6)

email (String)	createdAt	id	isActive	name	password	role
bsse2308@itu.edu.pk	2025-12-2...	user-17665...	true	Laiba Ahmad	123456	USER
bsse2309@itu.edu.pk	2025-12-2...	user-17665...	true	Manal Rana	0987654321	ADMIN
bsse2300@itu.edu.pk	2025-12-2...	user-17665...	true	Turab Hashmi	123_456	USER
bsse23031@itu.edu.pk	2025-12-2...	user-17665...	true	Ayesha Us...	098765	USER
bsse23051@itu.edu.pk	2025-12-2...	user-17665...	true	Asma Haider	123456	USER
bsse23061@itu.edu.pk	2025-12-2...	user-17665...	true	Laiba Alam	098765	USER

The screenshot shows the AWS DynamoDB Explore items page for the 'Resources' table. The sidebar includes sections for Dashboard, Tables, Explore items, and DAX. The main area shows the table structure and a scan result:

Table: Resources - Items returned (15)

id (String)	availabilityHours	capacity	description	iconName	location	name	type
res-4	09:00 - 17:00	12	Executive me...	Building	Floor 5, Ad...	Board Meet...	MEETING_ROOM
res-14	09:00 - 15:00	8	Advanced ele...	Microscope	Basement L...	Microscopy ...	LAB
res-1	09:00 - 18:00	20	Specialized la...	Cpu	Floor 3, Blo...	AI & Robott...	LAB
res-13	08:00 - 18:00	60	Ideal for work...	Video	Floor 1, Blo...	Seminar Ha...	CLASSROOM

DynamoDB > Explore items > Bookings

Scan | Query

Select a table or index: Table - Bookings | Select attribute projection: All attributes

Completed - Items returned: 6 - Items scanned: 6 - Efficiency: 100% - RCU consumed: 2

Table: Bookings - Items returned (6)

Scan started on December 24, 2025, 18:20:37

	id (String)	createdAt	date	resourceId	resourceName	slot	status	userId	userName
book-1766...	2025-12-2...	2026-01-01	res-1	AI & Robotics Lab	02:15 PM - ...	PENDING	user-17665...	Asma Haider	
book-1766...	2025-12-2...	2025-12-25	res-14	Microscopy Suite	12:30 PM - ...	PENDING	user-17665...	Turab Hashmi	
book-1766...	2025-12-2...	2025-12-25	res-4	Board Meeting ...	12:30 PM - ...	REJECTED	user-17665...	Laiba Ahmad	
book-1766...	2025-12-2...	2025-12-29	res-13	Seminar Hall 2	09:00 AM - ...	PENDING	user-17665...	Ayesha Us...	
book-1766...	2025-12-2...	2025-12-25	res-13	Seminar Hall 2	12:30 PM - ...	APPROVED	user-17665...	Laiba Ahmad	
book-1766...	2025-12-2...	2025-12-26	res-12	VR / AR Testin...	02:15 PM - ...	PENDING	user-17665...	Laiba Alam	

