

Diploma in Information Technology

Second Semester

Assignment Title: Cloud Project and Video Explainer

Project Name: mhs realestate

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Submitted To: Miss Hina Iqbal

Unit Code: ICT 1711

Unit Name: Introduction to Server Environment and Architecture

Ip address :- 20.9.133.113

Dns : <https://mhsrealestate.site>

Project Proposal :-

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The proposed project is a real estate website designed to provide users with an executive and intuitive platform to browse, search, and enquire about the property listing . The website will feature an exquisite and user-friendly design that can access all devices, including desktops, tablets, and mobile phones. The significant features that will be included are given below:

1. **Property listing:** A detailed database of properties, including high-quality HD pictures,with thorough descriptions, pricing, and telling the exact location.
2. **Search and Filter:** This feature is one of the most critical features in our websites as it will help the users to find their property exactly whichever kind of property they want with vast sub-filters, including whether you have to rent or sell or to take an apartment villa or

house which type of amenities they want at what location they want along with that regarding the budget so it very easy that all details will be asked and with one click, they on there place they can view there interested in.

3. **Contact forms** :This feature is also very effective for our users as every listing has a contact form In its description where many different agents are been connected from all around the market with different languages so users can directly approach them according to their convenience and another amazing feature is that as you will submit the form it will comes to our database and as quick it would possible our agents will contact users in precise time.
4. **Responsive Design**:- As the approach and design are straightforward to use and understand, we have developed it as a user-friendly interface so that even a child can operate it. There will be no issues wherever the website wants to be accessed. We have designed it for all applications, such as tablets, mobile desktops, etc.
5. **Admin panel**: We have a very strong back-end panel with high security where only authorized people as admins have full access to the website, which will allow agents or administration to add, update, or remove ads. Along with this, the information given by users is completely secured. The information given by the user is saved and will not be forwarded to any person or agent without permission.

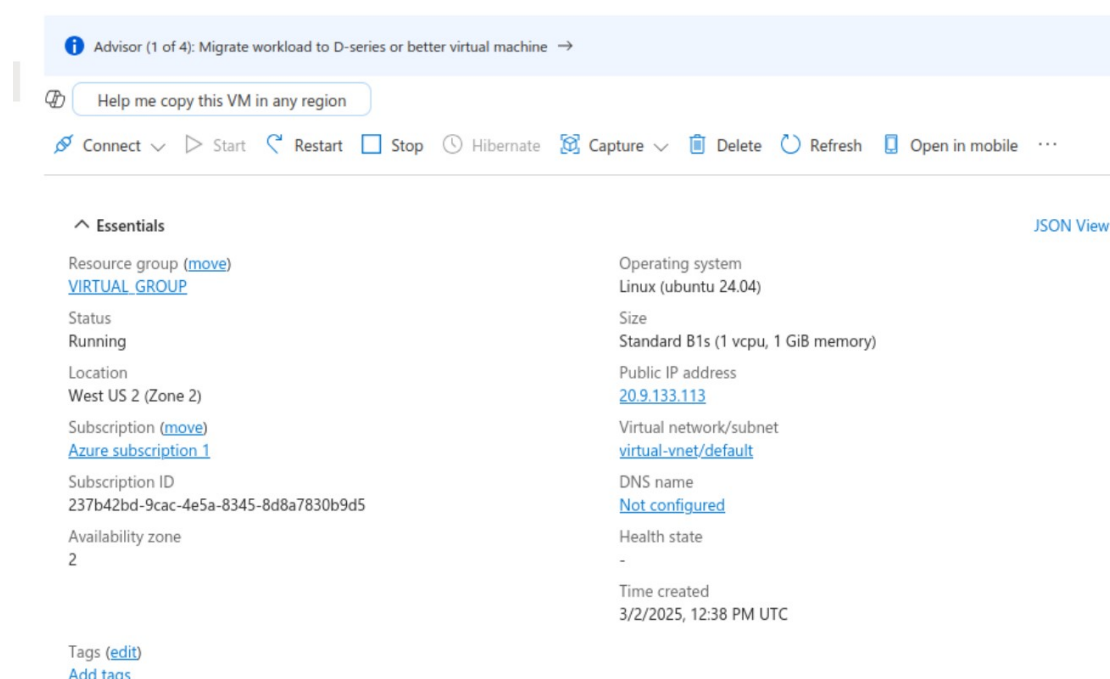
Overview:

The website will be hosted on **Amazon Web Services (AWS EC2)**, leveraging Infrastructure as a Service (IaaS) to ensure scalability, reliability, and security. AWS EC2 provides the flexibility to scale resources as traffic grows, ensuring the website can handle increased user demand without performance issues. Additionally, AWS offers robust security features, including firewalls and encryption, to protect user data and property information.

