TASK 1:

Task 1 : Have to create/launch Application using Terraform

- 1. Create the key and security group which allow the port 80.
- 2. Launch EC2 instance.

to_port = 22

- 3. In this Ec2 instance use the key and security group which we have created in step 1.
- 4. Launch one Volume (EBS) and mount that volume into /var/www/html
- 5. Developer have uploded the code into github repo also the repo has some images.
- 6. Copy the github repo code into /var/www/html
- 7. Create S3 bucket, and copy/deploy the images from github repo into the s3 bucket and change the permission to public readable.
- 8 Create a Cloudfront using s3 bucket(which contains images) and use the Cloudfront URL to update in code in /var/www/html

```
Notepad file:
Git link to download:https://github.com/visheshgargavi/hybrid-task1.git
provider "aws" {
 region = "ap-south-1"
 profile = "myvishesh"
}
resource "aws key pair" "task1-key" {
 key name = "task1-key"
 public key = "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQCzXD5tF1G5oF3StxzKbT3TvwtL2P/ZotKFARLsZr7
KEfaHU4ZPA3q3dcnkum67HpNV4p/v8EIIUFFsX2ZuxH2sN5UYKDm6WmPdII+vkc+JBE65/CiK
2m5RJ7mwclgJpQuNdYdREzA79FX+ZFTyBlt/KMwb06wcgWonYPpWcVxujpIot2rag+ZA5TcR5
KyZKSfdM7AIMLUHARPAKjo2ikmvccNSLxg2P6AJf7Epqb0rvfb3skv34w0EsIQSZD/s/nSmNifcV
SVXTKegqAUIIMC17Od+YwfUM0dFgQNpF54WJzvaRF2tFv5pMQFRr6qLQBNFoe8ezvz2b26
m9gMAwX0I"
resource "aws_security_group" "task1-sg" {
          = "task1-sg"
 description = "Allow TLS inbound traffic"
 vpc id
        = "vpc-15f8e57d"
 ingress {
  description = "SSH"
  from port = 22
```

```
protocol = "tcp"
  cidr_blocks = [ "0.0.0.0/0" ]
 }
 ingress {
  description = "HTTP"
  from_port = 80
  to_port = 80
  protocol = "tcp"
  cidr_blocks = ["0.0.0.0/0"]
 }
 egress {
  from_port = 0
  to_port = 0
  protocol = "-1"
  cidr_blocks = ["0.0.0.0/0"]
 }
 tags = {
  Name = "task1-sg"
}
resource "aws_ebs_volume" "task1-ebs" {
 availability_zone = "ap-south-1a"
 size
             = 1
 tags = {
  Name = "task1-ebs"
 }
resource "aws_volume_attachment" "task1-attach" {
device_name = "/dev/sdf"
volume_id = "${aws_ebs_volume.task1-ebs.id}"
instance_id = "${aws_instance.task1-inst.id}"
}
resource "aws_instance" "task1-inst" {
           = "ami-0447a12f28fddb066"
 instance_type = "t2.micro"
 availability_zone = "ap-south-1a"
 key_name
              = "task1-key"
 security_groups = [ "task1-sg" ]
```

```
user_data = <<-EOF
    #! /bin/bash
    sudo yum install httpd -y
    sudo systemctl start httpd
    sudo systemctl enable httpd
    sudo yum install git -y
    mkfs.ext4 /dev/xvdf1
    mount /dev/xvdf1 /var/www/html
    cd /var/www/html
    git clone https://github.com/visheshgargavi/hybrid-task1</pre>
EOF

tags = {
    Name = "task1-inst"
}
```

run using terraform

C:\Users\user\Desktop\terraform\test>dir Volume in drive C is vishesh Volume Serial Number is 1CF6-F84B

Directory of C:\Users\user\Desktop\terraform\test

C:\Users\user\Desktop\terraform\test>terraform apply

An execution plan has been generated and is shown below. Resource actions are indicated with the following symbols: + create