Deployment process

Node.js and Git installation on server

```

ec2-user@ip-172-31-22-167:~$ 
Preparing : 
Installing : nodejs-docs-1:18.20.8-1.amzn2023.0.2.noarch 1/1
Installing : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 2/14
Installing : git-core-2.50.1-1.amzn2023.0.1.x86_64 3/14
Installing : git-core-doc-2.50.1-1.amzn2023.0.1.noarch 4/14
Installing : nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64 5/14
Installing : nodejs-fsevents-1:18.20.8-1.amzn2023.0.2.x86_64 6/14
Installing : nodejs-npm-1:10.8.2-1.18.20.8.1.amzn2023.0.2.x86_64 7/14
Installing : nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 8/14
Running scriptlet: nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 9/14
INFO: registered node-18 in the alternatives

Installing : perl-1-lib-0.65-477.amzn2023.0.7.x86_64 9/14
Installing : perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 10/14
Installing : perl-file-find-1.37-477.amzn2023.0.7.noarch 11/14
Installing : perl-error-1:0.17029.5.amzn2023.0.2.noarch 12/14
Installing : perl-Git-2.50.1-1.amzn2023.0.1.noarch 13/14
Installing : git-2.50.1-1.amzn2023.0.1.x86_64 14/14
Running scriptlet: git-2.50.1-1.amzn2023.0.1.x86_64 14/14
Verifying : git-2.50.1-1.amzn2023.0.1.x86_64 1/14
Verifying : git-core-2.50.1-1.amzn2023.0.1.x86_64 2/14
Verifying : git-core-doc-2.50.1-1.amzn2023.0.1.noarch 3/14
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64 4/14
Verifying : nodejs-1:18.20.8-1.amzn2023.0.2.x86_64 5/14
Verifying : nodejs-docs-1:18.20.8-1.amzn2023.0.2.noarch 6/14
Verifying : nodejs-full-1:18.20.8-1.amzn2023.0.2.x86_64 7/14
Verifying : nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64 8/14
Verifying : nodejs-npm-1:10.8.2-1.18.20.8.1.amzn2023.0.2.x86_64 9/14
Verifying : perl-error-1:0.17029.5.amzn2023.0.2.noarch 10/14
Verifying : perl-file-find-1.37-477.amzn2023.0.7.noarch 11/14
Verifying : perl-Git-2.50.1-1.amzn2023.0.1.noarch 12/14
Verifying : perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 13/14
Verifying : perl-lib-0.65-477.amzn2023.0.7.x86_64 14/14

Installed:
git-2.50.1-1.amzn2023.0.1.x86_64
git-core-doc-2.50.1-1.amzn2023.0.1.noarch
nodejs-1:18.20.8-1.amzn2023.0.2.x86_64
nodejs-full-1:18.20.8-1.amzn2023.0.2.x86_64
nodejs-libs-1:18.20.8-1.amzn2023.0.2.x86_64
perl-file-find-1.37-477.amzn2023.0.7.noarch
perl-Git-2.50.1-1.amzn2023.0.1.noarch
perl-lib-0.65-477.amzn2023.0.7.x86_64

Complete!
[ec2-user@ip-172-31-22-167 ~]$ node -v
v18.20.8
[ec2-user@ip-172-31-22-167 ~]$ npm -v
10.8.2
[ec2-user@ip-172-31-22-167 ~]$ 
```

Backend running

```
[ec2-user@ip-172-31-22-167 FE_BE-Complete_APP]$ npm run server  
> itu-department-resource-booking-system@0.0.0 server  
> tsx backend/server.ts  
  
[SERVER] ITU Resource Booking API running on port 5000  
[SERVER] Environment: development
```

Frontend running

```
VITE v6.4.1 ready in 254 ms  
  
[?] Local: http://localhost:3000/  
[?] Network: http://172.31.22.167:3000/  
[?] press h + enter to show help
```

Making server live using pm2

```
[PM2] Applying action deleteProcessId on app [backend](ids: [ 0 ])
[PM2] [backend](0) ✘


| id | name    | namespace | version | mode | pid   | uptime |   | status | cpu | mem    | user     | watching |
|----|---------|-----------|---------|------|-------|--------|---|--------|-----|--------|----------|----------|
| 0  | backend | default   | N/A     | fork | 35727 | 0s     | 0 | online | 0%  | 21.1mb | ec2-user | disabled |


[ec2-user@ip-172-31-22-167 backend]$ cd ..
[ec2-user@ip-172-31-22-167 FE_BE-Complete APP]$ cd frontend
[ec2-user@ip-172-31-22-167 frontend]$ pm2 start npm --name "frontend" -- run dev
[PM2] Starting /usr/bin/npm in fork_mode (1 instance)
[PM2] Done.


| id | name     | namespace | version | mode | pid   | uptime |   | status | cpu | mem    | user     | watching |
|----|----------|-----------|---------|------|-------|--------|---|--------|-----|--------|----------|----------|
| 0  | backend  | default   | N/A     | fork | 35727 | 58s    | 0 | online | 0%  | 52.1mb | ec2-user | disabled |
| 1  | frontend | default   | N/A     | fork | 35824 | 0s     | 0 | online | 0%  | 14.3mb | ec2-user | disabled |


[ec2-user@ip-172-31-22-167 frontend]$ pm2 list


| id | name     | namespace | version | mode | pid   | uptime |   | status | cpu | mem    | user     | watching |
|----|----------|-----------|---------|------|-------|--------|---|--------|-----|--------|----------|----------|
| 0  | backend  | default   | N/A     | fork | 35727 | 78s    | 0 | online | 0%  | 52.1mb | ec2-user | disabled |
| 1  | frontend | default   | N/A     | fork | 35824 | 20s    | 0 | online | 0%  | 52.1mb | ec2-user | disabled |


[ec2-user@ip-172-31-22-167 frontend]$ pm2 save
[PM2] Saving current process list...
[PM2] Successfully saved in /home/ec2-user/.pm2/dump.pm2
[ec2-user@ip-172-31-22-167 frontend]$
```

