

Name - **SAUNDARYA**

Registered Email - **1806516@kiit.ac.in**

Topic - **Microsoft Azure Cloud Computing (June-July '20)**

Under guidance of - **Mr. Rajdeep Das Sir (Verzeo)**

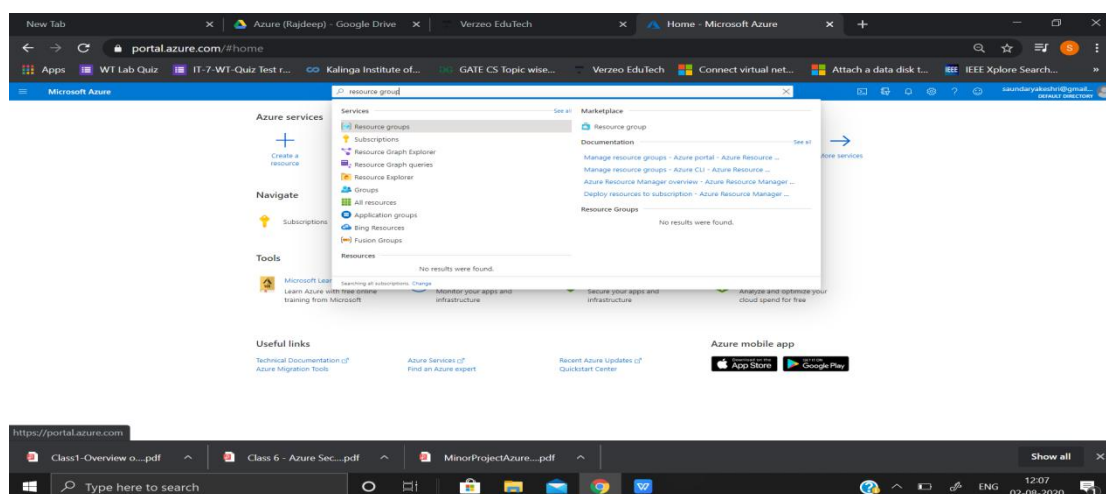
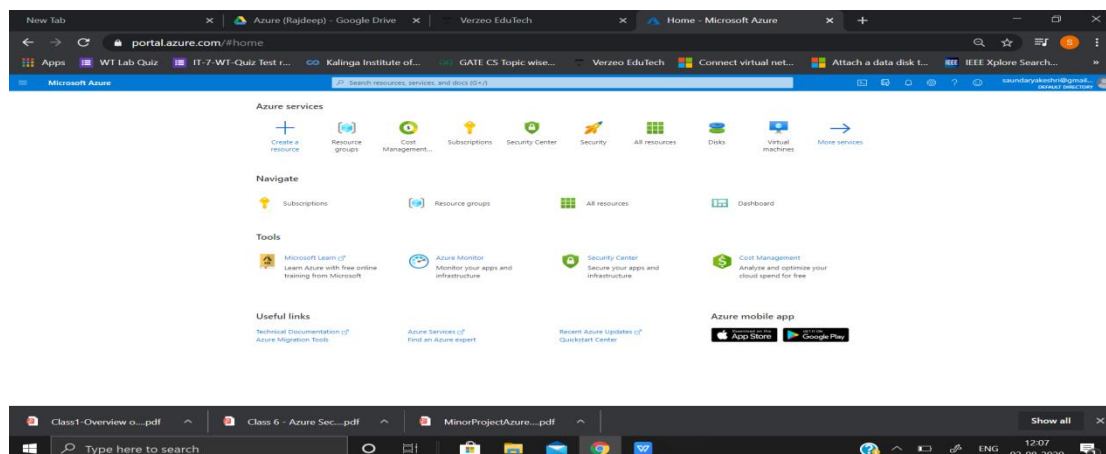
# Minor Project 02

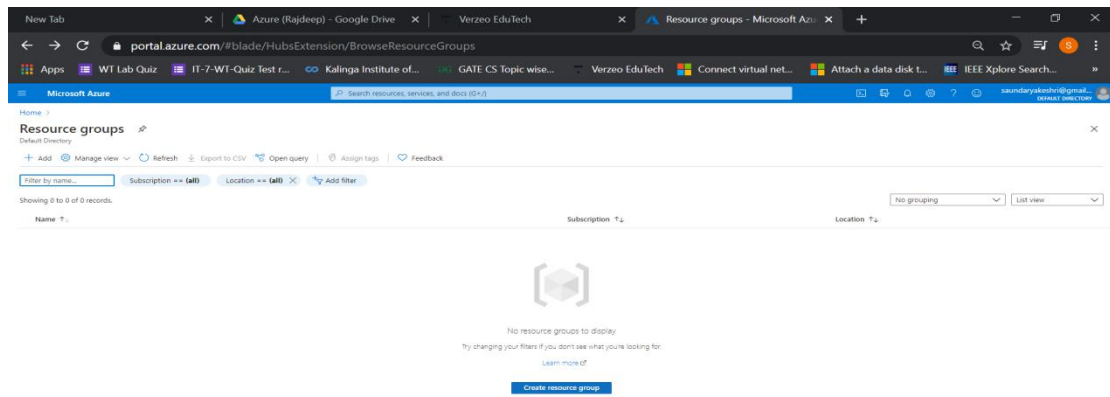
## - Creating a Resource Group

- Resource group are like folders which contain all resources (Virtual Networks , Virtual Machines etc)

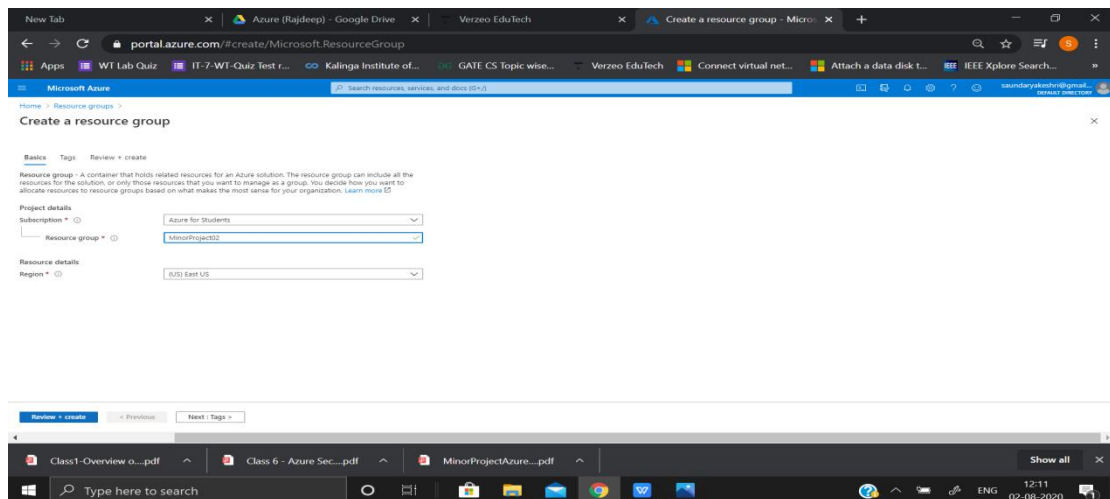
----- It is a container that holds related resources for an Azure solution. The resources group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource group based on what makes the most sense for your organization.

- How to create Resource group:
  1. Sign in to the Azure portal at <https://portal.azure.com>
  2. From the All services blade, search for and select **Resource Group**, and then click **+Add**.

