CLOUD COMPUTING LAB

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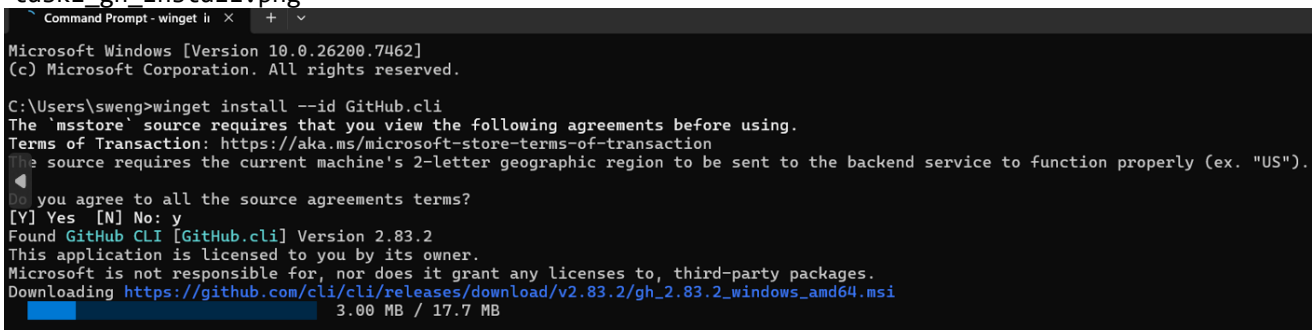
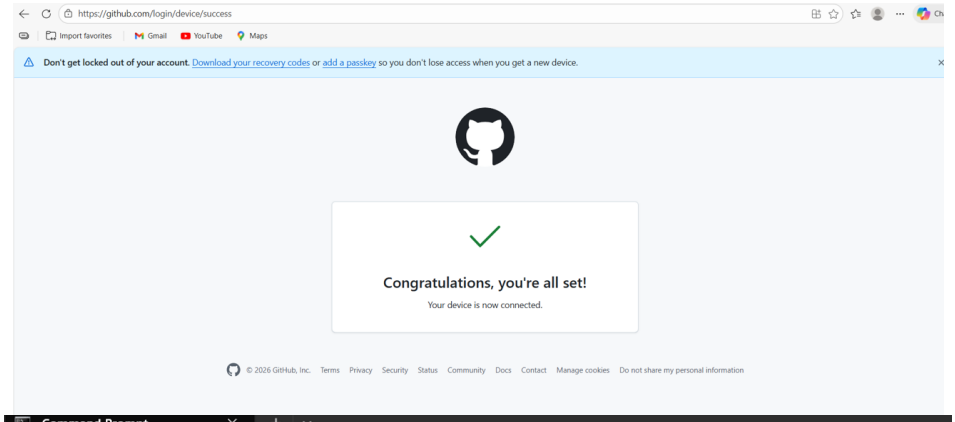
LAB #09