Terraform will perform the following actions:

```
# aws_ebs_volume.task1-ebs will be created
```

```
+ resource "aws_ebs_volume" "task1-ebs" {
  + arn
                 = (known after apply)
  + availability_zone = "ap-south-1a"
  + encrypted
                   = (known after apply)
  + id
                = (known after apply)
  + iops
                 = (known after apply)
                     = (known after apply)
  + kms_key_id
  + size
                 = 1
  + snapshot id
                    = (known after apply)
  + tags
                 = {
     + "Name" = "task1-ebs"
   }
  + type
                 = (known after apply)
 }
# aws instance.task1-inst will be created
+ resource "aws_instance" "task1-inst" {
  + ami
                        = "ami-0447a12f28fddb066"
  + arn
                       = (known after apply)
  + associate public ip address = (known after apply)
  + availability_zone
                            = "ap-south-1a"
  + cpu_core_count
                             = (known after apply)
  + cpu_threads_per_core
                                = (known after apply)
  + get_password_data
                               = false
  + host id
                         = (known after apply)
  + id
                      = (known after apply)
  + instance state
                            = (known after apply)
  + instance_type
                           = "t2.micro"
  + ipv6_address_count
                               = (known after apply)
                             = (known after apply)
  + ipv6 addresses
  + key name
                           = "task1-key"
  + network_interface_id
                              = (known after apply)
  + outpost arn
                           = (known after apply)
  + password data
                             = (known after apply)
  + placement_group
                              = (known after apply)
  + primary_network_interface_id = (known after apply)
  + private_dns
                           = (known after apply)
  + private ip
                         = (known after apply)
  + public_dns
                          = (known after apply)
  + public_ip
                         = (known after apply)
  + security_groups
                            = [
     + "task1-sg",
   ]
```

```
+ source_dest_check
                            = true
+ subnet id
                       = (known after apply)
+ tags
  + "Name" = "task1-inst"
 }
+ tenancy
                      = (known after apply)
+ user_data
                       = "3d5ac70f59d7d0941bdb0d33138f1decc64716d4"
+ volume tags
                         = (known after apply)
+ vpc_security_group_ids
                             = (known after apply)
+ ebs_block_device {
  + delete_on_termination = (known after apply)
  + device_name
                        = (known after apply)
  + encrypted
                      = (known after apply)
  + iops
                   = (known after apply)
  + kms_key_id
                       = (known after apply)
  + snapshot_id
                      = (known after apply)
  + volume_id
                      = (known after apply)
  + volume size
                       = (known after apply)
  + volume type
                       = (known after apply)
 }
+ ephemeral_block_device {
  + device name = (known after apply)
  + no_device = (known after apply)
  + virtual_name = (known after apply)
 }
+ metadata_options {
  + http endpoint
                          = (known after apply)
  + http_put_response_hop_limit = (known after apply)
  + http_tokens
                         = (known after apply)
 }
+ network_interface {
  + delete_on_termination = (known after apply)
  + device index
                       = (known after apply)
  + network_interface_id = (known after apply)
 }
+ root_block_device {
  + delete on termination = (known after apply)
  + device_name
                        = (known after apply)
```

```
+ iops
                     = (known after apply)
     + kms_key_id
                         = (known after apply)
     + volume id
                        = (known after apply)
     + volume size
                         = (known after apply)
     + volume_type
                         = (known after apply)
    }
  }
 # aws_key_pair.task1-key will be created
 + resource "aws key pair" "task1-key" {
   + fingerprint = (known after apply)
   + id
            = (known after apply)
   + key_name = "task1-key"
   + key_pair_id = (known after apply)
   + public key = "ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQCzXD5tF1G5oF3StxzKbT3TvwtL2P/ZotKFARLsZr7
KEfaHU4ZPA3q3dcnkum67HpNV4p/v8EIIUFFsX2ZuxH2sN5UYKDm6WmPdII+vkc+JBE65/CiK
2m5RJ7mwclgJpQuNdYdREzA79FX+ZFTyBlt/KMwb06wcgWonYPpWcVxujpIot2rag+ZA5TcR5
KyZKSfdM7AIMLUHARPAKjo2ikmvccNSLxg2P6AJf7Epgb0rvfb3skv34w0EslQSZD/s/nSmNifcV
SVXTKeggAUIIMC17Od+YwfUM0dFgQNpF54WJzvaRF2tFv5pMQFRr6qLQBNFoe8ezvz2b26
m9gMAwX0I"
  }
 # aws_security_group.task1-sg will be created
 + resource "aws_security_group" "task1-sg" {
   + arn
                   = (known after apply)
                     = "Allow TLS inbound traffic"
   + description
   + egress
                     = [
     + {
        + cidr blocks
                       = [
          + "0.0.0.0/0",
        1
        + description
        + from_port
                       = 0
        + ipv6_cidr_blocks = []
        + prefix list ids = []
        + protocol
                      = "-1"
        + security_groups = []
        + self
                    = false
        + to_port
                     = 0
      },
    ]
```