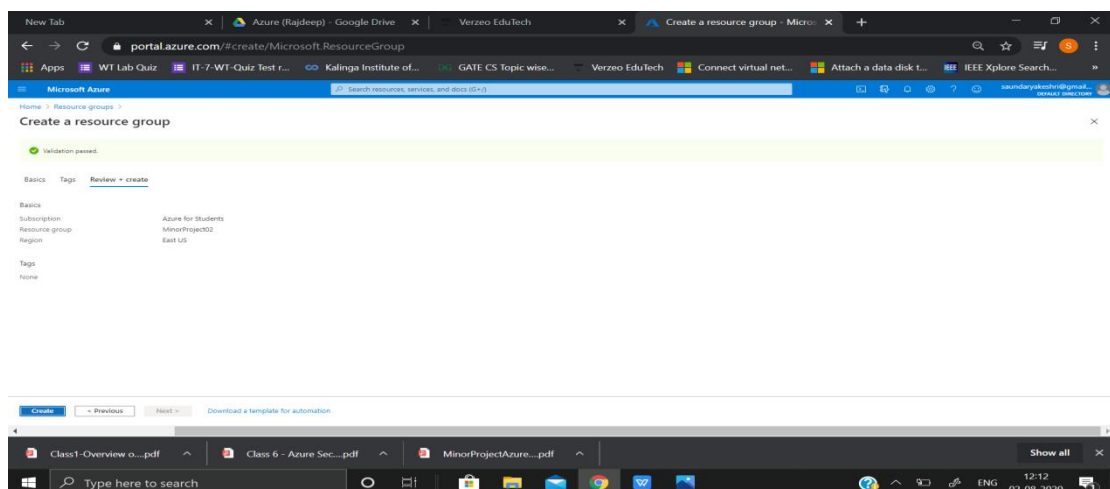


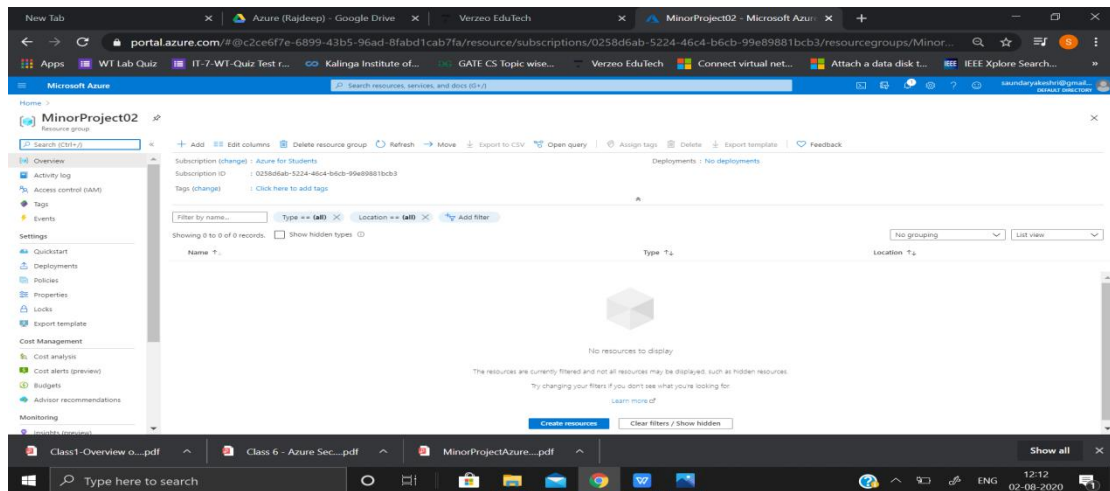


3. Fill the required details such as - Resource Group name , Region.
4. Click the **Review + create** button



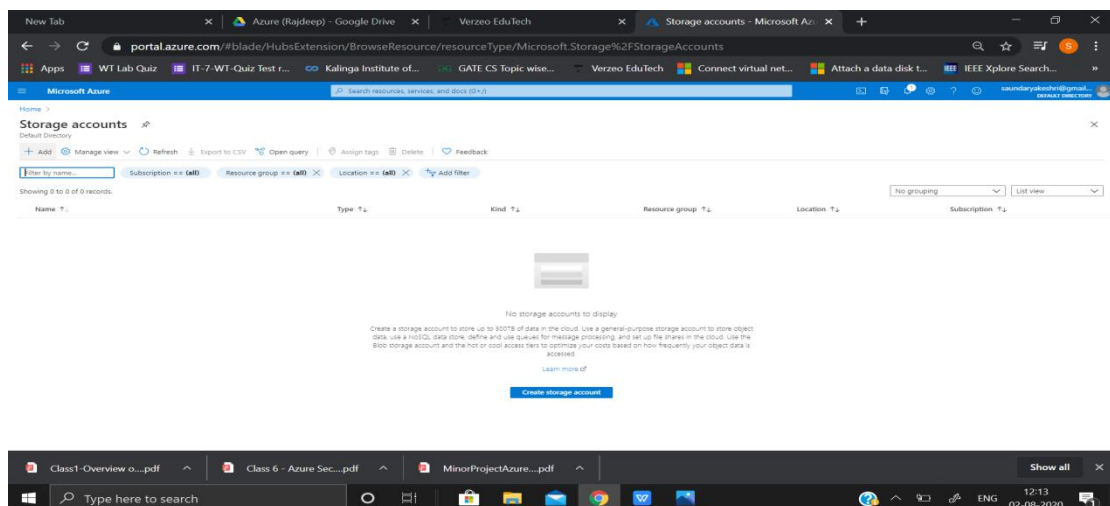
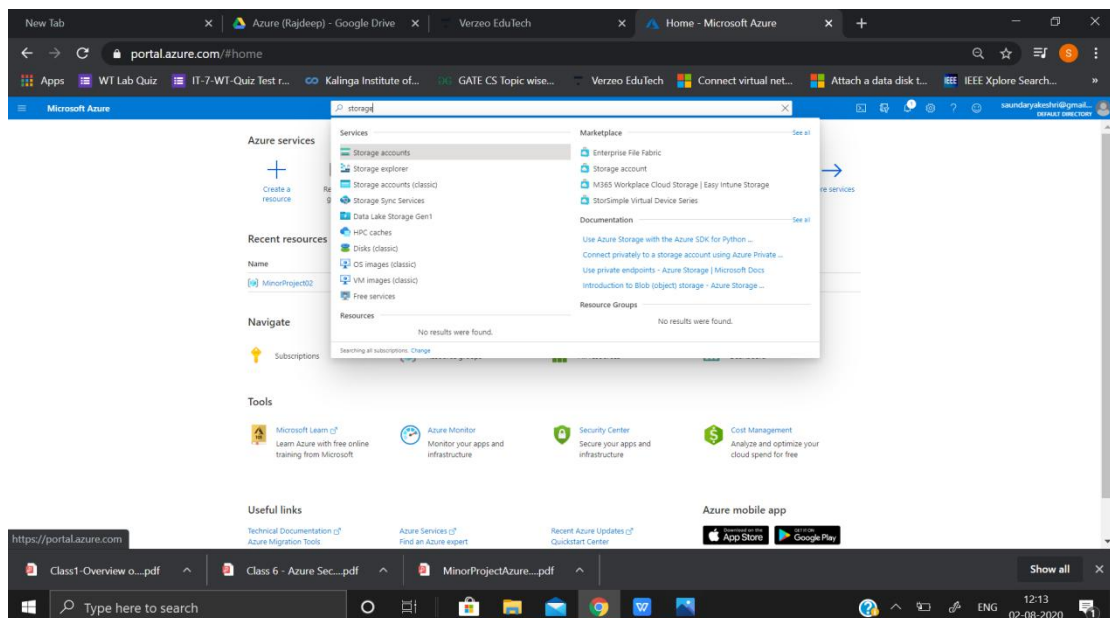
4. After the **Validation is passed** click on **Create**
5. The Resource group named as **MinorProject02** is created.





## - Creating a Storage Account

1. From the **All services** blade, search for and select **Storage accounts**, and then click **+ Add**.



## 2. Enter the following information and click on **Next: Networking**

**Create storage account**

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \*

Resource group \*  [Create new](#)

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name \*

Location \*

Performance ☒ Standard ☐ Premium

Account kind

Replication

Access tier (default) ☐ Cool ☒ Hot

[Review > create](#) [< Previous](#) [Next: Networking >](#)

## 3. Select the appropriate option under **Networking** and click on **Next:Data protection**

**Create storage account**

Basics **Networking** Data protection Advanced Tags Review > create

Network connectivity

You can connect to your storage account either publicly, via public IP addresses or service endpoints, or privately, using a private endpoint.

Connectivity method \*

☒ Public endpoint (all networks)

☐ Public endpoint (selected networks)

☐ Private endpoint

☒ All networks will be able to access this storage account. [Learn more about connectivity methods >](#)

Network routing

Determine how to route your traffic as it travels from the source to its Azure endpoint. Microsoft network routing is recommended for most customers.