Task 1 — GitHub CLI, Codespace setup and authentication

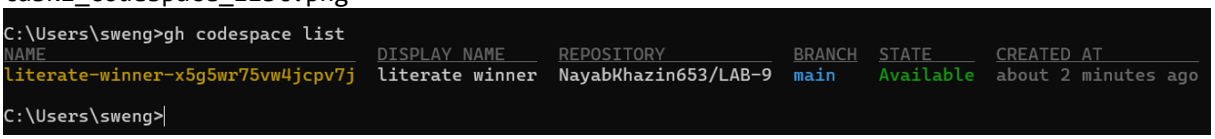
task1_gh_install.png



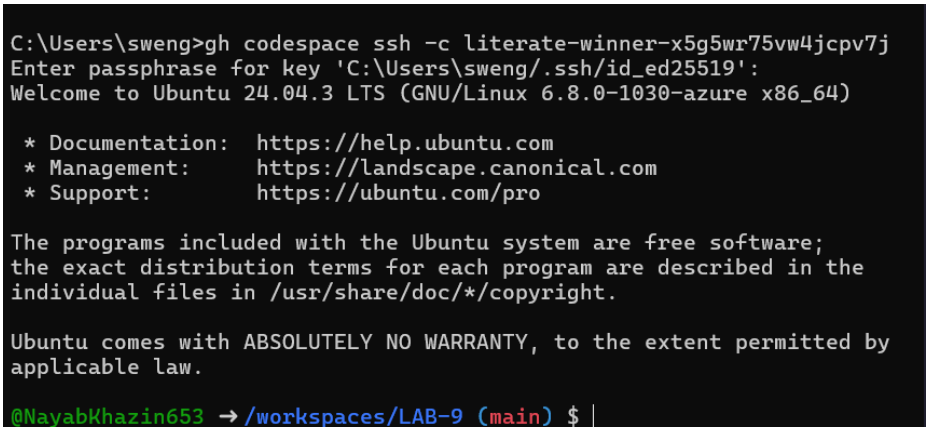
task1_gh_auth_login.png



task1_codespace_list.png

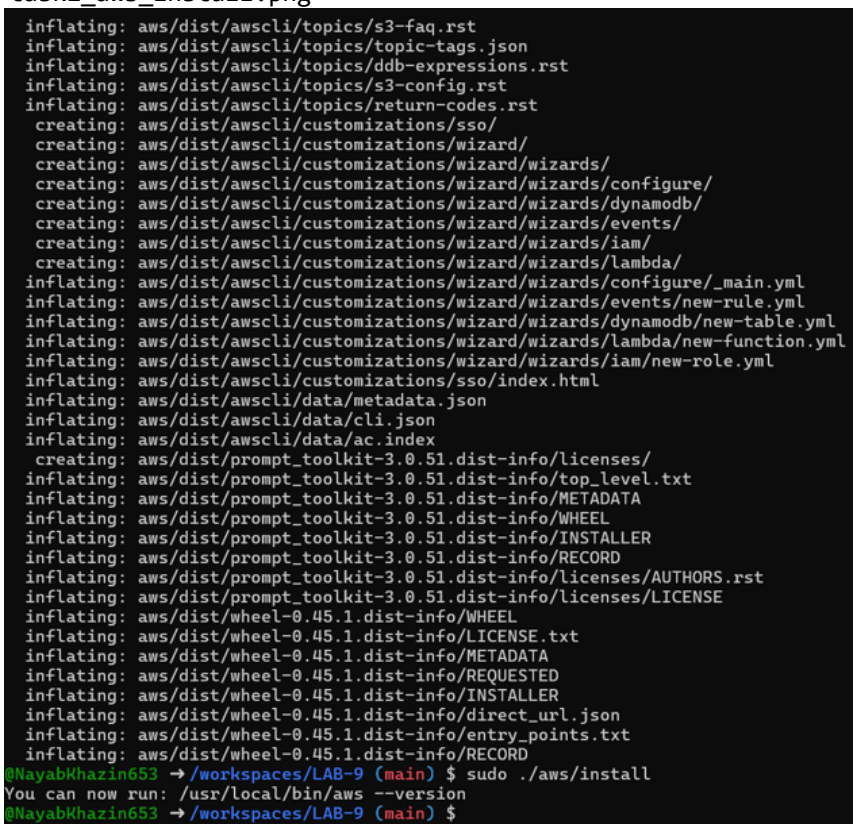


task1_codespace_ssh_connected.png

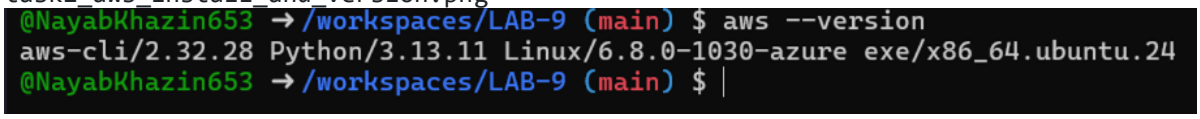


Task 2 — Install AWS CLI inside the Codespace and configure it

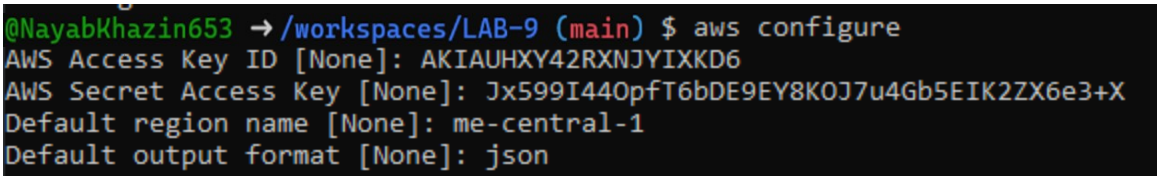
task2_aws_install.png



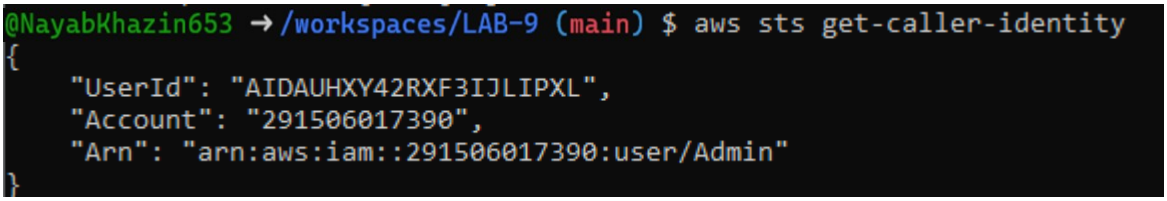
task2_aws_install_and_version.png



task2_aws_configure_and_files.png



task2_aws_get_caller_identity.png



Task 3 — Create security group and add ingress rules using Codespace IP:

task3_create_security_group_output.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 create-security-group --group-name 'MySecurityGroup' \
>     --description 'My Security Group' \
>     --vpc-id 'vpc-0e3a7ba238e097490'
{
    "GroupId": "sg-006be544db1a757c8",
    "SecurityGroupArn": "arn:aws:ec2:me-central-1:291506017390:security-group/sg-006be544db1a757c8"
}
```

task3_describe_sg_before_ingress.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-security-groups --group-ids sg-006be544db1a757c8
{
    "SecurityGroups": [
        {
            "GroupId": "sg-006be544db1a757c8",
            "IpPermissionsEgress": [
                {
                    "IpProtocol": "-1",
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "0.0.0.0/0"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                }
            ],
            "VpcId": "vpc-0e3a7ba238e097490",
            "SecurityGroupArn": "arn:aws:ec2:me-central-1:291506017390:security-group/sg-006be544db1a757c8",
            "OwnerId": "291506017390",
            "GroupName": "MySecurityGroup",
            "Description": "My Security Group",
            "IpPermissions": []
        }
    ]
}
```

task3_codespace_public_ip.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ curl icanhazip.com
13.71.3.97
```

task3_authorize_ssh.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 authorize-security-group-ingress \
>   --group-id sg-006be544db1a757c8 \
>   --protocol tcp \
>   --port 22 \
>   --cidr 13.71.3.97/32
{
    "Return": true,
    "SecurityGroupRules": [
        {
            "SecurityGroupRuleId": "sgr-0e805ff79baa67f38",
            "GroupId": "sg-006be544db1a757c8",
            "GroupOwnerId": "291506017390",
            "IsEgress": false,
            "IpProtocol": "tcp",
            "FromPort": 22,
            "ToPort": 22,
            "CidrIpv4": "13.71.3.97/32",
            "SecurityGroupRuleArn": "arn:aws:ec2:me-central-1:291506017390:security-group-rule/sgr-0e805ff79baa67f38"
        }
    ]
}
```

task3 _describe.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-security-groups --group-ids sg-006be544db1a757c8
{
    "SecurityGroups": [
        {
            "GroupId": "sg-006be544db1a757c8",
            "IpPermissionsEgress": [
                {
                    "IpProtocol": "-1",
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "0.0.0.0/0"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                }
            ],
            "VpcId": "vpc-0e3a7ba238e097490",
            "SecurityGroupArn": "arn:aws:ec2:me-central-1:291506017390:security-group/sg-006be544db1a757c8",
            "OwnerId": "291506017390",
            "GroupName": "MySecurityGroup",
            "Description": "My Security Group",
            "IpPermissions": [
                {
                    "IpProtocol": "tcp",
                    "FromPort": 22,
                    "ToPort": 22,
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "13.71.3.97/32"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                }
            ]
        }
    ]
}
```

task3_authorize_http_and_describe.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 authorize-security-group-ingress \
>   --group-id sg-006be544db1a757c8 \
>   --ip-permissions '{"FromPort":80,"ToPort":80,"IpProtocol":"tcp","IpRanges":[{"CidrIp":"13.71.3.97/32"}]}'
{
    "Return": true,
    "SecurityGroupRules": [
        {
            "SecurityGroupRuleId": "sgr-061271e523ce54c97",
            "GroupId": "sg-006be544db1a757c8",
            "GroupOwnerId": "291506017390",
            "IsEgress": false,
            "IpProtocol": "tcp",
            "FromPort": 80,
            "ToPort": 80,
            "CidrIpv4": "13.71.3.97/32",
            "SecurityGroupRuleArn": "arn:aws:ec2:me-central-1:291506017390:security-group-rule/sgr-061271e523ce54c97"
        }
    ]
}
```