= (known after apply)

+ encrypted

```
+ id
                   = (known after apply)
  + ingress
                     = [
     + {
       + cidr_blocks
                        = [
          + "0.0.0.0/0",
        ]
       + description
                        = "HTTP"
       + from_port
                        = 80
       + ipv6_cidr_blocks = []
       + prefix_list_ids = []
       + protocol
                       = "tcp"
       + security_groups = []
       + self
                     = false
                      = 80
       + to_port
      },
     + {
       + cidr_blocks
                        = [
          + "0.0.0.0/0",
                        = "SSH"
       + description
       + from_port
                        = 22
       + ipv6_cidr_blocks = []
       + prefix_list_ids = []
                       = "tcp"
       + protocol
       + security_groups = []
                     = false
       + self
                      = 22
       + to_port
      },
   ]
                      = "task1-sg"
  + name
  + owner id
                      = (known after apply)
  + revoke_rules_on_delete = false
  + tags
                    = {
     + "Name" = "task1-sg"
   }
                     = "vpc-15f8e57d"
  + vpc_id
 }
# aws_volume_attachment.task1-attach will be created
+ resource "aws_volume_attachment" "task1-attach" {
  + device_name = "/dev/sdf"
  + id
            = (known after apply)
  + instance_id = (known after apply)
```

```
+ volume_id = (known after apply)
}
```

Plan: 5 to add, 0 to change, 0 to destroy.

Warning: Interpolation-only expressions are deprecated

```
on key.tf line 55, in resource "aws_volume_attachment" "task1-attach": 55: volume_id = "${aws_ebs_volume.task1-ebs.id}"
```

Terraform 0.11 and earlier required all non-constant expressions to be provided via interpolation syntax, but this pattern is now deprecated. To silence this warning, remove the "\${ sequence from the start and the }" sequence from the end of this expression, leaving just the inner expression.

Template interpolation syntax is still used to construct strings from expressions when the template includes multiple interpolation sequences or a mixture of literal strings and interpolations. This deprecation applies only to templates that consist entirely of a single interpolation sequence.

(and one more similar warning elsewhere)

Do you want to perform these actions?

Terraform will perform the actions described above.

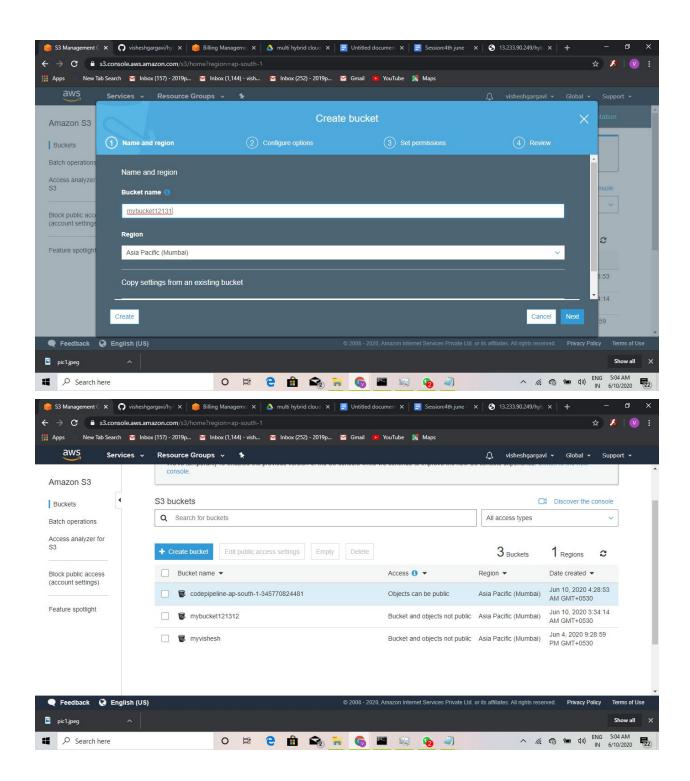
Only 'yes' will be accepted to approve.

