

**Objective :** In this lab, you will learn how to access a remote workstation in Linux/Mac or Windows.

You are being provided with a workstation in the cloud. You will use this workstation for the lab work in this class. The following are the steps needed to access a remote workstation using both Secure Shell (SSH) and Remote Desktop Remote Desktop Protocol (RDP) from your local Mac, Linux or Windows workstation.

SSH is used to access a remote Linux machine, while RDP is used to access a remote Windows machine. Depending on the structure of your class, either or both types of remote machines may be used.

## ACCESSING A REMOTE LINUX SERVER

### Mac or Linux workstation steps:

1. From the **Applications** menu, select the **Utilities** folder and open **Terminal**



**Note:** The Terminal window opens with the **command line** prompt displaying the name of your machine and your username.

2. Use **ls -la** to make sure there is a .ssh directory in your home directory. Create this directory if it does not exist with the command **mkdir .ssh**

```
drwx----- 2 ubuntu ubuntu 4096 Jun 24 09:13 .ssh
```

3. Download and save the virtual machine's **private key** provided by your instructor
4. Move the private key file into the `~/.ssh` directory

```
$ mv <instance-key_path> /Users/yourname/.ssh
```

```
total 0
drwx----- 3 rohan staff 96 May 25 17:07 .
drwxr-x---+ 19 rohan staff 608 May 25 17:07 ..
-rw-r--r-- 1 rohan staff 0 May 25 17:07 vm-instance-key.pem
```

5. Change the permissions of the private key file:

```
$ chmod 600 /Users/yourname/.ssh/<instance_key>
```

6. Connect to the linux workstation using this command:

```
$ ssh -i /Users/yourname/.ssh/<instance_key> ubuntu@your-ip-address
```

```
MacBook-Pro ~ % ssh -i ~/.ssh/vm-instance-key.pem ubuntu@20.127.64.
243
Welcome to Ubuntu 20.04.4 LTS (GNU/Linux 5.13.0-1023-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 System information as of Wed May 25 12:04:58 UTC 2022

 System load:  0.04           Processes:      110
 Usage of /:   6.8% of 28.90GB  Users logged in:  0
 Memory usage: 34%            IPv4 address for eth0: 172.23.0.4
 Swap usage:  0%

 * Super-optimized for small spaces - read how we shrank the memory
 footprint of MicroK8s to make it the smallest full K8s around.

 https://ubuntu.com/blog/microk8s-memory-optimisation

13 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

*** System restart required ***
Last login: Wed May 25 11:29:03 2022 from 223.178.210.155
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

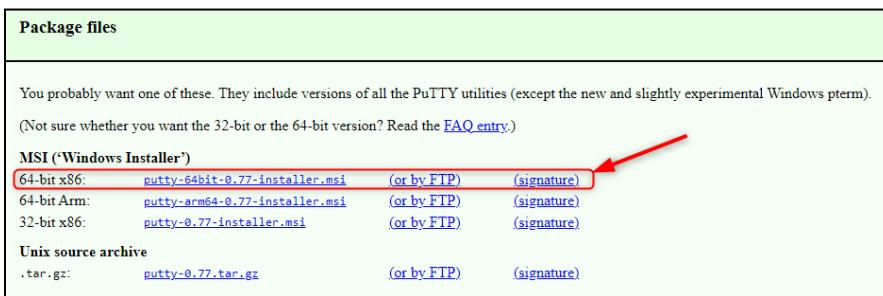
ubuntu@ubuntu:~$
```