task3_describe_sg_final.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-security-groups --group-ids sg-006be544db1a757c8
{
    "SecurityGroups": [
        {
            "GroupId": "sg-006be544db1a757c8",
            "IpPermissionsEgress": [
                {
                    "IpProtocol": "-1",
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "0.0.0.0/0"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                }
            ],
            "VpcId": "vpc-0e3a7ba238e097490",
            "SecurityGroupArn": "arn:aws:ec2:me-central-1:291506017390:security-group/sg-006be544db1a757c8",
            "OwnerId": "291506017390",
            "GroupName": "MySecurityGroup",
            "Description": "My Security Group",
            "IpPermissions": [
                {
                    "IpProtocol": "tcp",
                    "FromPort": 80,
                    "ToPort": 80,
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "13.71.3.97/32"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                },
                {
                    "IpProtocol": "tcp",
                    "FromPort": 22,
                    "ToPort": 22,
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "13.71.3.97/32"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
```

Task 4 — Create a key pair, describe key pairs, and launch EC2 instance

task4_create_keypair_output.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 create-key-pair \
>   --key-name MyED25519Key \
>   --key-type ed25519 \
>   --key-format pem \
>   --query 'KeyMaterial' \
>   --output text > MyED25519Key.pem
```

task4_describe_keypairs.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-key-pairs
{
    "KeyPairs": [
        {
            "KeyPairId": "key-0b3321e4b62c4b840",
            "KeyType": "ed25519",
            "Tags": [],
            "CreateTime": "2026-01-06T10:01:58.286000+00:00",
            "KeyName": "MyED25519Key",
            "KeyFingerprint": "hrChoNMA65kihbam0ALAncj7DjBaJ3R5lFSuSiHXiYs="
        }
    ]
}
```

task4_run_instances_output.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 run-instances \
>   --image-id ami-05e66df2bafcb7dea \
>   --count 1 \
>   --instance-type t3.micro \
>   --key-name MyED25519Key \
>   --security-group-ids sg-006be544db1a757c8 \
>   --subnet-id  subnet-0e02d581cfd0ee452 \
>   --tag-specifications "ResourceType=instance,Tags=[{Key=Name,Value=MyServer}]"
{
    "ReservationId": "r-0fac0d6675ffaf878",
    "OwnerId": "291506017390",
    "Groups": [],
    "Instances": [
        {
            "Architecture": "x86_64",
            "BlockDeviceMappings": [],
            "ClientToken": "372f1e5c-c8cc-4a4a-bec5-5f9995cf44e1",
            "EbsOptimized": false,
            "EnaSupport": true,
            "Hypervisor": "xen",
            "NetworkInterfaces": [
                {
                    "Attachment": {
                        "AttachTime": "2026-01-06T13:14:00+00:00",
                        "AttachmentId": "eni-attach-03795d98af75436f7",
                        "DeleteOnTermination": true,
                        "DeviceIndex": 0,
                        "Status": "attaching",
                        "NetworkCardIndex": 0
                    },
                    "Description": "",
                    "Groups": [
                        {
                            "GroupId": "sg-006be544db1a757c8",
                            "GroupName": "MySecurityGroup"
                        }
                    ],
                    "Ipv6Addresses": [],
                    "MacAddress": "0a:ad:95:4c:15:f5",
                    "NetworkInterfaceId": "eni-0fd644f08a9f5dbcb",
                    "OwnerId": "291506017390",
                    "PrivateDnsName": "ip-172-31-24-116.me-central-1.compute.internal",
                    "PrivateIpAddress": "172.31.24.116",
```

task4_describe_instances_public_ip.pn

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-instances --query "Reservations[*].Inst
PublicIpAddress,State.Name]" --output table
-------------------------------------------------------
|                  DescribeInstances                  |
+----------------------+----------------+-----------+
|  i-0fdbb82cc7e99be09 |  51.112.142.8  |  running  |
+----------------------+----------------+-----------+
```

Task 5 — Understand AWS describe-* commands

- task5_describe_security_groups.png

```
@NayabKhazin653 →/workspaces/LAB-9 (main) $ aws ec2 describe-security-groups
{
    "SecurityGroups": [
        {
            "GroupId": "sg-006be544db1a757c8",
            "IpPermissionsEgress": [
                {
                    "IpProtocol": "-1",
                    "UserIdGroupPairs": [],
                    "IpRanges": [
                        {
                            "CidrIp": "0.0.0.0/0"
                        }
                    ],
                    "Ipv6Ranges": [],
                    "PrefixListIds": []
                }
            ],
            "VpcId": "vpc-0e3a7ba238e097490",
            "SecurityGroupArn": "arn:aws:ec2:me-central-1:291506017390:security-group/sg-
            "OwnerId": "291506017390",
            "GroupName": "MySecurityGroup",
            "Description": "My Security Group",
            "IpPermissions": [
                {
                    "IpProtocol": "tcp",
                    "FromPort": 80,
                    "ToPort": 80,
                    "UserIdGroupPairs": [],
                    "IpRanges": [
:...skipping...
{
    "SecurityGroups": [
        {
            "GroupId": "sg-006be544db1a757c8",
            "IpPermissionsEgress": [
                {
                    "IpProtocol": "-1",
```

task5_describe_vpcs.png