Routing preference \*

☒ Microsoft network routing (default)

☐ Internet routing

[Review > create](#) [< Previous](#) [Next: Data protection >](#)

## 4. Select the appropriate option under **Data protection** and click on **Next: Advanced**

**Create storage account**

Basics Networking **Data protection** Advanced Tags Review > create

Blob soft delete ☒ Disabled ☐ Enabled

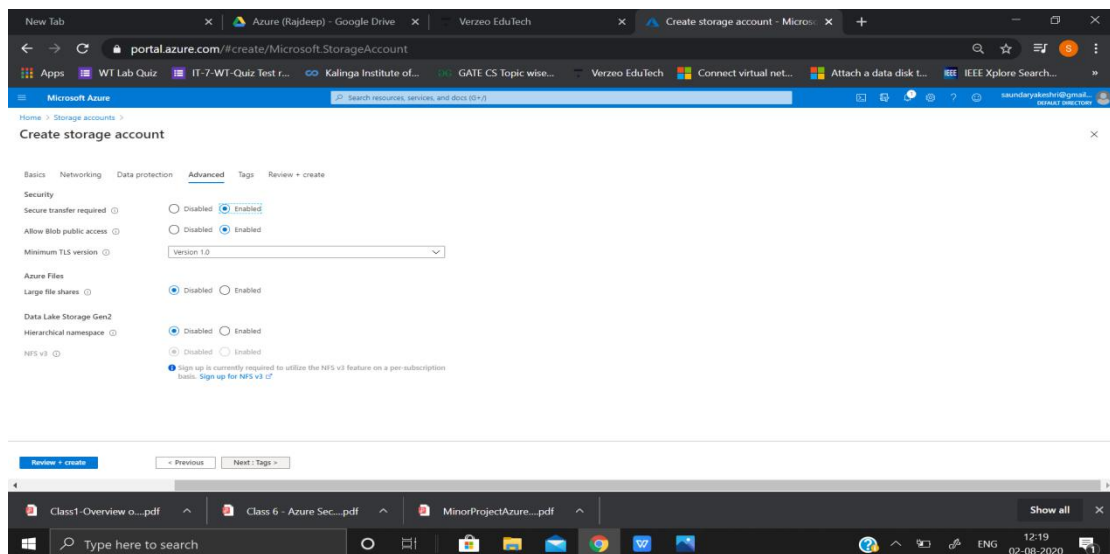
File share soft delete ☒ Disabled ☐ Enabled

Versioning ☒ Disabled ☐ Enabled

☒ The current combination of subscription, storage account kind, performance, replication and location does not support versioning.

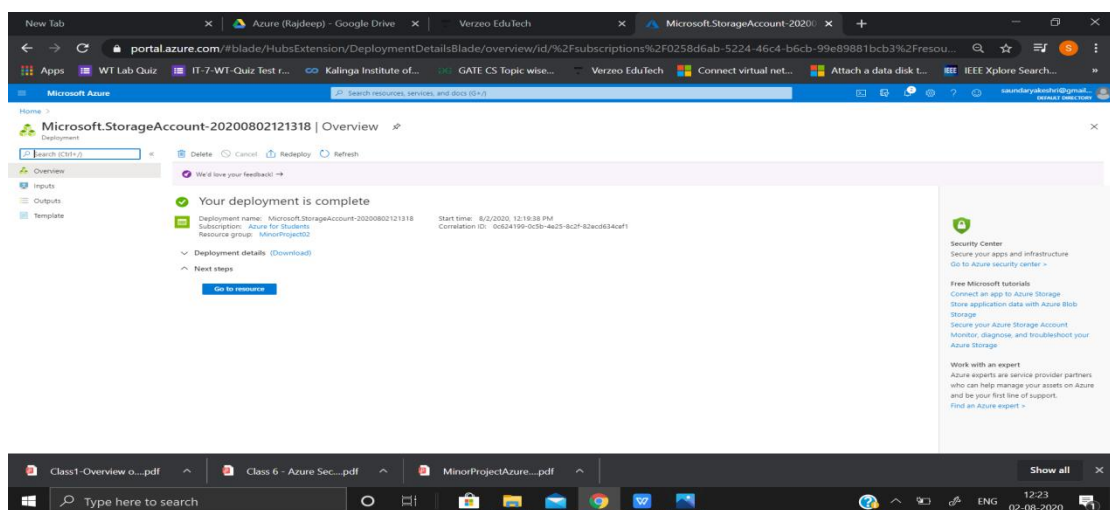
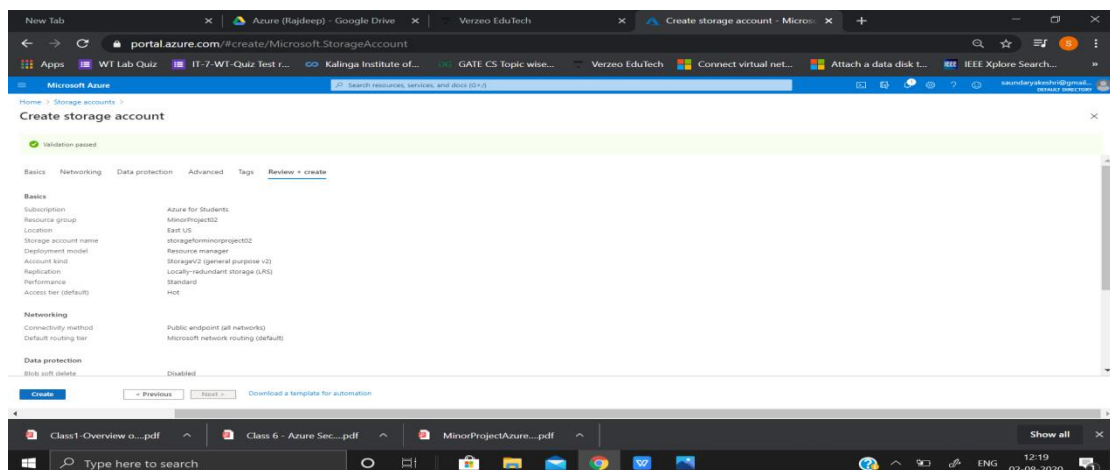
[Review > create](#) [< Previous](#) [Next: Advanced >](#)