# Windows Workstation steps:

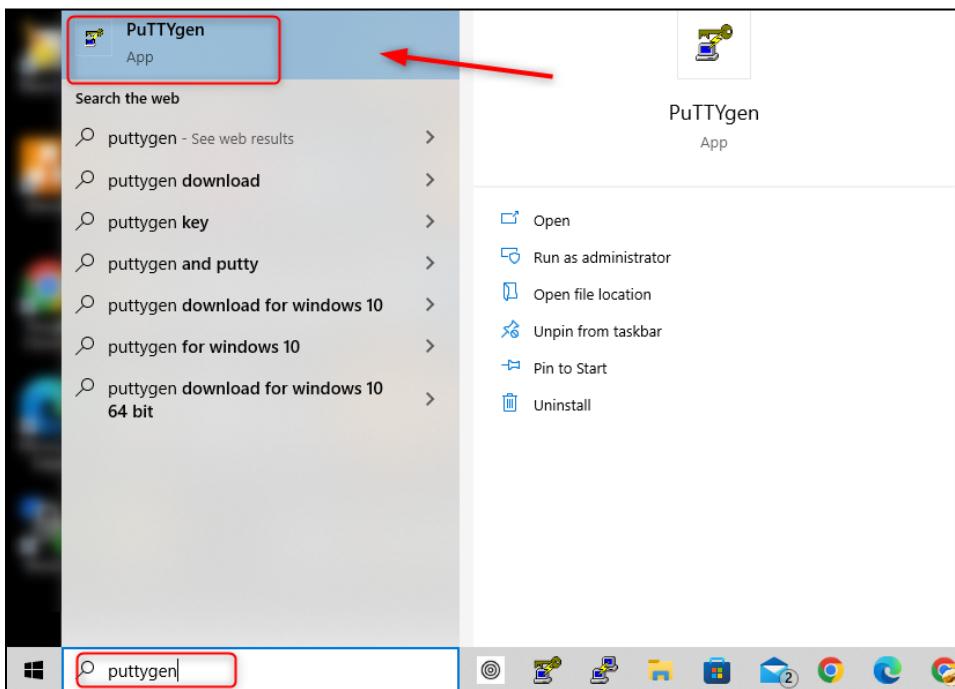
1. Download and save the virtual machine's **private key** provided by your instructor
2. Navigate to <https://www.putty.org/> and click on '**here**'



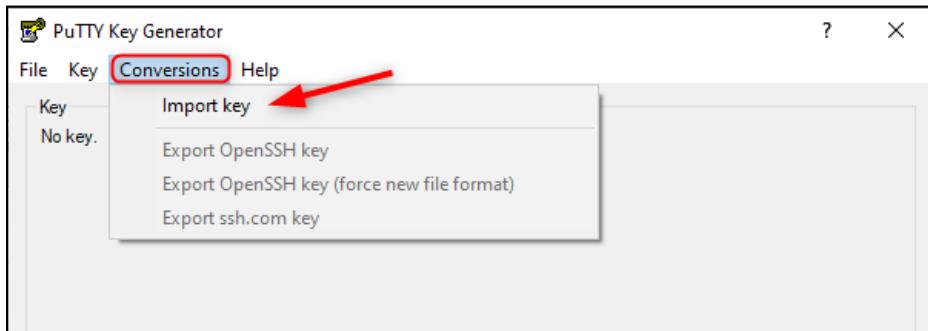
3. Under MSI(Windows Installer), click on **64-bit x86** to download **PuTTY**



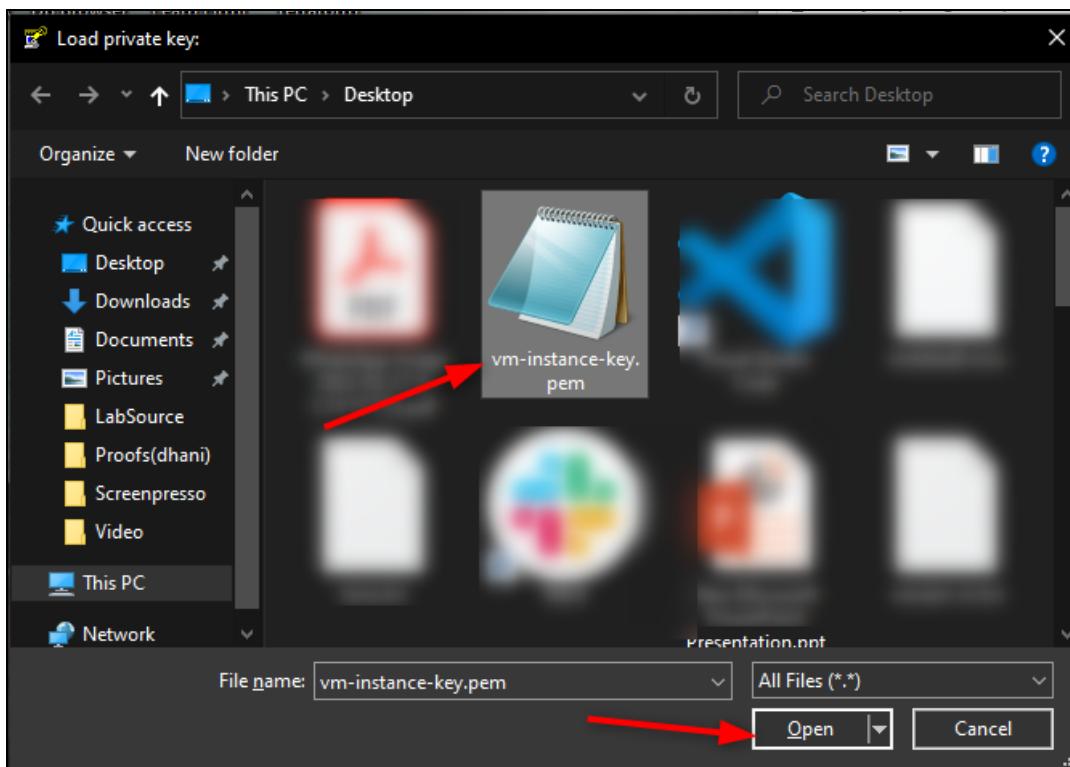
4. Launch **PuTTYgen** and click on '**Load**'