Testing workflow

```
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC> npm audit
# npm audit report

qs <6.14.1
Severity: high
qs's arrayLimit bypass in its bracket notation allows DoS via memory exhaustion - https://github.com/advisories/GHSA-6rw7-vpxm-498p
fix available via `npm audit fix`
node_modules/qs

1 high severity vulnerability

To address all issues, run:
  npm audit fix
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC> npm audit fix

changed 1 package, and audited 242 packages in 4s

38 packages are looking for funding
  run `npm fund` for details

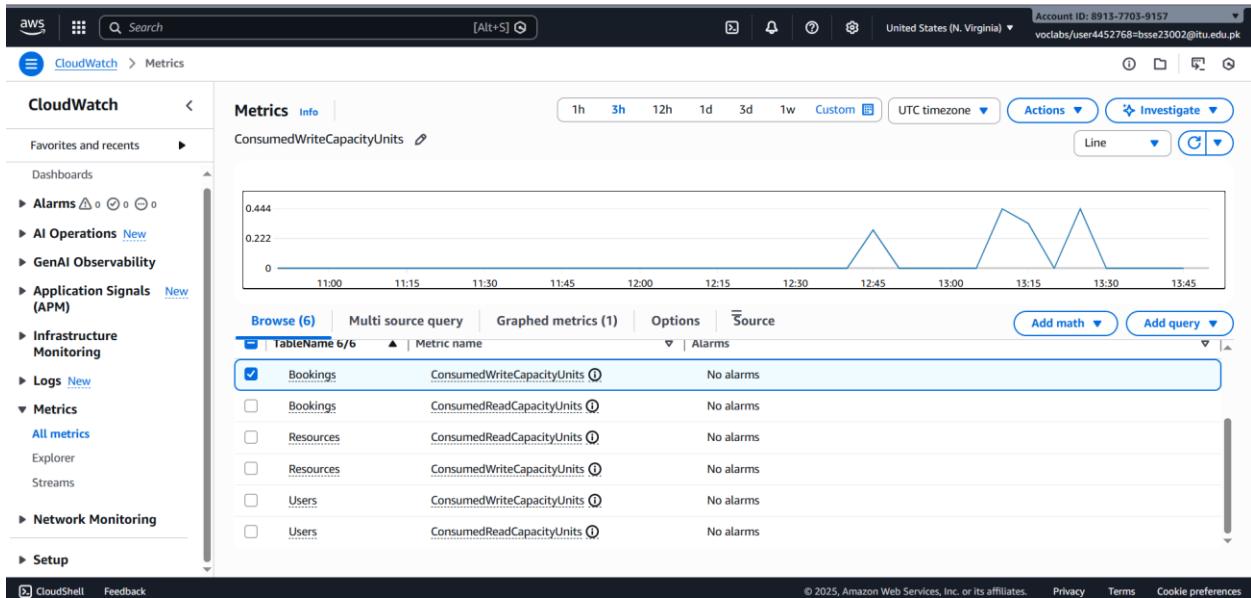
found 0 vulnerabilities
```

```
PS C:\Users\ahmad\Documents\5th Semester\AWS_project_SDC\backend> npm run server

> itu-department-resource-booking-system@0.0.0 server
> tsx backend/server.ts

[SERVER] ITU Resource Booking API running on port 5000
[SERVER] Environment: development
```

Monitoring / logging (CloudWatch)



Final output

Landing page:

Not secure 54.172.127.74:3000/#/signup

Join the Academic Network

Our specialized resource portal helps you collaborate and innovate by providing easy access to ITU's state-of-the-art facilities.

Identity Protection
Secure SSO-style authentication for all members.

Instant Access
Automatic approval for standard lab equipment.

Create Account

Register for ITU Resource Access

Full Name: John Doe

ITU Email: name@itu.edu.pk

Set Password:

Primary Role: Student Admin

Note: Admin accounts require departmental verification after registration.