5. Select the appropriate option under **Advanced** and click on **Review + create**

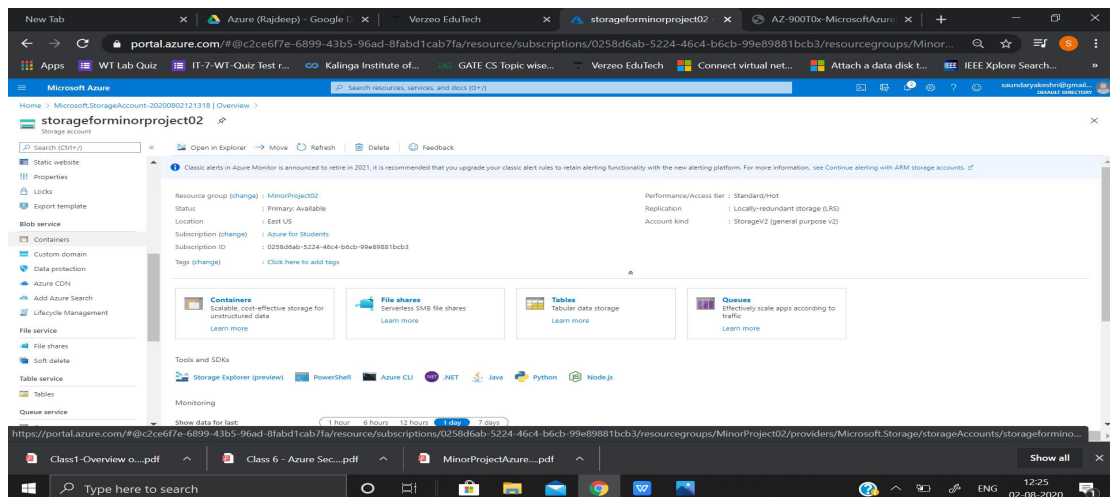


6. After the **Validation is passed** click on **Create**.

7. Wait for deployment to complete.

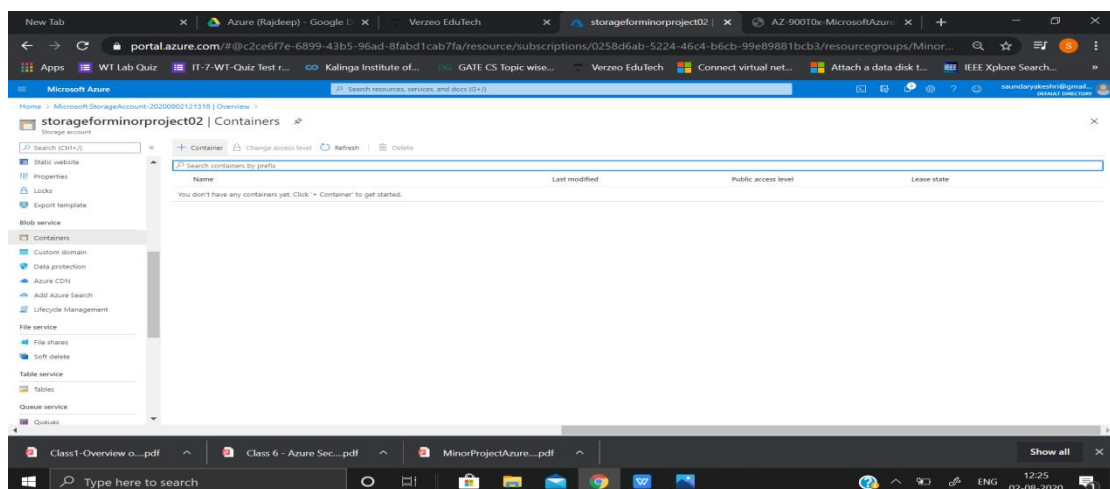
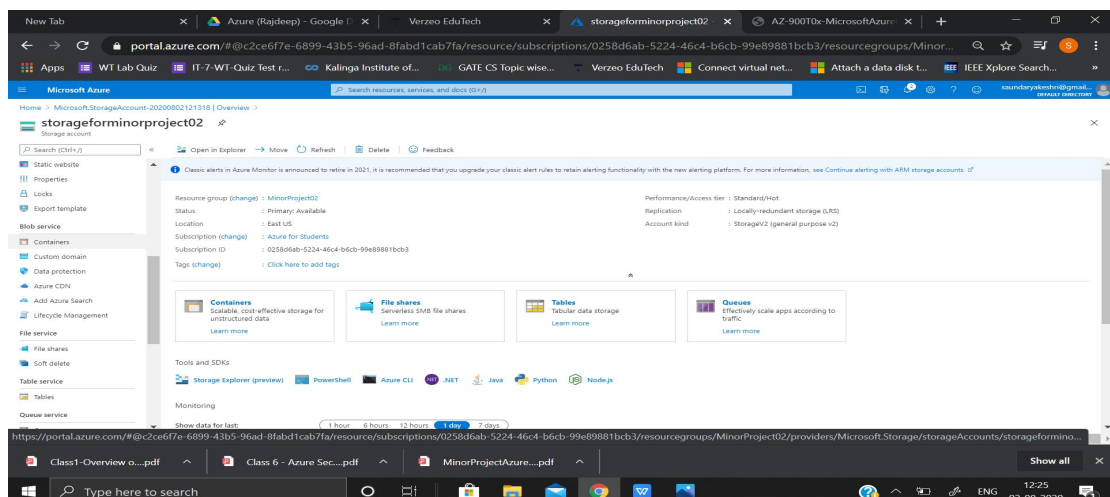


## 8. The Storage group named as **storageforminorproject02** is created.



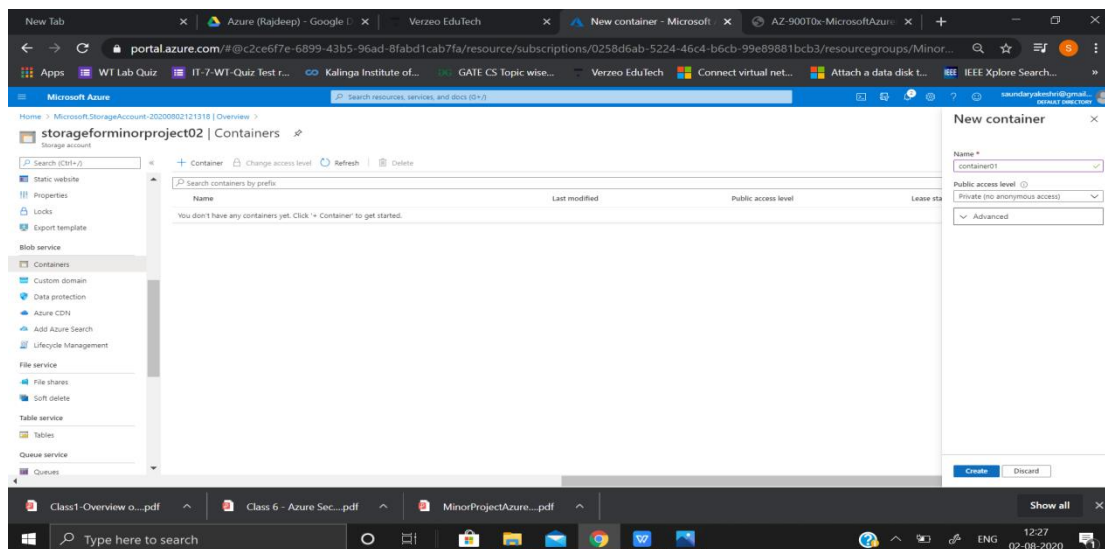
## - Creating a Container and upload a file in the BLOB

1. Go to the created Storage account- **storageforminorproject02** and scroll to the **Blob service** section, and then click **Containers**.

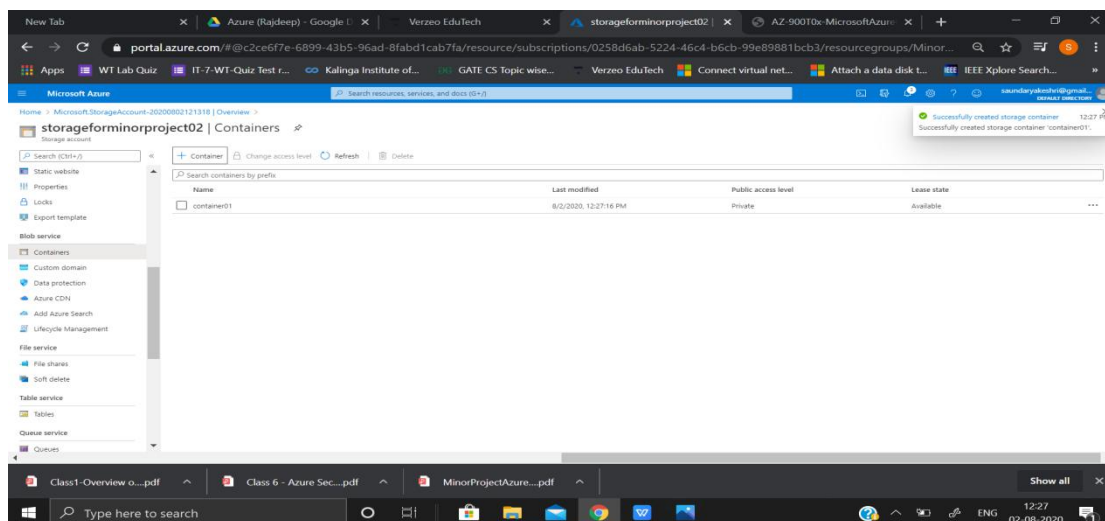




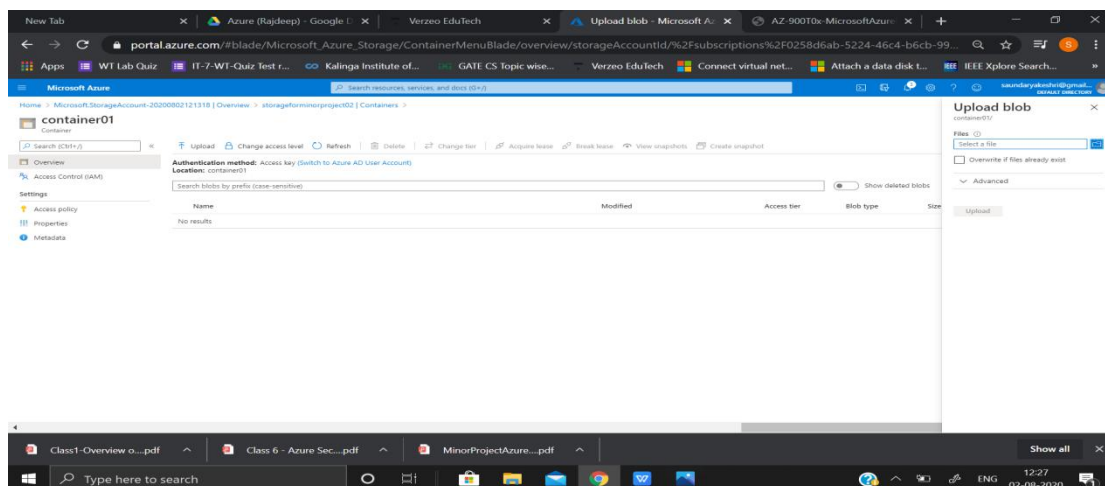
2. Click **+ Container** and fill the information. When done click on **create**