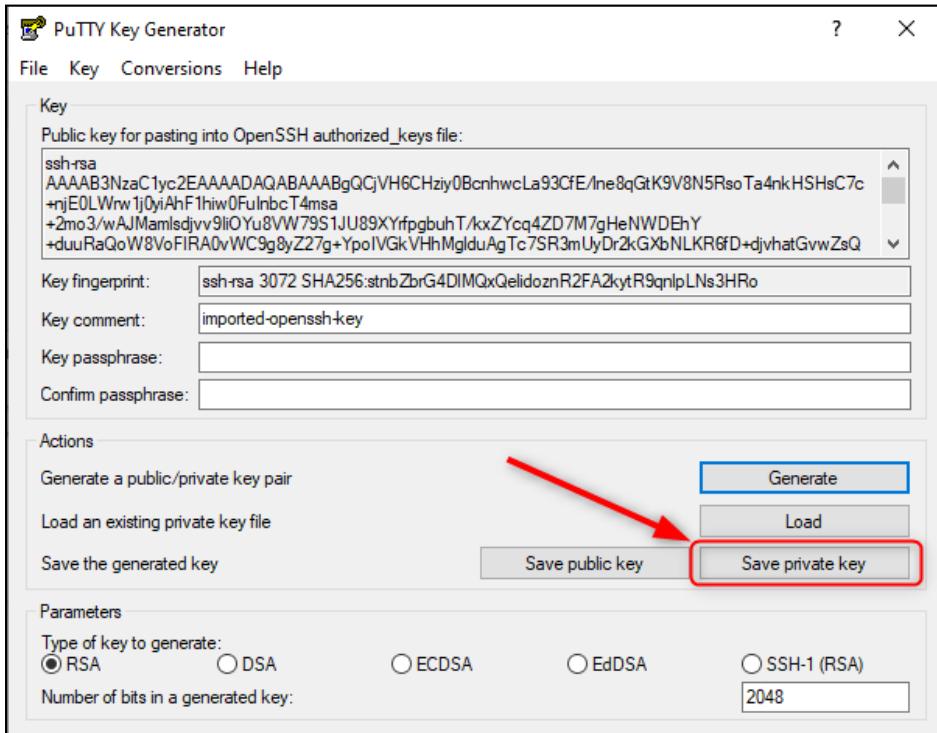
5. Click on ‘Conversions’, then click on ‘Import key’



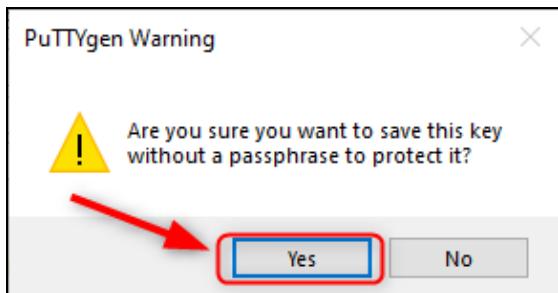
6. Find the **private key file** and click ‘Open’