```
@NayabKhazin653 →/workspaces/LAB-9 (main) $ aws ec2 describe-vpcs
{
    "Vpcs": [
        {
            "OwnerId": "291506017390",
            "InstanceTenancy": "default",
            "CidrBlockAssociationSet": [
                {
                    "AssociationId": "vpc-cidr-assoc-0decd793abda69466",
                    "CidrBlock": "172.31.0.0/16",
                    "CidrBlockState": {
                        "State": "associated"
                    }
                }
            ],
            "IsDefault": true,
            "BlockPublicAccessStates": {
                "InternetGatewayBlockMode": "off"
            },
            "VpcId": "vpc-0e3a7ba238e097490",
            "State": "available",
            "CidrBlock": "172.31.0.0/16",
            "DhcpOptionsId": "dopt-09d2afde96c48ccf8"
        }
    ]
}
```

task5_describe_subnets.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-subnets
{
    "Subnets": [
        {
            "AvailabilityZoneId": "mec1-az1",
            "MapCustomerOwnedIpOnLaunch": false,
            "OwnerId": "291506017390",
            "AssignIpv6AddressOnCreation": false,
            "Ipv6CidrBlockAssociationSet": [],
            "SubnetArn": "arn:aws:ec2:me-central-1:291506017390:subnet/subnet-06a59b3771
            "EnableDns64": false,
            "Ipv6Native": false,
            "PrivateDnsNameOptionsOnLaunch": {
                "HostnameType": "ip-name",
                "EnableResourceNameDnsARecord": false,
                "EnableResourceNameDnsAAAARecord": false
            },
            "BlockPublicAccessStates": {
                "InternetGatewayBlockMode": "off"
            },
            "SubnetId": "subnet-06a59b3771518f03a",
            "State": "available",
            "VpcId": "vpc-0e3a7ba238e097490",
            "CidrBlock": "172.31.32.0/20",
            "AvailableIpAddressCount": 4091,
            "AvailabilityZone": "me-central-1a",
            "DefaultForAz": true,
            "MapPublicIpOnLaunch": true
        },
        {
            "AvailabilityZoneId": "mec1-az2",
            "MapCustomerOwnedIpOnLaunch": false,
            "OwnerId": "291506017390",
            "AssignIpv6AddressOnCreation": false,
            "Ipv6CidrBlockAssociationSet": [],
            "SubnetArn": "arn:aws:ec2:me-central-1:291506017390:subnet/subnet-0e02d581cf
            "EnableDns64": false,
            "Ipv6Native": false,
```

task5_describe_instances.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws ec2 describe-instances
{
    "Reservations": [
        {
            "ReservationId": "r-0fac0d6675ffaf878",
            "OwnerId": "291506017390",
            "Groups": [],
            "Instances": [
                {
                    "Architecture": "x86_64",
                    "BlockDeviceMappings": [
                        {
                            "DeviceName": "/dev/xvda",
                            "Ebs": {
                                "AttachTime": "2026-01-06T13:14:01+00:00",
                                "DeleteOnTermination": true,
                                "Status": "attached",
                                "VolumeId": "vol-0fa829739547640a6"
                            }
                        }
                    ],
                    "ClientToken": "372f1e5c-c8cc-4a4a-bec5-5f9995cf44e1",
                    "EbsOptimized": false,
                    "EnaSupport": true,
                    "Hypervisor": "xen",
                    "NetworkInterfaces": [
                        {
                            "Association": {
                                "IpOwnerId": "amazon",
                                "PublicDnsName": "ec2-51-112-142-8.me-central-1.comp
                                "PublicIp": "51.112.142.8"
                            },
                            "Attachment": {
                                "AttachTime": "2026-01-06T13:14:00+00:00",
                                "AttachmentId": "eni-attach-03795d98af75436f7",
                                "DeleteOnTermination": true,
                                "DeviceIndex": 0,
                                "Status": "attached",
                                "NetworkCardIndex": 0
                            },
                            "Description": "",
                            "Groups": [
```

task5_describe_regions.png

```
@NayabKhazin653 → /workspaces/LAB-9 (main) $ aws ec2 describe-regions
{
    "Regions": [
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "ap-south-1",
            "Endpoint": "ec2.ap-south-1.amazonaws.com"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "eu-north-1",
            "Endpoint": "ec2.eu-north-1.amazonaws.com"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "eu-west-3",
            "Endpoint": "ec2.eu-west-3.amazonaws.com"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "eu-west-2",
            "Endpoint": "ec2.eu-west-2.amazonaws.com"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "eu-west-1",
            "Endpoint": "ec2.eu-west-1.amazonaws.com"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "RegionName": "ap-northeast-3",
            "Endpoint": "ec2.ap-northeast-3.amazonaws.com"
        },
```

task5_describe_availability_zones.png