Create Account →

Already have an account? [Sign In](#)

Admin dashboard

Not secure 54.172.127.74:3000/#/admin

ITU RESOURCE PORTAL

Overview

Manage Resources

Approval Queue

Manage Users

Need assistance?
Contact IT Support

Admin Center

Admin Control Panel

Institutional Oversight & Resource Orchestration

Overview Resources Approvals

TOTAL RESOURCES: 15

PENDING REQUESTS: 4

ACTIVE BOOKINGS: 1

REGISTERED USERS: 0

Incoming Requests

USER	RESOURCE	DATE/SLOT	ACTION
Asma Haider	AI & Robotics Lab	2026-01-01 02:15 PM - 03:45 PM	✓ ✗
Ayesha Usman	Seminar Hall 2	2025-12-29 09:00 AM - 10:30 AM	✓ ✗
Laiba Alam	VR / AR Testing Pod	2025-12-26 02:15 PM - 03:45 PM	✓ ✗
Turab Hashmi	Microscopy Suite	2025-12-25 12:30 PM - 02:00 PM	✓ ✗

View All

Quick Actions

+ Add New Resource

System Config

Audit Logs

SYSTEM HEALTH

Backend Sync Online

Manage booking approvals

The screenshot shows the Admin Control Panel interface. On the left is a sidebar with a dark theme containing the ITU Resource Portal logo, navigation links for Overview, Manage Resources, Approval Queue, and Manage Users, and a Contact IT Support button. The main area is titled "Admin Center" and "Admin Control Panel: Institutional Oversight & Resource Orchestration". It features a sub-section titled "All Booking Requests" with a subtitle "Full history of department resource usage". A table lists five booking requests:

User	Resource	Schedule	Status	ACTIONS
Asma Haider UID: T966582353824	AI & Robotics Lab	2026-01-01 02:15 PM - 03:45 PM	APPROVED	
Ayesha Usman UID: T966582292205	Seminar Hall 2	2025-12-29 09:00 AM - 10:30 AM	PENDING	<button>Approve</button> <button>Reject</button>
Laiba Alam UID: T966582050883	VR / AR Testing Pod	2025-12-26 02:15 PM - 03:45 PM	APPROVED	
Turab Hashmi UID: T966577691762	Microscopy Suite	2025-12-25 12:30 PM - 02:00 PM	REJECTED	
Laiba Ahmad UID: T966577814287	Seminar Hall 2	2025-12-25 12:30 PM - 02:00 PM	APPROVED	

Student Dashboard

The screenshot shows the Student Dashboard interface. On the left is a sidebar with a dark theme containing the ITU Resource Portal logo, navigation links for Dashboard, Browse Resources, and My Bookings, and a Contact IT Support button. The main area is titled "Resource Portal" and features a large purple callout box with the text "Welcome back, Turab! Manage your resource requests and discover available labs for your research projects." with two buttons: "Book a New Resource" and "View My History".

Below this, there are sections for "Popular Labs" (recommended for the user's department) and "Recent Activity".

Popular Labs: Recommended for your department.

Board Meeting Room Floor 5, Admin Block Executive meeting room with video conferencing. INSTANT BOOK	Microscopy Suite Basement Lab Area Advanced electron and fluorescent microscopes. INSTANT BOOK
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Recent Activity: Your booking updates.

Microscopy Suite 2025-12-25 12:30 PM - 02:00 PM REJECTED	12/24/2025
Manage All Bookings	

Explore resources and filter to select category

The screenshot shows the 'Resource Explorer' section of the portal. It displays six resource cards:

- Board Meeting Room** (MEETING_ROOM): Located on Floor 5, Admin Block, Capacity: 12. Description: Executive meeting room with video conferencing. Book Now.
- Microscopy Suite** (LAB): Located in Basement Lab Area, Capacity: 8. Description: Advanced electron and fluorescent microscopes. Book Now.
- AI & Robotics Lab** (LAB): Located on Floor 3, Block A, Capacity: 20. Description: Specialized lab for neural networks and hardware prototyping. Book Now.
- Seminar Hall 2** (CLASSROOM): Located on Floor 1, Block C, Capacity: 60. Description: Ideal for workshops and medium-sized presentations.
- Multimedia Design Studio** (LAB): Located on Floor 3, Block B, Capacity: 20. Description: Equipped with drawing tablets and creative software suites.
- IoT Innovation Hub** (LAB): Located on Floor 2, Block B, Capacity: 18. Description: Workbench space for Arduino, Raspberry Pi, and sensors.

A sidebar on the right shows a dropdown menu for 'All Categories' with options: All Categories, Labs, Classrooms, Meeting Rooms, and Equipment. The 'Meeting Rooms' option is selected.