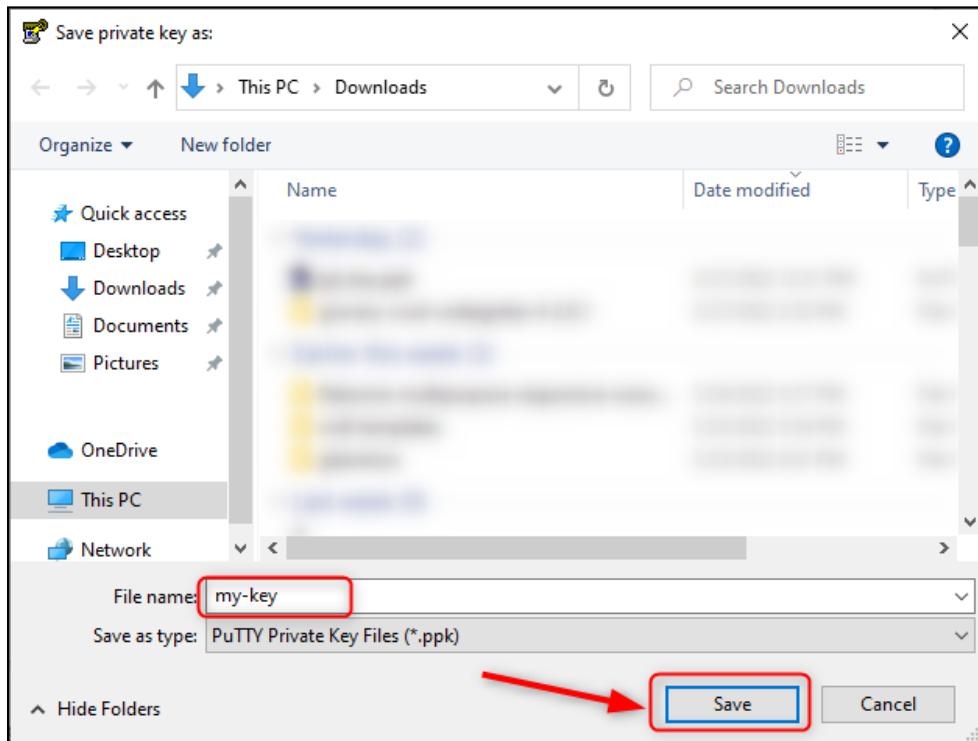
7. Click on ‘Save private key’



8. Choose ‘Yes’ to save without a passphrase



9. Save this file where you can find it later, with the file name ‘**my-key**’. In the ‘Save as type’ dropdown, select ‘**PuTTY Private Key Files**’



10. You can close puttygen
11. Open PuTTY
12. Under Connection -> SSH -> Auth -> ‘Authentication parameters’ click ‘Browse’
13. Find the private key you created, (‘**my-key**’) and click ‘Open’
14. Click Session (you may have to scroll up in the PuTTY menu window to see it)
15. Under Host Name, enter your workstation **hostname** or **IP Address**
16. Under ‘Saved Sessions’ type in “**Linux Workstation**” and click ‘**Save**’  
**Note:** This should create an entry named “Linux Workstation” that you can double click on later to reopen the SSH session
17. Double click “**Linux Workstation**” to connect to the linux VM
18. Type in the username: “**ubuntu**”, then press enter

19. You will be redirected to the command prompt on your Linux Workstation

## ACCESSING A REMOTE WINDOWS SERVER

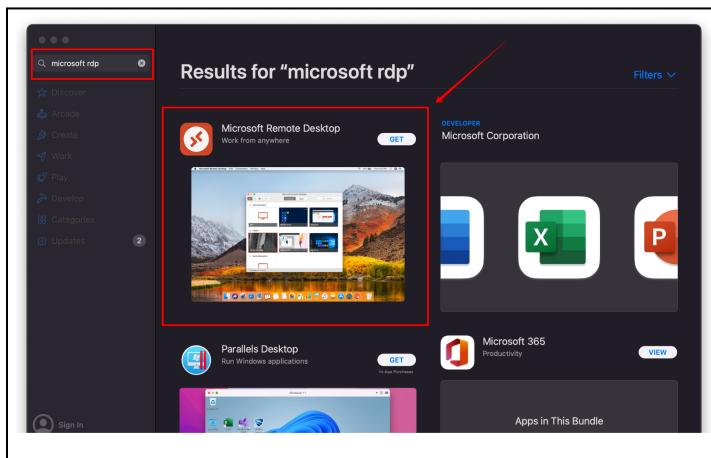
Mac or Linux workstation steps: You will need to sign up for an Azure DevOps account. This account will give you access to Azure Repos (your git repos) and Azure Pipelines (your CI/CD tool).

