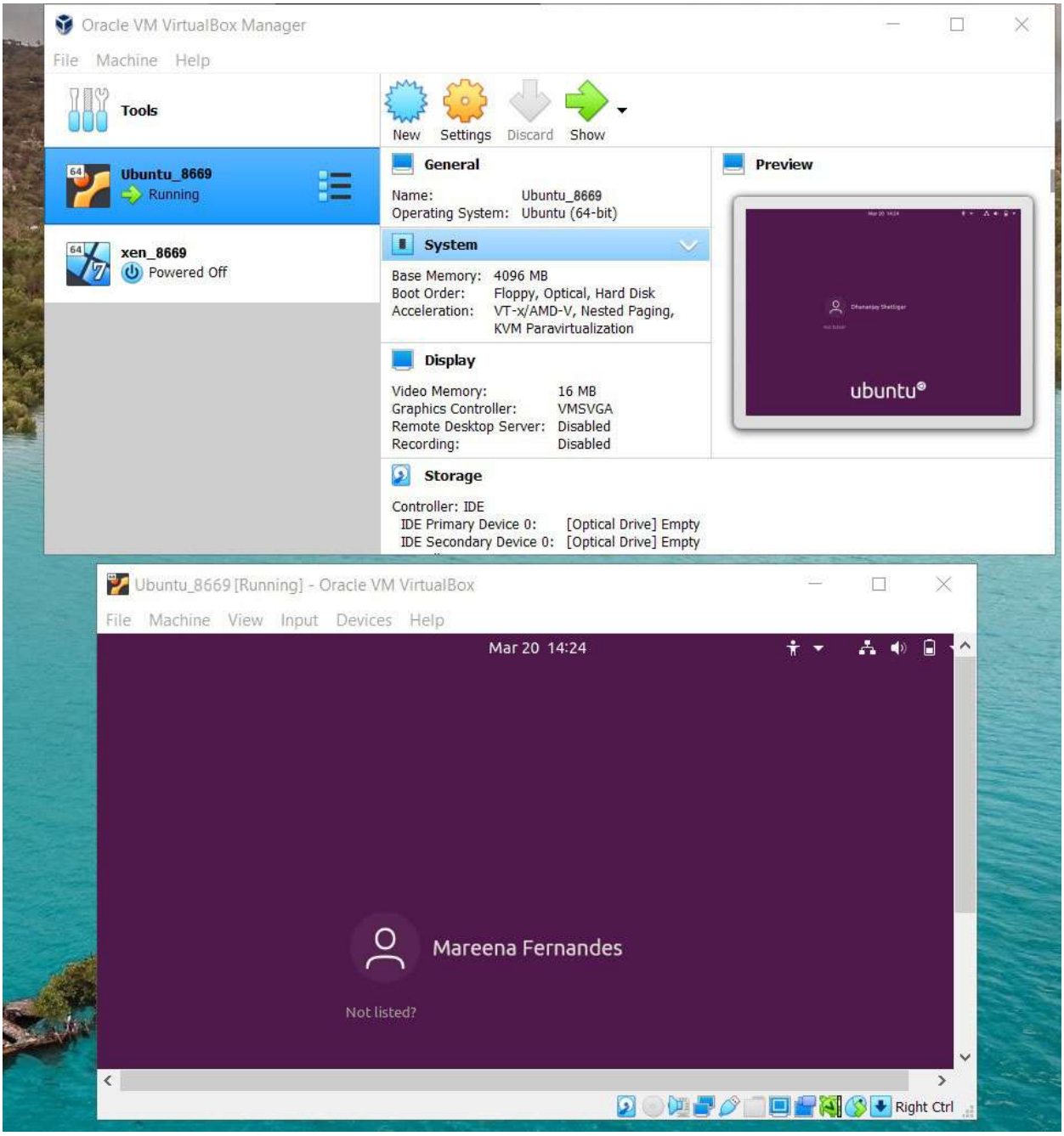
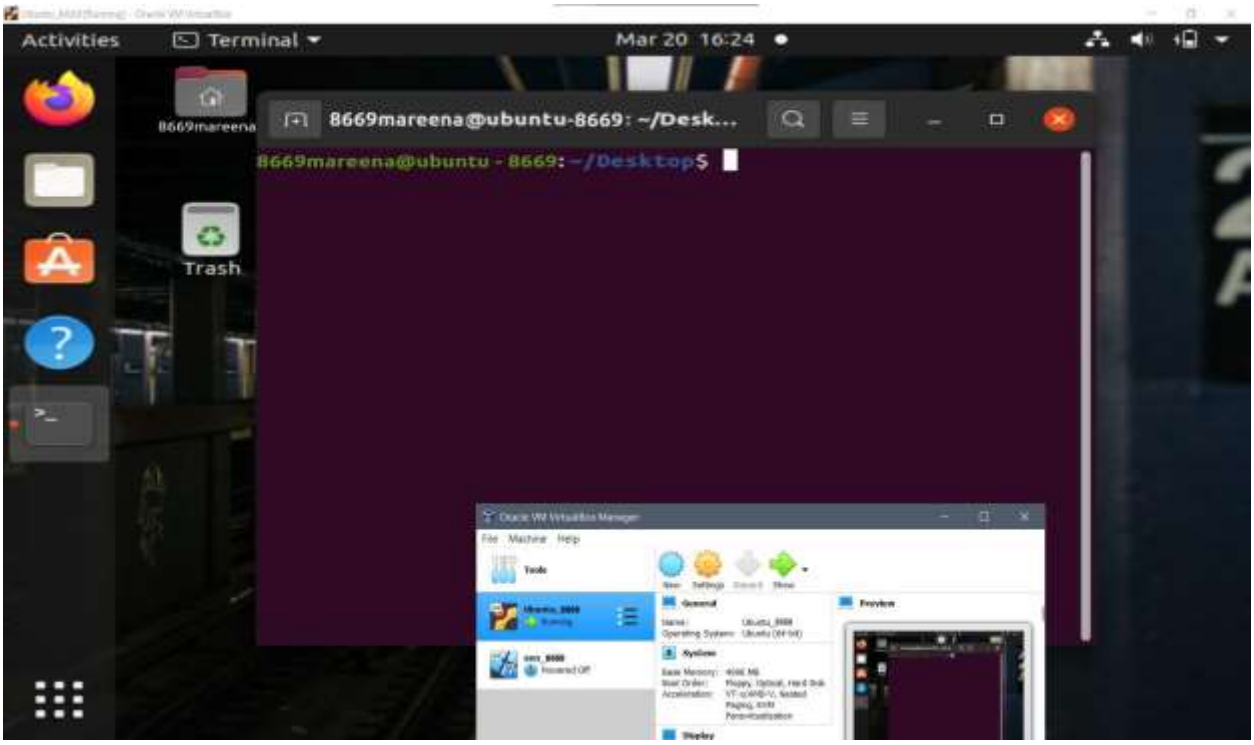
Name of candidate:	Mareena Mark Fernandes	
Roll no.: 8669	**Year: TE**	**Semester:-VI**
Branch: IT	**Subject: Cloud Service Design Lab**	
Experiment No.: 1	**Date of performance:**	**Date of submission:**
CO's Covered: LO1		