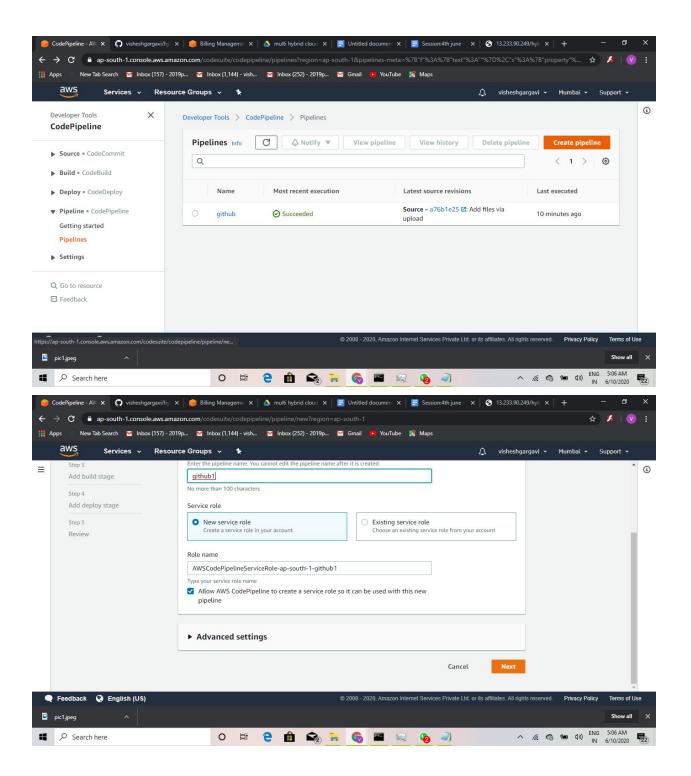
Enter a value: yes

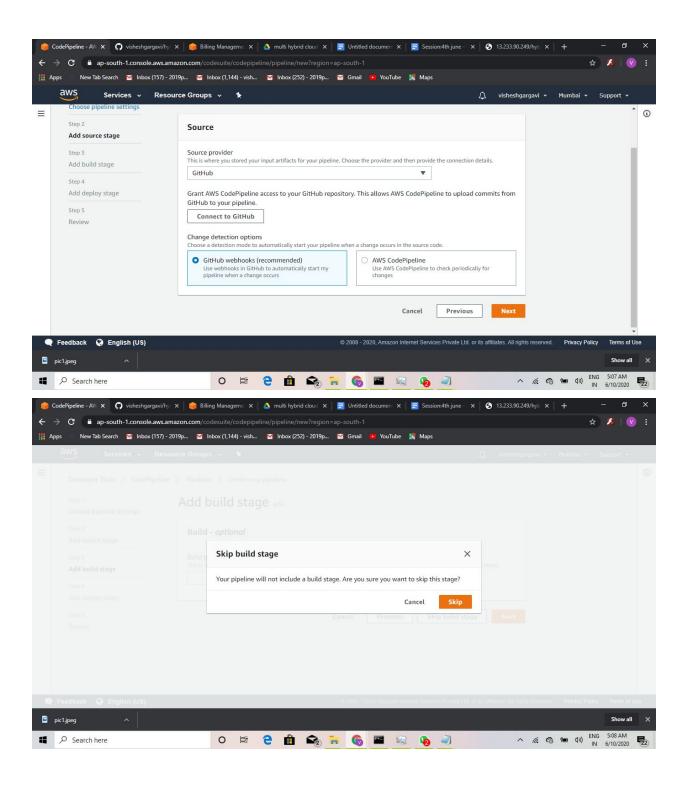
```
aws_key_pair.task1-key: Creating...
aws_ebs_volume.task1-ebs: Creating...
aws_instance.task1-inst: Creating...
aws_security_group.task1-sg: Creating...
aws_key_pair.task1-key: Creation complete after 1s [id=task1-key]
aws_security_group.task1-sg: Creation complete after 4s [id=sg-0b329fce8b424f0f9]
aws_ebs_volume.task1-ebs: Still creating... [10s elapsed]
aws_instance.task1-inst: Still creating... [10s elapsed]
aws_ebs_volume.task1-ebs: Creation complete after 11s [id=vol-04a8e6290500b6b59]
aws_instance.task1-inst: Still creating... [20s elapsed]
aws_instance.task1-inst: Creation complete after 26s [id=i-0bf091e9b4b8011ec]
aws_volume_attachment.task1-attach: Creating...
aws_volume_attachment.task1-attach: Still creating... [10s elapsed]
aws_volume_attachment.task1-attach: Still creating... [20s elapsed]
```