**Download Microsoft Remote Desktop 10**

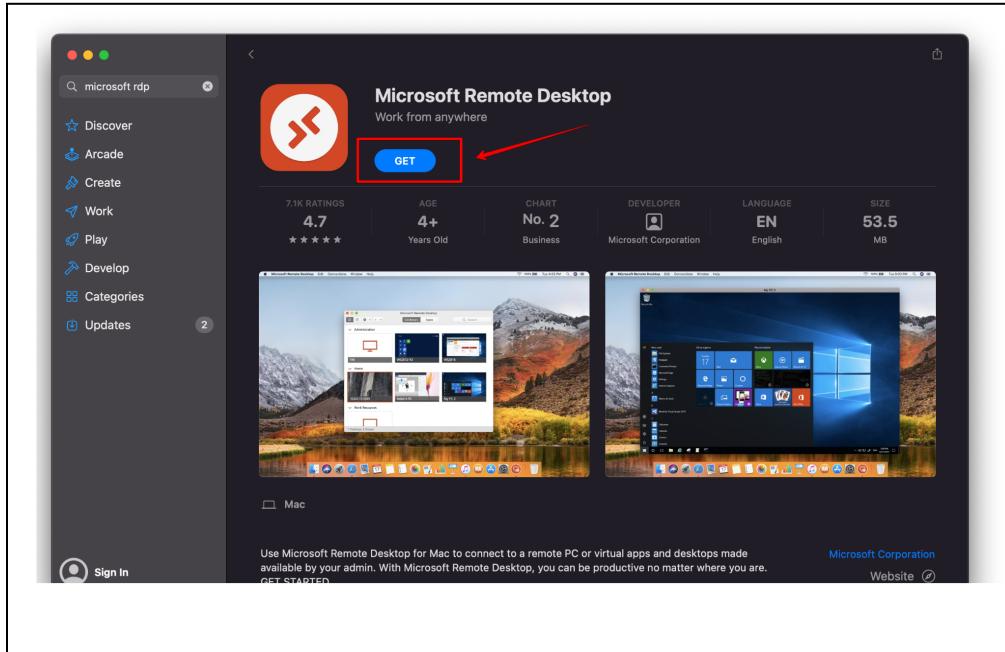
20. Click on **App-store icon**



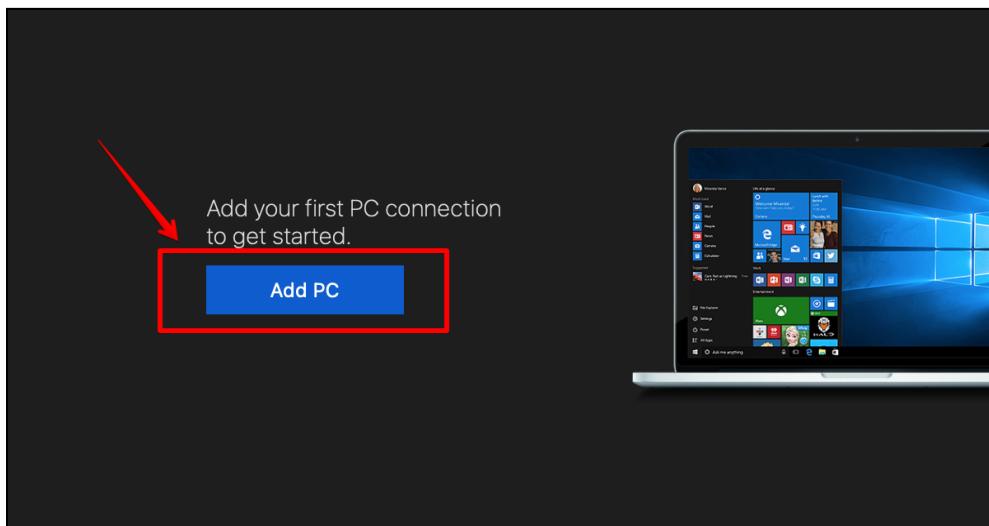
21. Search for '**Microsoft rdp**'