Rubrics for Practical

Indicator	**Poor**	**Average**	**Good**	**Excellent**
Timeline (3)	More than two weeks late (0)	Two weeks late (1)	One week late (2)	Early or on time (3)
Knowledge (3)	Not Able to answer any Question (0)	Able to answer a Question (1)	Able to answer few Questions (2)	Able to answer all questions (3)
Performance (4)	Able to partially perform the experiment (1)	Able to perform the experiment for certain extent (2)	Able to perform the experiment with support (3)	Able to perform the experiment considering all aspects (4)
Rubrics	**Timeline(3)**	**Knowledge(3)**	**Performance(4)**	**Total (10)**
Score				

Signature of faculty:


Oracle VM VirtualBox Manager
File Machine Help
Tools
New Settings Discard Show
Ubuntu_8669
Running
xen_8669
Powered Off
General
Name: Ubuntu_8669
Operating System: Ubuntu (64-bit)
System
Base Memory: 4096 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization
Display
Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled
Storage
Controller: IDE
IDE Primary Device 0: [Optical Drive] Empty
IDE Secondary Device 0: [Optical Drive] Empty
Preview
ubuntu
Ubuntu_8669 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Mar 20 14:24
Mareena Fernandes
Not listed?
Right Ctrl


Activities
Terminal
Mar 20 16:24
8669mareena
Trash
8669mareena@ubuntu-8669: ~/Desk...
8669mareena@ubuntu - 8669: ~/Desktop$

Post Labs:

1. **Discuss the characteristics of virtualization and explain why virtualization is important for cloud computing.**

Ans:

Virtualization allows providing guests, whether they are operating systems, applications, or other entities with a completely separate environment, in which they are executed. The guest program performs its activity by interacting with an abstraction layer, which provides access to the underlying resources. Virtualization software allows multiple operating systems and applications to run on the same server at the same time, and, as a result, lowers costs and increases efficiency of a company's existing hardware and hence it is a fundamental technology that powers cloud computing.

Characteristics of Virtualization are:

1. Increased security: The ability to control the execution of a guest programs in a completely transparent manner opens new possibilities for delivering a secure, controlled execution environment. A virtual machine manager can control and filter the activity of the guest programs, thus preventing some harmful operations from being performed. Resources exposed by the host can then be hidden or simply protected from the guest.
2. Managed Execution: Virtualization allows for sharing of hardware by creating virtual limited capability instances, aggregation of multiple pieces of hardware into one powerful instance, emulation of one form of application using different underlying hardware and isolation of instances for guests from one another.
3. Portability: The guest is packaged into a virtual image that, in most cases, can be safely moved and executed on top of different virtual machines.

2. Discuss different types of hypervisors

Ans:

Hypervisors make cloud-based applications available to users across a virtual environment while still enabling IT to maintain control over a cloud environment's infrastructure, applications and sensitive data. Hypervisors support the creation and management of virtual machines (VMs) by abstracting a computer's software from its hardware. Hypervisors make virtualization possible by translating requests between the physical and virtual resources. There are two mainly distinct form of hypervisors: Type 1 and Type 2.

The Type 1 hypervisor runs directly on the underlying host system. It is also known as Native Hypervisor or Bare metal hypervisor. It does not require any base server operating system. It has direct access to hardware resources. Examples of Type 1 hypervisors include VMware ESXi, Citrix XenServer and Microsoft Hyper-V hypervisor.

In Type 2, a Host operating system runs on the underlying host system. It is also known as 'Hosted Hypervisor". Such kind of hypervisors doesn't run directly over the underlying hardware rather they run as an application in a Host system (physical machine). Basically, software installed on an operating system. Hypervisor asks the operating system to make hardware calls. Example of Type 2 hypervisor includes VMware Player or Parallels Desktop. Hosted hypervisors are often found on endpoints like PCs. The type-2 hypervisor is are very useful for engineers, security analyst (for checking malware, or malicious source code and newly developed applications).