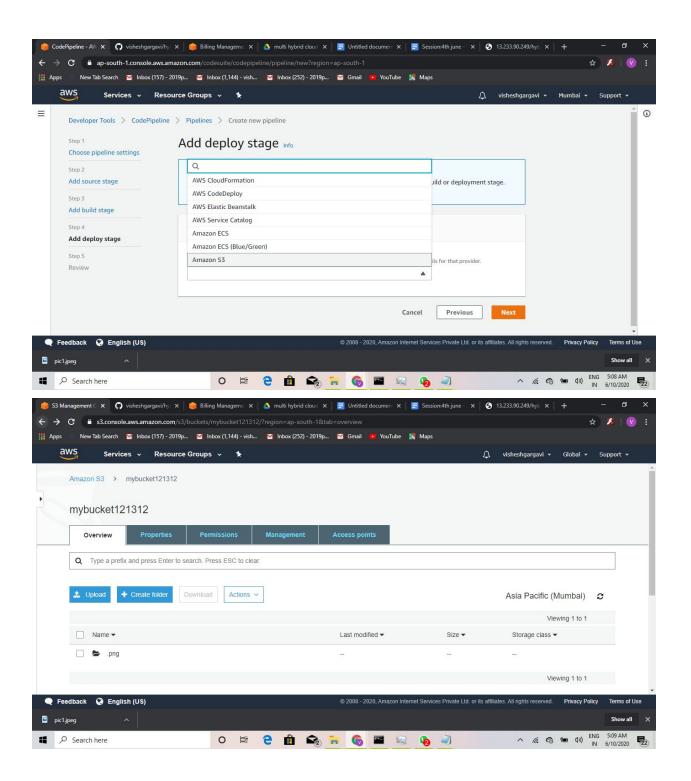
aws_volume_attachment.task1-attach: Creation complete after 22s [id=vai-4173652969]

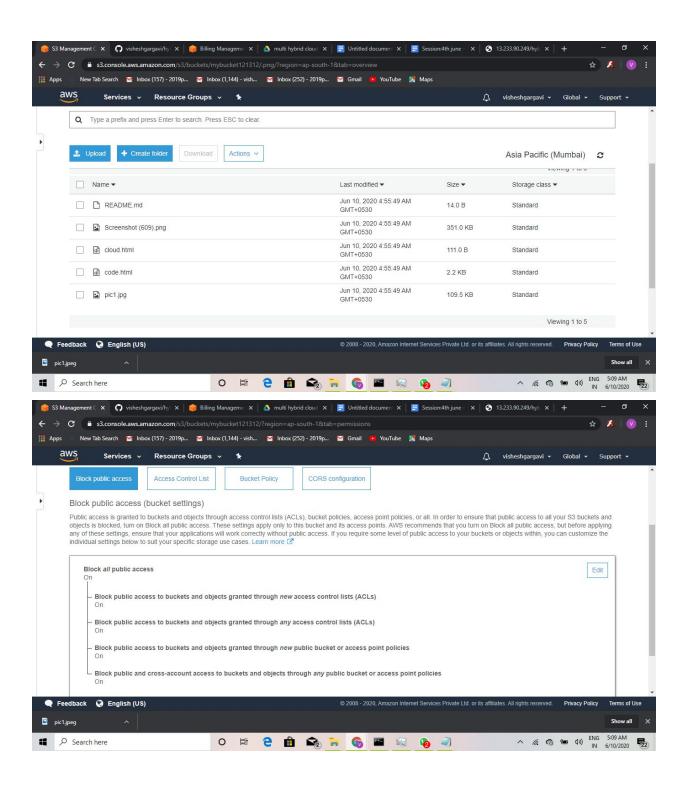
Apply complete! Resources: 5 added, 0 changed, 0 destroyed.