22. Click on 'Get' and install it



23. Launch Microsoft Remote Desktop, click on 'Add PC'



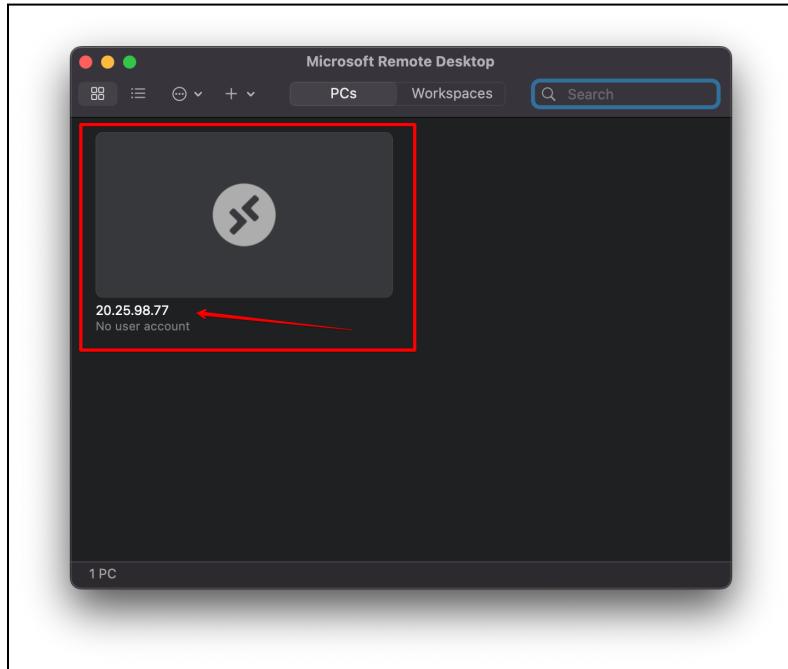
24. Copy the **Public IP address** from your virtual machine and **paste** it into the ‘PC name’ field

The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with various service icons like Home, Dashboard, All services, Resource groups, App Services, Virtual machines, Function App, SQL databases, Azure Cosmos DB, Load balancers, Storage accounts, Virtual networks, Azure Active Directory, and Monitor. The main area is titled 'window-vm' under 'Virtual machines'. It has sections for Overview, Activity log, Tags, Diagnose and solve problems, Settings (Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, Extensions + applications), Properties (Virtual machine, Computer name: window-vm), Monitoring, Capabilities (8), Recommendations, and Tutorials. The 'Properties' section is currently selected. In the 'Virtual machine' tab, the 'Public IP address' field is highlighted with a red box and contains the value '20.25.98.77'. Other details shown include Resource group (pb), Status (Running), Location (East US), Subscription (Michigan-Medical), and Tags (te : window vm).

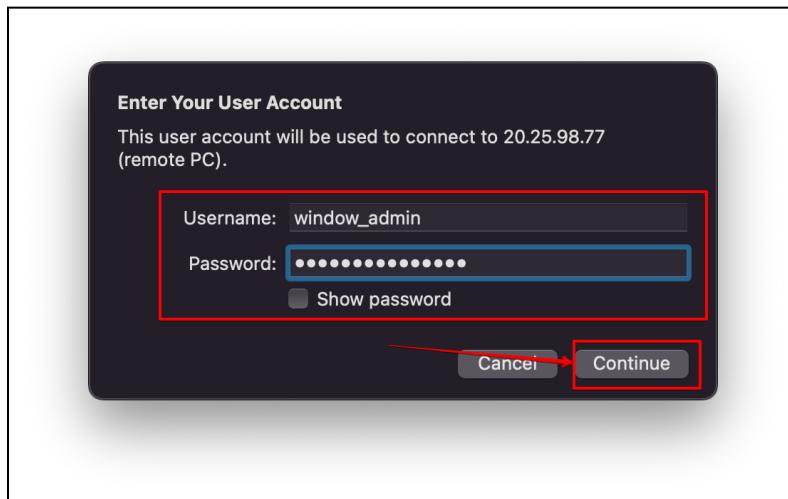
25. Click ‘Add’

The screenshot shows a 'Add PC' dialog box. At the top, it says 'PC name:' followed by a text input field containing '20.25.98.77', which is also highlighted with a red box. Below that is a dropdown for 'User account:' set to 'Ask when required'. The dialog has tabs for General, Display, Devices & Audio, and Folders, with 'General' selected. Under 'General', there are fields for 'Friendly name:' (Optional), 'Group:' (Saved PCs), and 'Gateway:' (No gateway). There's also a checked checkbox for 'Bypass for local addresses'. At the bottom of the dialog, there are three checkboxes: 'Reconnect if the connection is dropped' (checked), 'Connect to an admin session' (unchecked), and 'Swap mouse buttons' (unchecked). At the very bottom are two buttons: 'Cancel' and 'Add', with a red arrow pointing to the 'Add' button.