3. The container named **container01** is created.



4. Click on the container created i.e **container01** and click on **Upload**



## 5. Browse to a file in our system and click on **upload**

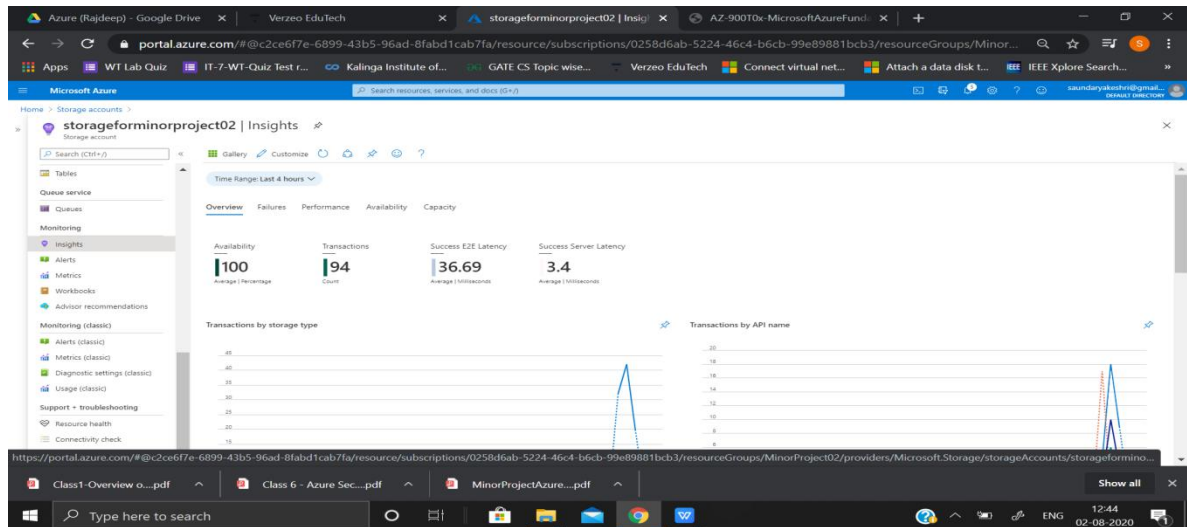
The following steps illustrate the process of uploading a file to Azure Storage:

- File Selection:** A Windows File Explorer window shows the 'Saundarya' file selected on the desktop.
- Upload Dialog:** An 'Upload blob' dialog box is shown, with the file selected and the 'Upload' button clicked.
- Azure Portal Overview:** The Azure portal 'Overview' page for a container is shown, displaying a table of blobs. The 'Saundarya.txt' blob is highlighted.
- Edit Blob:** The 'Edit' page for 'Saundarya.txt' is shown, displaying the file's content.

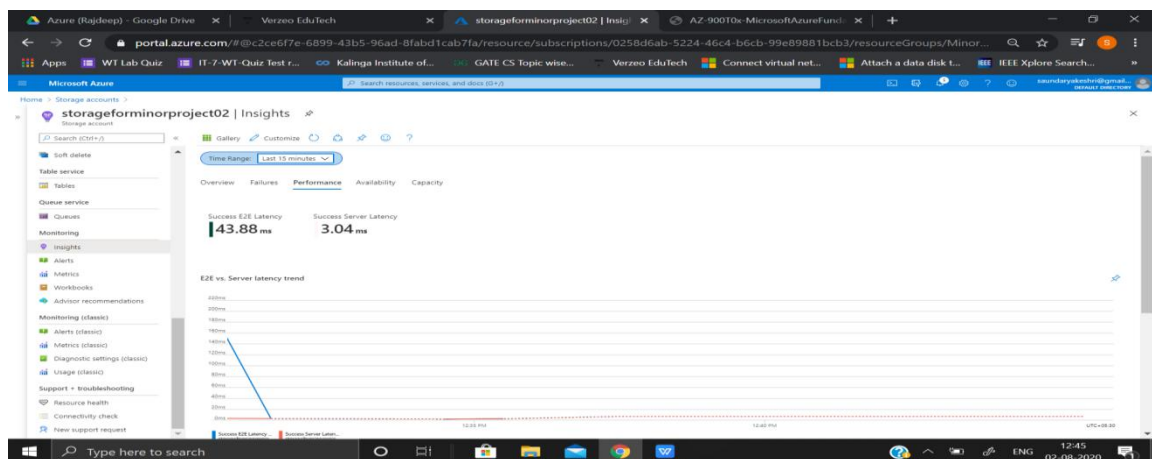


## - Monitor the storage account

1. On the storage account blade, scroll down to the **Monitoring** section and click **Insights**.

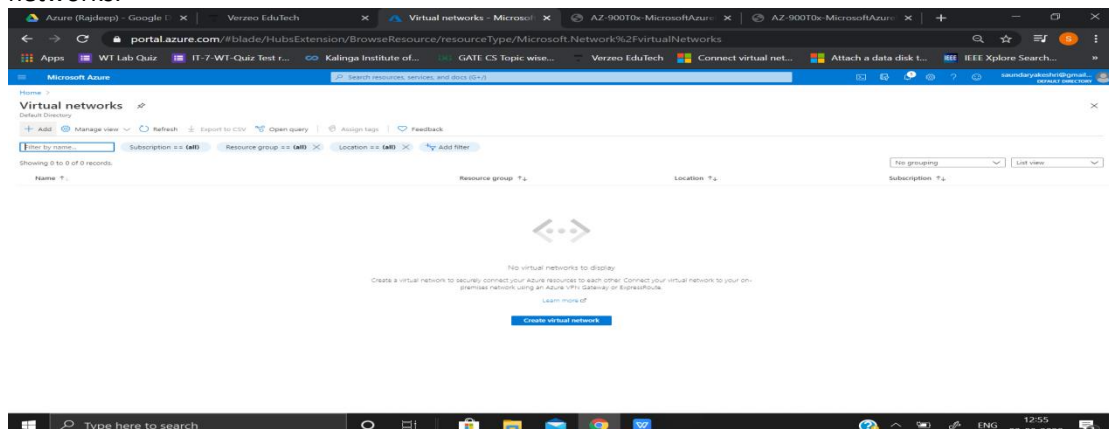


2. We can also set the **Time Range**.



## - Creating VNets containing 1 Subnets

1. From the created Resource group (**MinorProject02**) click on **+Add**, search for and select Virtual networks.



2. We name the VNet as - **VNet\_minorP2** with a reserved CIDR block of 192.168.0.0/16 containing 1 subnets
- a. **Subnet1**, using 192.168.1.0/24 as its CIDR block.

Microsoft Azure

Create virtual network

Basics IP Addresses Security Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VMs), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual networks.](#)

Project details

Subscription \* Azure for Students

Resource group \* MinorProject02

Create new

Instance details

Name \* VNet\_minorP2

Region \* US East US

Review + create Previous Next: IP Addresses Download a template for automation

3. Click on **Next: IP Addresses**

Microsoft Azure

Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

192.168.0.0/16

Add IPv4 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

Add subnet Remove subnet

Subnet name Subnet address range

This virtual network doesn't have any subnets.

Review + create Previous Next: Security Download a template for automation

4. After creating the subnet - **Subnet1** click on **Next:Security**

Microsoft Azure

Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

192.168.0.0/16

Add IPv4 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

Add subnet Remove subnet

Subnet name Subnet address range

This virtual network doesn't have any subnets.

Review + create Previous Next: Security Download a template for automation

Add subnet

Subnet name \* Subnet1

Subnet address range \* 192.168.1.0/24

192.168.1.0 - 192.168.1.255 (251 + 5 Azure reserved addresses)

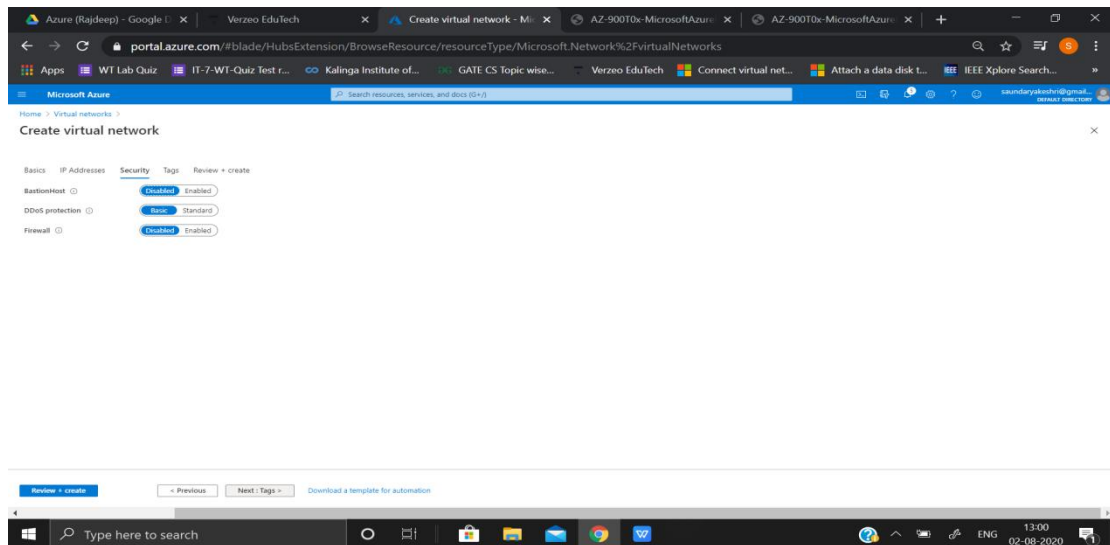
SERVICE ENDPOINTS

Create service endpoint policies to allow traffic to specific Azure resources from your virtual network over service endpoints. [Learn more](#)