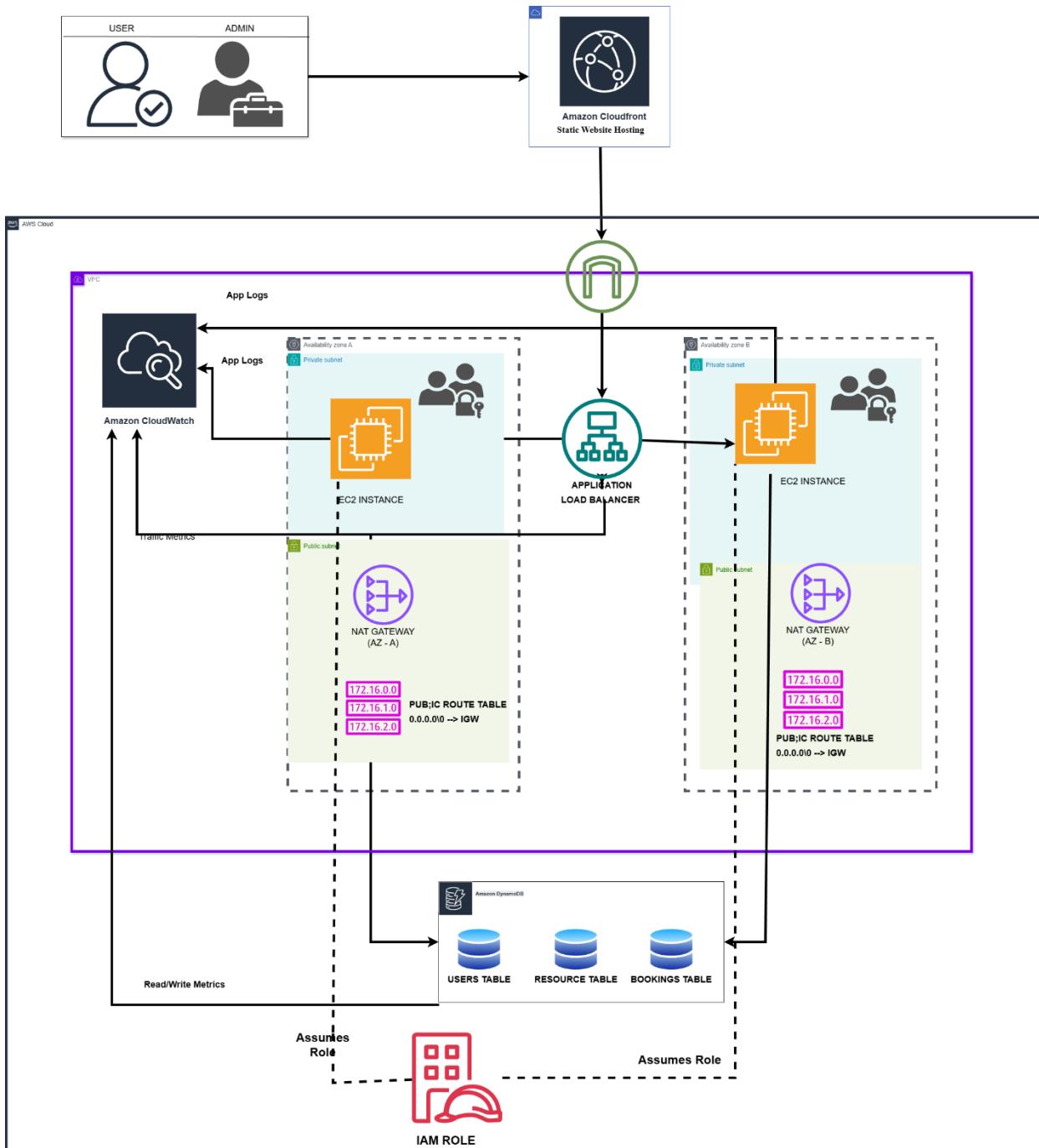
Booking History

The screenshot shows the 'My Bookings' section of the portal. It displays a single booking history entry:

Microscopy Suite
Status: REJECTED
Applied On: 12/24/2025
Booked On: 2025-12-25
Time: 12:30 PM - 02:00 PM

A 'New Booking' button is visible in the top right corner.

AWS Architecture Diagram



GITHUB LINK:

[AWS_project_SDC](#)