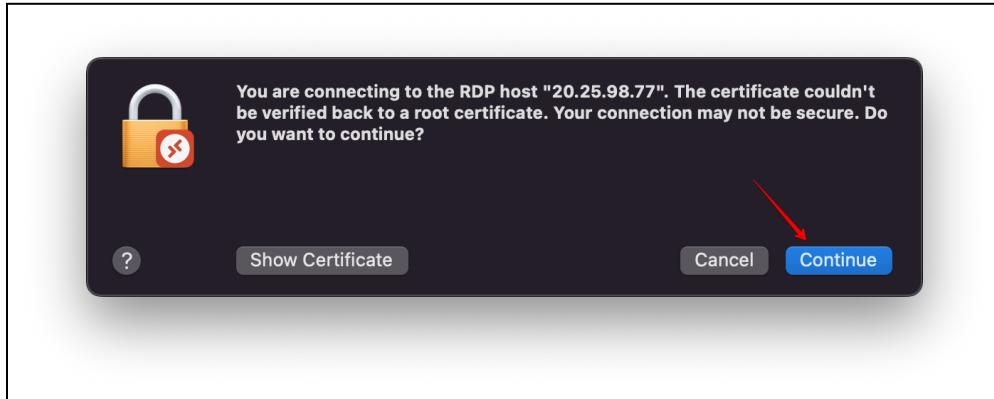
26. Click on the machine that will be listed inside the **Microsoft Remote Desktop** Application



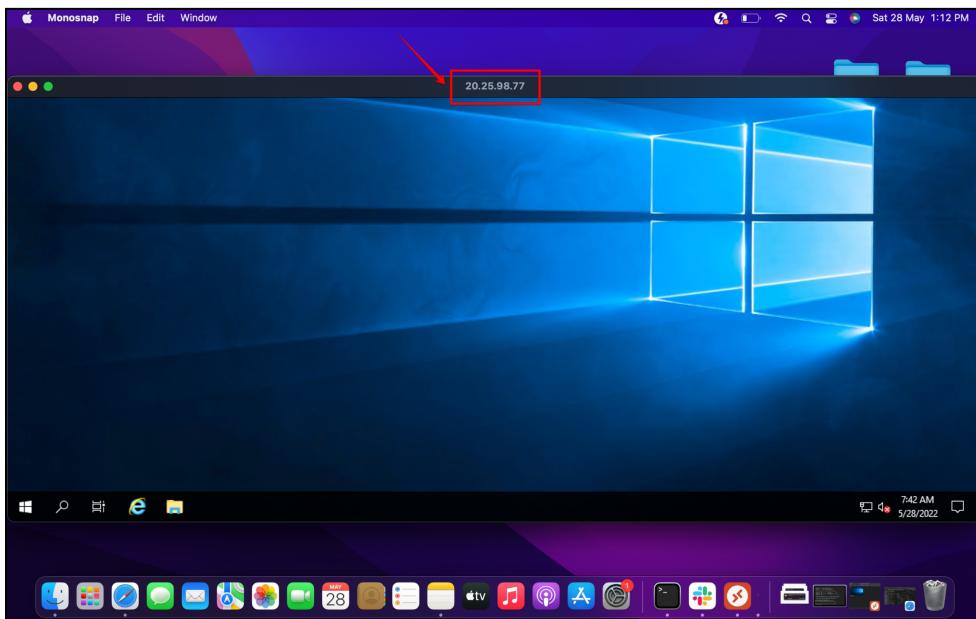
27. Enter your **Username** and **Password** (ask your instructor for credentials)



28. Click '**Continue**' to connect to your machine



29. You will be successfully logged in to the **Windows server** via **RDP**



- a. Launch IE
- b. Choose 'Don't use recommended settings'
- c. Go to Getfirefox.com
- d. For every restriction, click 'Add' and 'Close as needed'
- e. When asked to save the Firefox installer, click 'Save'
- f. Then click 'Run'

- g. Close IE once Firefox is installed
- h. Search for and install PuTTY. Use the 64-bit version  
<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>
- i. Save puttygen.exe(on the same page). There is no install needed for puttygen
- j. You can drop it on your desktop
- k. Search for and install a text editor

Suggested editors:

- Atom
- Visual Studio Code

**Notify your instructor that you are done with the Lab**

**END OF LAB**