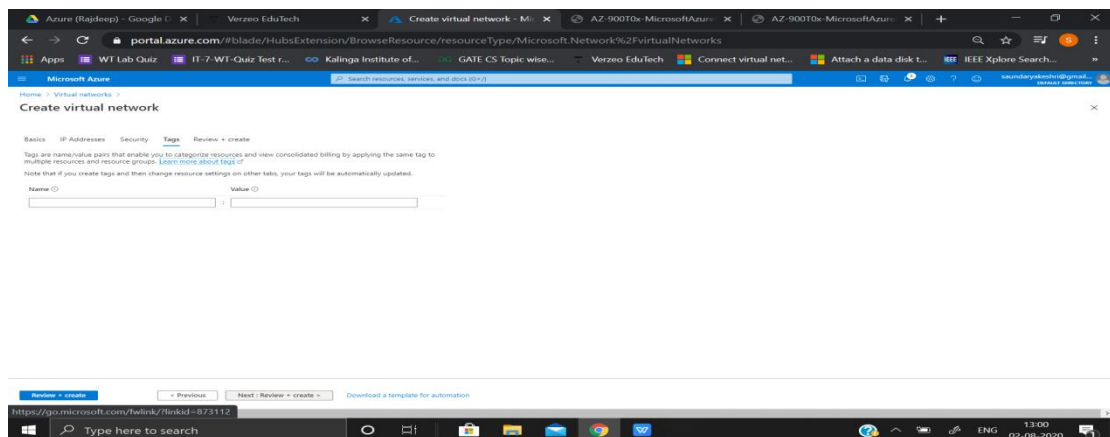
Services 0 selected

Add Cancel

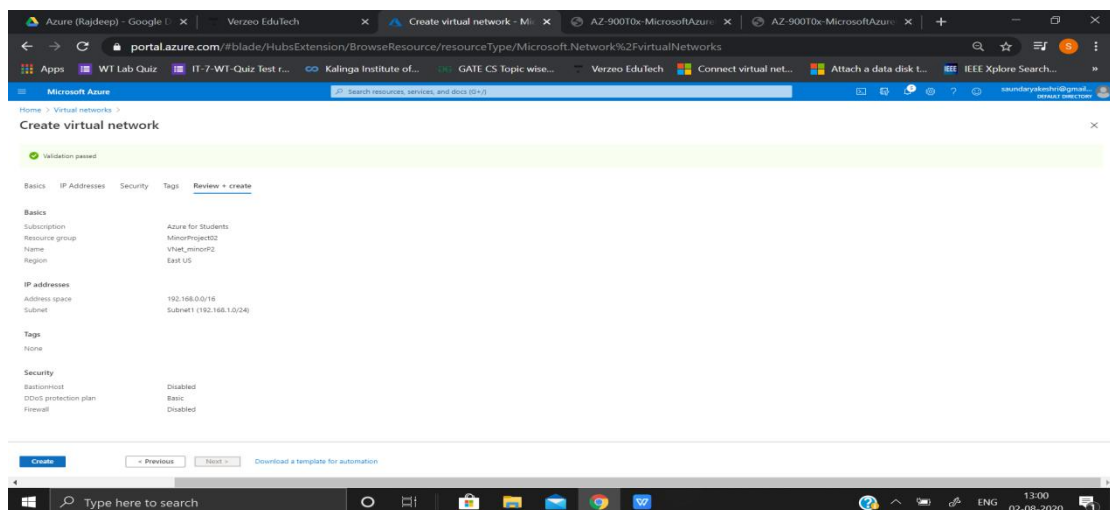
## 5. Under **Security** - no changes, click on **Next: Tags**



## 6. Under **Tags** - no change, click on **Next: Review + Create**

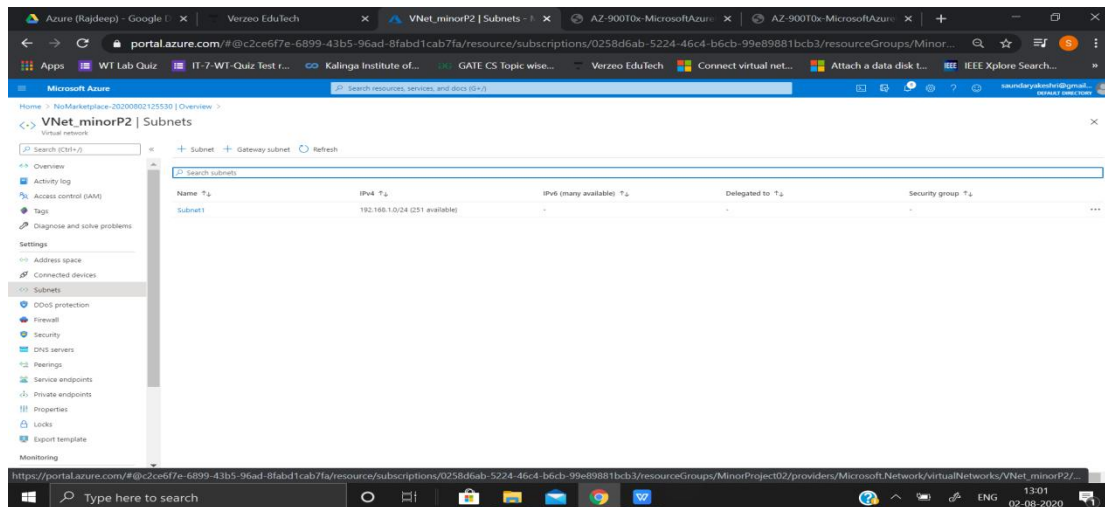


## 7. After the **Validation is passed** click on **Create**



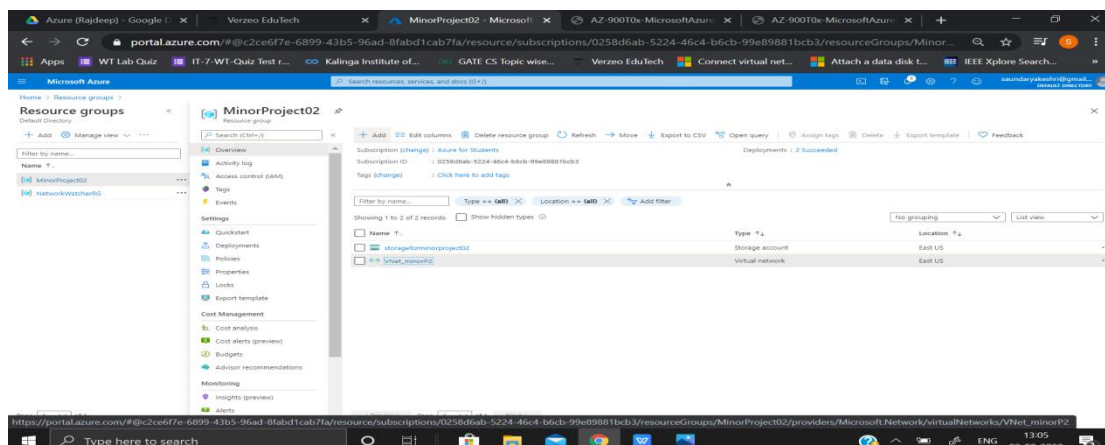
## 8. Wait for deployment to complete.