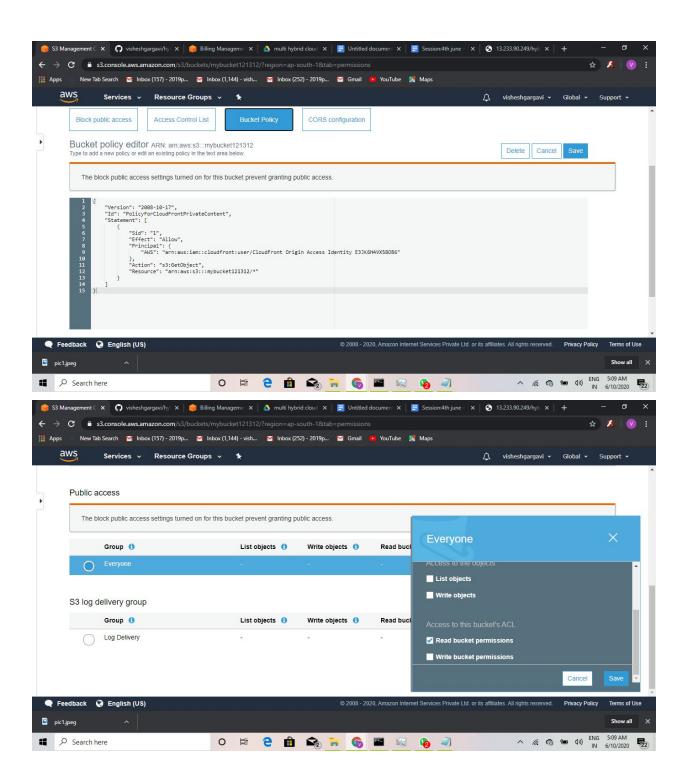


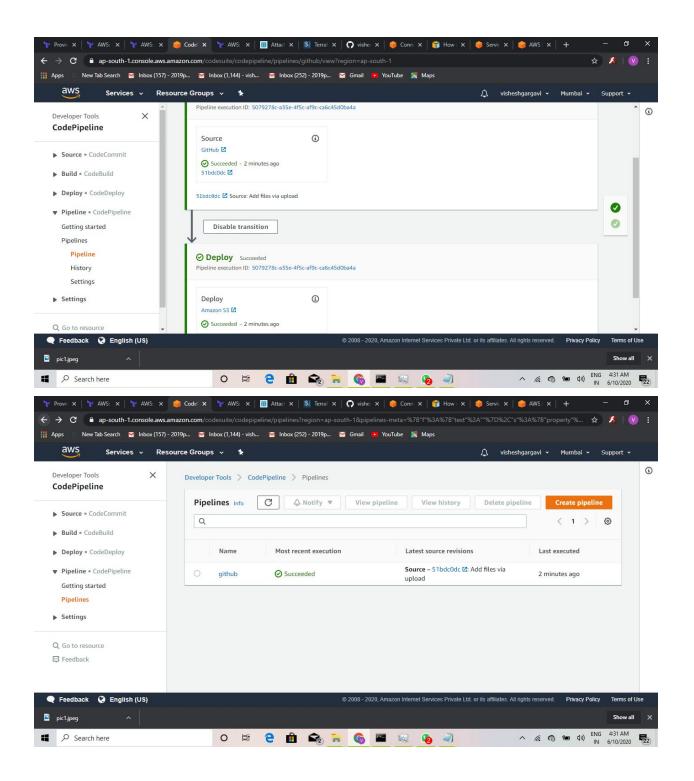


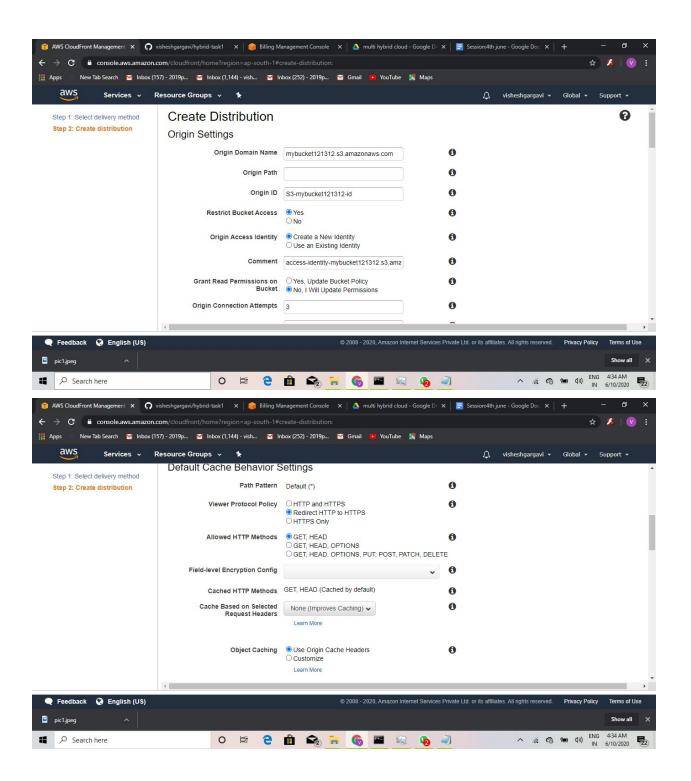


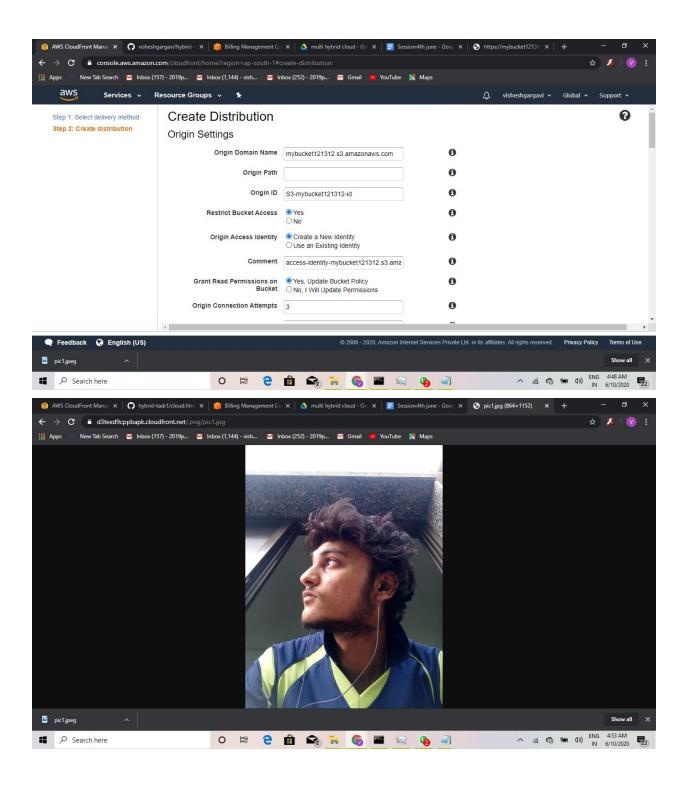


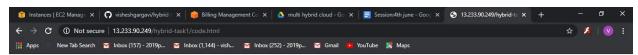












provider "aws" { region = "ap-south-1" profile = "myvishesh" } resource "aws_key_pair" "task1-key" { key_name = "task1-key" public_key = "ssh-rsa

AAAAB3NzaC1yc2EAAAADAQABAAABAQCXXD5ir1G5of3StxzKbf3TvwtL2P/ZotKFARL3Zr7KEfaHU4ZPA3q3dcnkum67HpNV4p/v8EHIUFF8X2ZuxH2sN5UYKDm6WmPdII+vkc+JBE65/CiK2m5RJ'
} resource "aws_security_group" 'task1-sg' { name = "task1-sg' description = "Allow TLS inbound traffic" typ_id = "typ-15f8e57d" ingress { description = "SSH" from_port = 22 protocol = "tcp" cid_blocks = ["0.0.00"] } regress { from_port = 00 port = 00 protocol = "tcp" cid_blocks = ["0.0.00"] } resource in from_port = 00 port = 00 protocol = "tcp" cid_blocks = ["0.0.00"] } resource in from_port = 00 port =