```
        },
@NayabKhazin653 → /workspaces/LAB-9 (main) $ aws ec2 describe-availability-zones
{
    "AvailabilityZones": [
        {
            "OptInStatus": "opt-in-not-required",
            "Messages": [],
            "RegionName": "me-central-1",
            "ZoneName": "me-central-1a",
            "ZoneId": "mec1-az1",
            "GroupName": "me-central-1-zg-1",
            "NetworkBorderGroup": "me-central-1",
            "ZoneType": "availability-zone",
            "GroupLongName": "Middle East (UAE) 1",
            "State": "available"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "Messages": [],
            "RegionName": "me-central-1",
            "ZoneName": "me-central-1b",
            "ZoneId": "mec1-az2",
            "GroupName": "me-central-1-zg-1",
            "NetworkBorderGroup": "me-central-1",
            "ZoneType": "availability-zone",
            "GroupLongName": "Middle East (UAE) 1",
            "State": "available"
        },
        {
            "OptInStatus": "opt-in-not-required",
            "Messages": [],
            "RegionName": "me-central-1",
            "ZoneName": "me-central-1c",
            "ZoneId": "mec1-az3",
            "GroupName": "me-central-1-zg-1",
            "NetworkBorderGroup": "me-central-1",
            "ZoneType": "availability-zone",
```

Task 6 — IAM: create group, user, attach policies, create console login & keys

task6_create_group_and_user.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam create-group --group
pCli
{
    "Group": {
        "Path": "/",
        "GroupName": "MyGroupCli",
        "GroupId": "AGPAUHXY42RXNQM5VYWLT",
        "Arn": "arn:aws:iam::291506017390:group/MyGroupCli",
        "CreateDate": "2026-01-06T14:18:06+00:00"
    }
}
```

task6_create_group_and_user.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam get-group --group-name MyGroupCl
i
{
    "Users": [],
    "Group": {
        "Path": "/",
        "GroupName": "MyGroupCli",
        "GroupId": "AGPAUHXY42RXNQM5VYWLT",
        "Arn": "arn:aws:iam::291506017390:group/MyGroupCli",
        "CreateDate": "2026-01-06T14:18:06+00:00"
    }
}
```

task6_create_group_and_user.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam create-user --user-name MyUserCl
i
{
    "User": {
        "Path": "/",
        "UserName": "MyUserCli",
        "UserId": "AIDAUHXY42RXNXZ4ISGJZ",
        "Arn": "arn:aws:iam::291506017390:user/MyUserCli",
        "CreateDate": "2026-01-06T14:19:06+00:00"
    }
}
```

task6_create_group_and_user.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam get-user --user-name MyUserCli
{
    "User": {
        "Path": "/",
        "UserName": "MyUserCli",
        "UserId": "AIDAUHXY42RXNXZ4ISGJZ",
        "Arn": "arn:aws:iam::291506017390:user/MyUserCli",
        "CreateDate": "2026-01-06T14:19:06+00:00"
    }
}
```

task6_add_user_to_group_and_verify.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam add-user-to-group --user-name My
UserCli --group-name MyGroupCli
```