### 9. Thus, **VNet\_minorP2** is created having 1 subnet - **Subnets1**

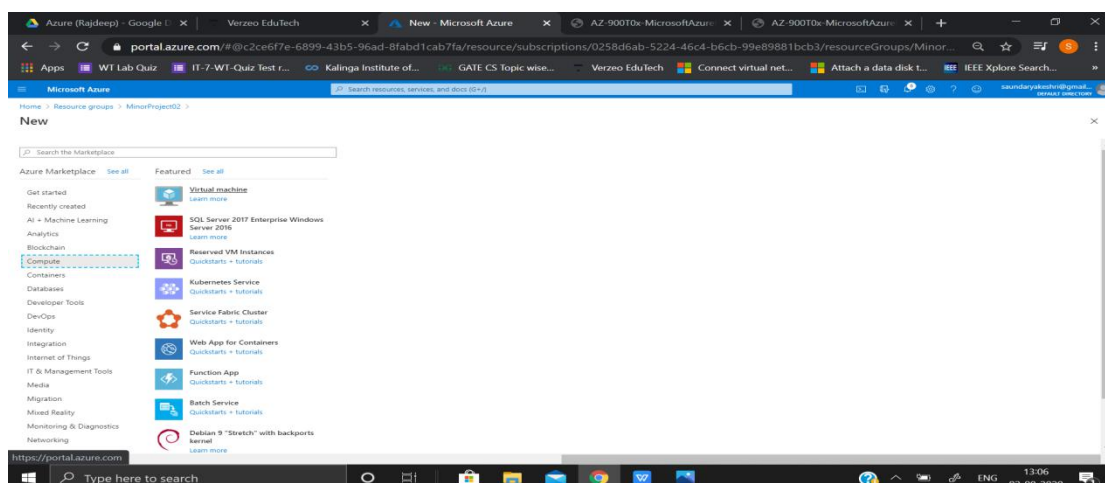


## -Creating Virtual Machine

1. From the All services blade, search for and select **Resource Group**, and select the resource group that we have created (ex. **MinorProject02**)
2. To create Virtual Machine **VM02** for **VNet\_minorP2**. Select **VNet\_minorP2**



### 3. Select **Compute**, and select **Virtual Machine**.



#### 4. Enter the following information under **Basics**, and click on **Next: Disks**

The screenshot shows the 'Create a virtual machine' page in the Azure portal. The 'Basics' tab is selected. The form contains the following fields and values:

- Subscription:** Azure for Students
- Resource group:** MinorProject02
- Virtual machine name:** VM02
- Region:** East US
- Availability options:** No infrastructure redundancy required
- Image:** Windows Server 2016 Datacenter
- Azure Spot instance:** No
- Size:** Standard\_DS1\_v2 - 1 vcpu, 3.5 GB memory (\$6.079.53/month)
- Administrator account:**
  - Username:** (empty, error: The value must not be empty. The value must be between 1 and 20 characters long.)
  - Password:** (empty, error: The value must not be empty. The value must be between 12 and 123 characters long.)

Buttons at the bottom: 'Review + create', '< Previous', 'Next: Disks >'.

The screenshot shows the 'Create a virtual machine' page in the Azure portal. The 'Basics' tab is selected. The form contains the following fields and values:

- Image:** Windows Server 2016 Datacenter
- Azure Spot instance:** No
- Size:** Standard\_DS1\_v2 - 1 vcpu, 3.5 GB memory (\$6.079.53/month)
- Administrator account:**
  - Username:** SaundaryaVM1
  - Password:** (masked with asterisks)
  - Confirm password:** (masked with asterisks)
- Inbound port rules:**
  - Public inbound ports:** Allow selected ports
  - Select inbound ports:** RDP (3389)

Buttons at the bottom: 'Review + create', '< Previous', 'Next: Disks >'.

#### 5. Under Disk select OS disk type as **Standard HDD**, keep the remaining as default and then click on **Next: Networking**.

The screenshot shows the 'Create a virtual machine' page in the Azure portal. The 'Disks' tab is selected. The form contains the following fields and values:

- OS disk type:** Standard HDD
- Encryption type:** Default Encryption at rest with a platform-managed key
- Enable Ultra Disk compatibility:** No
- Data disks:** (empty table)

Buttons at the bottom: 'Review + create', '< Previous', 'Next: Networking >'.



## 6. Enter the following information under **Networking**, and click on **Next: Management**

The screenshot shows the 'Create a virtual machine' page in the Azure portal, specifically the 'Networking' tab. The page is titled 'Create a virtual machine' and has tabs for Basics, Disks, Networking, Management, Advanced, Tags, and Review + create. The Networking tab is active, showing options for Virtual network, Subnet, Public IP, NIC network security group, Public inbound ports, and Accelerated networking. The 'Virtual network' is set to 'VNet\_minor02', 'Subnet' to 'Subnet1 (192.168.1.0/24)', and 'Public IP' to '(new) VM02-ip'. The 'NIC network security group' is set to 'Home', and 'Public inbound ports' is set to 'RDP (3389)'. A warning message states: 'This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.' The 'Accelerated networking' is set to 'Off'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Management >'.

## 7. In the management section turn everything **Off**, and click on **Review + create**.

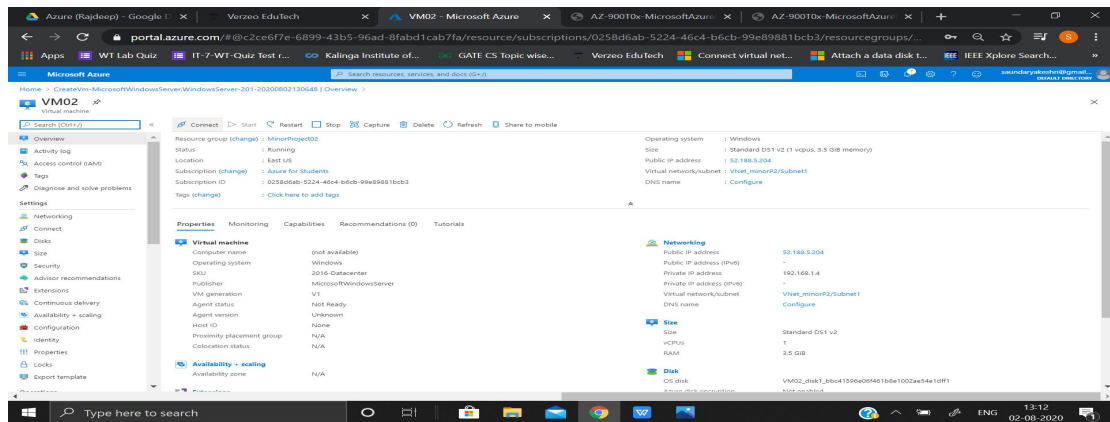
The screenshot shows the 'Create a virtual machine' page in the Azure portal, specifically the 'Management' tab. The page is titled 'Create a virtual machine' and has tabs for Basics, Disks, Networking, Management, Advanced, Tags, and Review + create. The Management tab is active, showing options for Monitoring, Identity, Auto-shutdown, and Backup. The 'Monitoring' section has 'Boot diagnostics' and 'OS guest diagnostics' both set to 'Off'. The 'Identity' section has 'System assigned managed identity' set to 'Off'. The 'Auto-shutdown' section has 'Enable auto-shutdown' set to 'Off'. The 'Backup' section has 'Enable backup' set to 'Off'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Advanced >'.

8. After the **verification is passed**.
9. Click on **Create**. Wait for the **VM02** to deploy

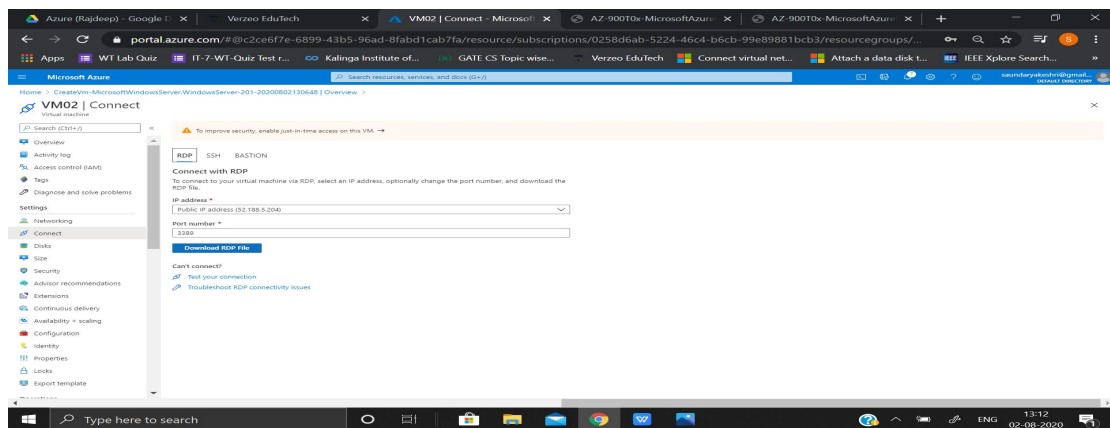
The screenshot shows the 'Create a virtual machine' page in the Azure portal, specifically the 'Review + create' tab. The page is titled 'Create a virtual machine' and has tabs for Basics, Disks, Networking, Management, Advanced, Tags, and Review + create. The Review + create tab is active, showing a 'Validation passed' message at the top. Below this, there are sections for 'PRODUCT DETAILS' (Standard D51 v2), 'TERMS' (with a warning about RDP ports), and 'Basics' (Subscription: Azure for Students, Resource group: MinorProject02, Virtual machine name: VM02). At the bottom, there are buttons for 'Create', '< Previous', and 'Download a template for automation'.