task6_add_user_to_group_and_verify.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam get-group --group-name MyGroupCl
{
    "Users": [
        {
            "Path": "/",
            "UserName": "MyUserCli",
            "UserId": "AIDAUHXY42RXNXZ4ISGJZ",
            "Arn": "arn:aws:iam::291506017390:user/MyUserCli",
            "CreateDate": "2026-01-06T14:19:06+00:00"
        }
    ],
    "Group": {
        "Path": "/",
        "GroupName": "MyGroupCli",
        "GroupId": "AGPAUHXY42RXNQM5VYWLT",
        "Arn": "arn:aws:iam::291506017390:group/MyGroupCli",
        "CreateDate": "2026-01-06T14:18:06+00:00"
    }
}
```

task6_policy_list_and_attach.png

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam list-policies \
>   --query "Policies[?contains(PolicyName, 'EC2')].{Name:PolicyName}" \
>   --output text
AmazonEC2FullAccess
AmazonEC2ReadOnlyAccess
AmazonElasticMapReduceforEC2Role
AmazonEC2RoleforDataPipelineRole
AmazonEC2ContainerServiceforEC2Role
AmazonEC2ContainerServiceRole
AmazonEC2RoleforAWSCodeDeploy
AmazonEC2RoleforSSM
CloudWatchActionsEC2Access
AmazonEC2ContainerRegistryReadOnly
AmazonEC2ContainerRegistryPowerUser
AmazonEC2ContainerRegistryFullAccess
AmazonEC2ContainerServiceAutoscaleRole
AmazonEC2SpotFleetAutoscaleRole
AWSElasticBeanstalkCustomPlatformforEC2Role
AmazonEC2ContainerServiceEventsRole
AmazonEC2SpotFleetTaggingRole
AWSEC2SpotServiceRolePolicy
AWSServiceRoleForEC2ScheduledInstances
AWSEC2SpotFleetServiceRolePolicy
AWSApplicationAutoscalingEC2SpotFleetRequestPolicy
AWSEC2FleetServiceRolePolicy
AWSAutoScalingPlansEC2AutoScalingPolicy
EC2InstanceConnect
AmazonEC2RolePolicyForLaunchWizard
EC2InstanceProfileForImageBuilder
EC2FleetTimeShiftableServiceRolePolicy
AmazonEC2RoleforAWSCodeDeployLimited
EC2InstanceProfileForImageBuilderECRContainerBuilds
AWSApplicationMigrationEC2Access
AWSEC2CapacityReservationFleetRolePolicy
EC2FastLaunchServiceRolePolicy
AmazonSSMManagedEC2InstanceDefaultPolicy
AWSFaultInjectionSimulatorEC2Access
EC2ImageBuilderLifecycleExecutionPolicy
AWSEC2VssSnapshotPolicy
EC2FastLaunchFullAccess
```

task6_policy_list_and_attach.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam list-policies --query 'Policies[
?PolicyName==`AmazonEC2FullAccess`].{Name:PolicyName, ARN:Arn}' --output table
-------------------------------------------------------------------
|                          ListPolicies                           |
+-----------------------------------------------+-----------------+
|                      ARN                      |      Name       |
+-----------------------------------------------+-----------------+
|  arn:aws:iam::aws:policy/AmazonEC2FullAccess  |  AmazonEC2FullAccess  |
+-----------------------------------------------+-----------------+
```

task6_policy_list_and_attach.png

```
@NayabKhazin653 ➜ /workspaces/LAB-9 (main) $ aws iam attach-group-policy \
>   --group-name MyGroupCli \
>   --policy-arn arn:aws:iam::aws:policy/AmazonEC2FullAccess
```

task6_policy_list_and_attach.png

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam list-attached-group-policies --g
oup-name MyGroupCli

   "AttachedPolicies": [
      {
          "PolicyName": "AmazonEC2FullAccess",
          "PolicyArn": "arn:aws:iam::aws:policy/AmazonEC2FullAccess"
      }
   ]
```

task6_create_login_profile_and_signin.png

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam attach-group-policy --group-name MyGroupCli --policy-arn arn:aws:iam::aws:policy/IAMUserChangePassword
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam detach-group-policy --group-name MyGroupCli --policy-arn arn:aws:iam::aws:policy/IAMUserChangePassword
```

task6_create_access_key_output.png

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam create-access-key --user-name MyUserCli
{
    "AccessKey": {
        "UserName": "MyUserCli",
        "AccessKeyId": "AKIAUHXY42RXI2JEINEH",
        "Status": "Active",
        "SecretAccessKey": "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",
        "CreateDate": "2026-01-06T14:46:29+00:00"
    }
}
```

task6_create_access_key_output.pn

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws iam list-access-keys --user-name MyUserCli
{
    "AccessKeyMetadata": [
        {
            "UserName": "MyUserCli",
            "AccessKeyId": "AKIAUHXY42RXI2JEINEH",
            "Status": "Active",
            "CreateDate": "2026-01-06T14:46:29+00:00"
        }
    ]
}
```

task6_create_access_key_output.png

```
@NayabKhazin65 /workspaces/Lab-9 (main) $ export AWS_ACCESS_KEY_ID=AKIAUHXY42RXI2JEINEH
@NayabKhazin65 /workspaces/Lab-9 (main) $ export AWS_SECRET_ACCESS_KEY=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
@NayabKhazin65 /workspaces/Lab-9 (main) $ printenv | grep AWS_
AWS_SECRET_ACCESS_KEY=A2/3W0VEV3hNAWyh/rYVD2PjwlBW/7PbueIQpm53
AWS_ACCESS_KEY_ID=AKIAUHXY42RXI2JEINEH
@NayabKhazin65 /workspaces/Lab-9 (main) $ aws iam get-user --user-name MyUserCli