## -Connect to the virtual machine

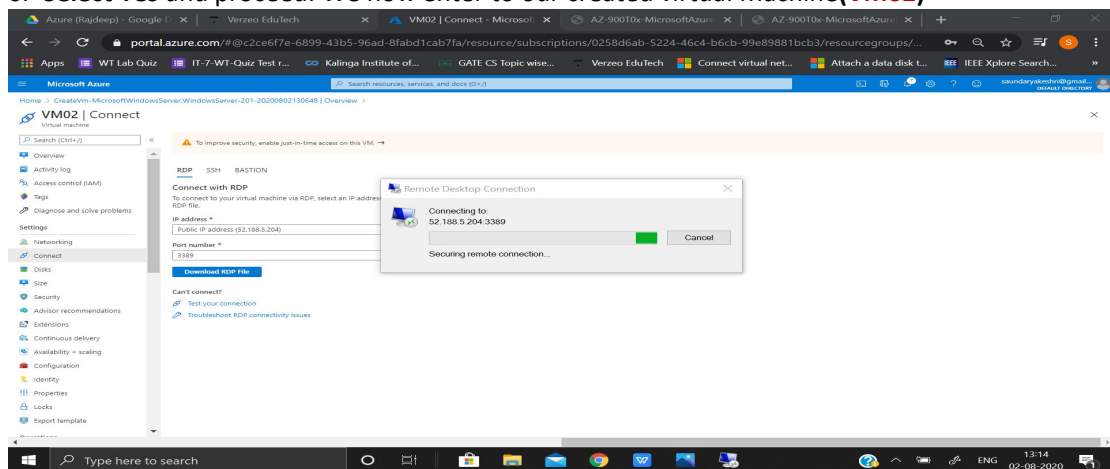
1. After the deployment is done for the VM click on **connect** ( Ensure that the VMs are in Running status if not click on **start**)

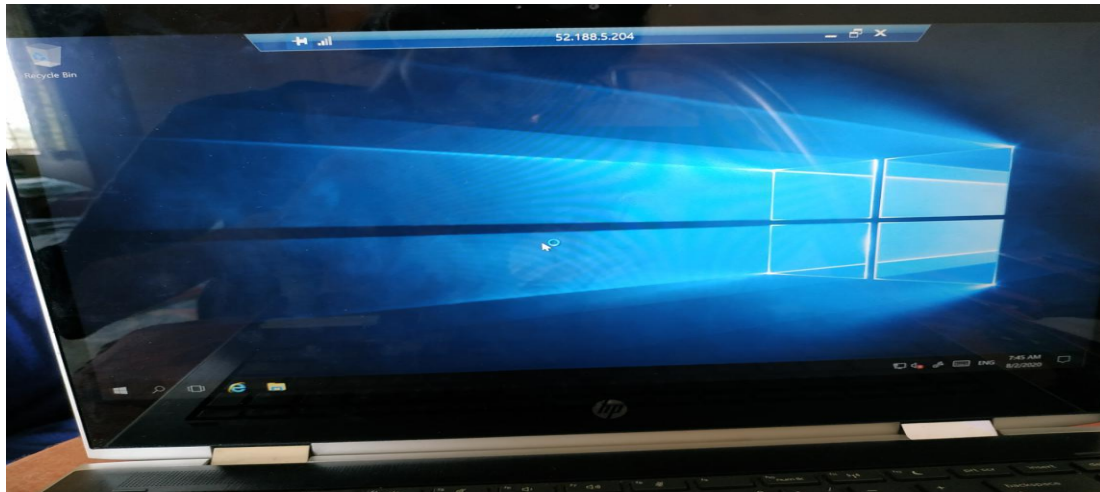


2. Connect as RDP (for VM of Windows)
3. Download the RDP file.



4. Click on the downloaded RDP file and click on **Connect**.
5. Enter the Username and Password specified earlier while creating **VM02**.
6. **Select Yes** and proceed. We now enter to our created virtual Machine(**VM02**)

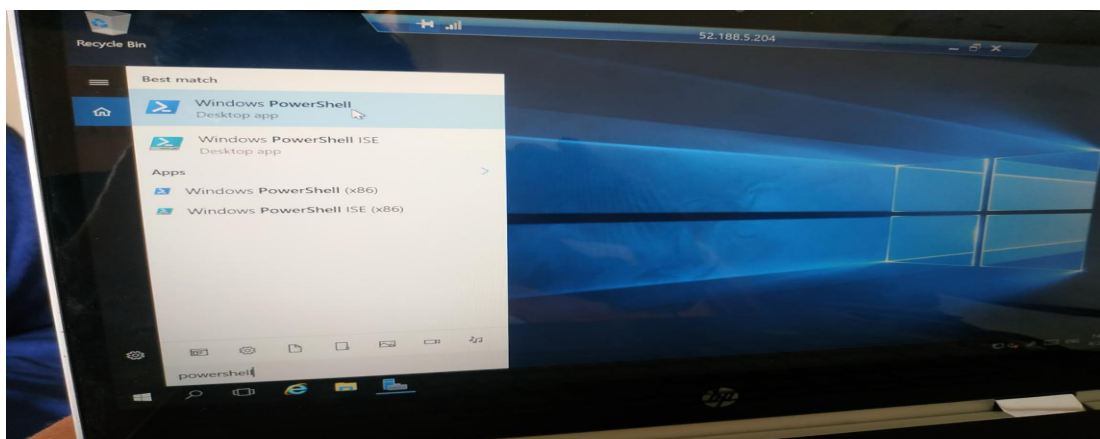




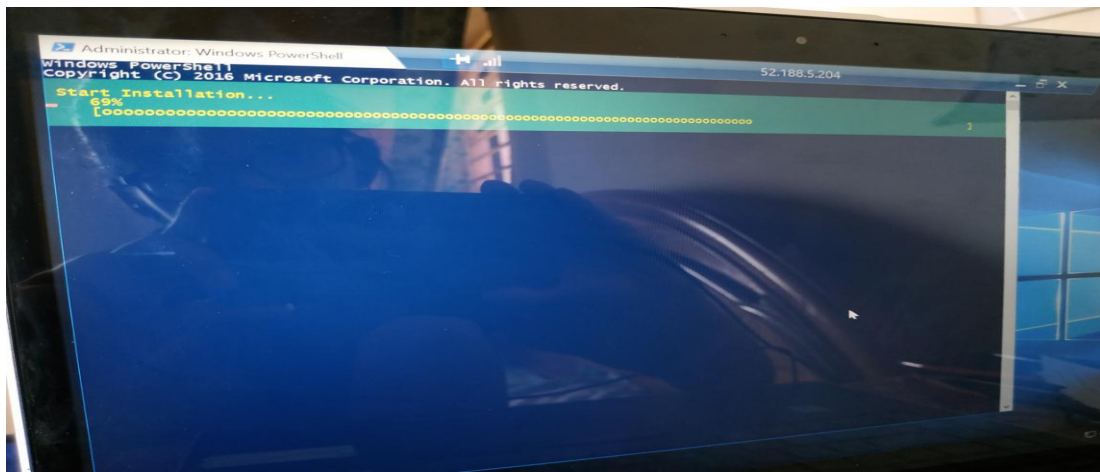
Virtual Machine VM02

### -Install the web server role and test

1. Open up a PowerShell command prompt on the virtual machine, by clicking the **Start** button, typing **PowerShell**, right clicking **Windows PowerShell**



2. Install the **Web-Server** feature in the virtual machine by running the following command in the PowerShell command prompt - `Install-WindowsFeature -name Web-Server -IncludeManagementTools`



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\SaundaryaVM1> Install-WindowsFeature -name Web-Server -IncludeManagementTools

Success Restart Needed Exit Code      Feature Result
-----
True      No          Success      {Common HTTP Features, Default Document, D...

PS C:\Users\SaundaryaVM1> _
```

3. In the **browser** of your Virtual Machine (**VM02**) type **localhost**