An error occurred (AccessDenied) when calling the GetUser operation: User: arn:aws:iam::291506017396:user/MyUserCli is not authorized to perform: iam:GetUser on resourc
e: user MyUserCli because no identity-based policy allows the iam:GetUser action
```

task6_env_exports_and_get_user_error.png

Task 7 — Filters: query with filters to find instances and their attributes

task7_filter_by_tag_public_ip.png

```
>   --filters "Name=tag:Name,Values=MyServer" \
>   --query "Reservations[*].Instances[*].PublicIpAddress" \
>   --output text
40.172.230.52
```

task7_filter_by_instance_type.png

```
>   --filters "Name=instance-type,Values=t3.micro" \
>   --query "Reservations[].Instances[].InstanceId" \
>   --output table
----------------------
|   DescribeInstances   |
+-----------------------+
|  i-0403609d04099cbcb  |
+-----------------------+
```

task7_filter_by_subnet.png

```
>   --filters "Name=subnet-id,Values= subnet-05d6cfad232c55c6f" \
>   --query "Reservations[*].Instances[*].InstanceId" \
>   --output table

------------------------
|   DescribeInstances   |
+-----------------------+
|  i-0403609d04099cbcb  |
+-----------------------+
```

task7_filter_by_vpc.png

```
>   --filters "Name=vpc-id,Values= vpc-0bfbc7302dc628797" \
>   --query "Reservations[*].Instances[*].InstanceId" \
>   --output table
-------------------------
|   DescribeInstances   |
+-----------------------+
|  i-0403609d04099cbcb  |
+-----------------------+
```

Task 8 — Use --query to format outputs for reporting

task8_query_table_instances_name_ip.png

```
>   --filters "Name=tag:Name,Values=MyServer" \
>   --query "Reservations[*].Instances[*].[InstanceId,PublicIpAddress,Tags[?Key=='Name'].Value|[0]]" \
>   --output table
-------------------------------------------------
|                DescribeInstances              |
+----------------------+----------------+--------+
|  i-0403609d04099cbcb |  40.172.230.52 |  MyServer |
+----------------------+----------------+--------+
```

task8_query_table_instance_state.png

```
>   --query "Reservations[*].Instances[*].[InstanceId,State.Name]" \
>   --output table
-----------------------------------
|        DescribeInstances        |
+----------------------+----------+
|  i-0403609d04099cbcb |  running |
+----------------------+----------+
```

task8_query_table_instance_type_az.png

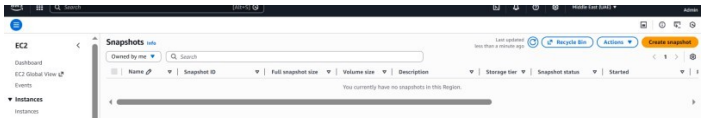
```
>   --query "Reservations[*].Instances[*].[InstanceId,InstanceType,Placement.AvailabilityZone]" \
>   --output table
-------------------------------------------------
|                DescribeInstances              |
+----------------------+----------+--------------+
|  i-0403609d04099cbcb |  t3.micro |  me-central-1b  |
+----------------------+----------+--------------+
```

Cleanup — Remove resources to avoid charges

cleanup_terminate_instance.png

```
@NayabKhazin653 /workspaces/Lab12 (main) $ aws ec2 terminate-instances --instance-ids  i-0403609d04099cbcb
{
    "TerminatingInstances": [
        {
            "InstanceId": "i-0403609d04099cbcb",
            "CurrentState": {
                "Code": 32,
                "Name": "shutting-down"
            },
            "PreviousState": {
                "Code": 16,
                "Name": "running"
            }
        }
    ]
```

cleanup_delete_volumes_snapshots.png



cleanup_delete_security_group_and_keypair.png

```
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws ec2 delete-security-group --group-id sg-030a3daa25d097dca
{
    "Return": true,
    "GroupId": "sg-030a3daa25d097dca"
}
@NayabKhazin653 /workspaces/Lab-9 (main) $ aws ec2 delete-key-pair --key-name MyED25519Key
{
    "Return": true,
    "KeyPairId": "key-0d56d4d48d655a50f"
}
```

cleanup_iam_users_deleted.png

```
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam delete-access-key --user-name MyUserCli --access-key-id AKIAZCUSI5S7GM4AUFLM
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam delete-login-profile --user-name MyUserCli
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam remove-user-from-group --user-name MyUserCli --group-name MyGroupCli
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam delete-user --user-name MyUserCli
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam detach-group-policy --group-name MyGroupCli --policy-arn arn:aws:iam::aws:policy/AmazonEC2FullAccess
@NayabKhazin653 /workspaces/Lab12 (main) $ aws iam delete-group --group-name MyGroupCli
```

cleanup_summary.png