The goal of this project is to create a user-friendly platform that simplifies the process of finding and inquiring about properties, benefiting both potential buyers and real estate agents. By using AWS EC2, the website will be future-proof, allowing for easy expansion and integration of additional features, such as virtual property tours or advanced analytic, as the project evolves.

For this project, the **MIT License** has been chosen due to its simplicity and permissiveness. The MIT License allows for maximum flexibility, enabling others to use, modify, and distribute the code without restrictions, as long as the original license and copyright notice are included. This is ideal for a real estate website, as it encourages collaboration and innovation, allowing other developers to build upon the project. Additionally, the MIT License aligns with the project's goal of creating an open and accessible platform for property listings. The license markings will be included at the bottom of the website's HTML page, ensuring compliance and transparency.

Configuration of my Server in Microsoft Azure :



The screenshot displays the Azure portal interface for a virtual machine. At the top, there is a blue banner with an information icon and the text "Advisor (1 of 4): Migrate workload to D-series or better virtual machine →". Below this is a search bar with the placeholder text "Help me copy this VM in any region". A toolbar contains several action icons: Connect, Start, Restart, Stop, Hibernate, Capture, Delete, Refresh, and Open in mobile. The main content area is titled "Essentials" and shows various VM details in two columns. The left column includes links for "Resource group (move)" and "Subscription (move)", and lists the status as "Running", location as "West US 2 (Zone 2)", subscription ID, and availability zone. The right column lists the operating system as "Linux (ubuntu 24.04)", size as "Standard B1s (1 vcpu, 1 GiB memory)", public IP address as "20.9.133.113", virtual network/subnet as "virtual-vnet/default", DNS name as "Not configured", health state as "-", and time created as "3/2/2025, 12:38 PM UTC". A "JSON View" link is located in the top right corner of the Essentials section. At the bottom left, there are links for "Tags (edit)" and "Add tags".

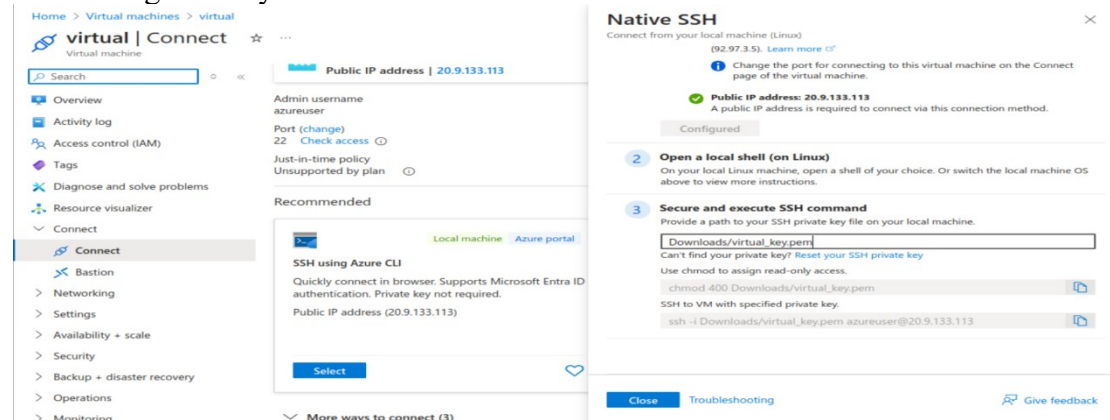
Essentials	
Resource group (move)	Operating system
VIRTUAL GROUP	Linux (ubuntu 24.04)
Status	Size
Running	Standard B1s (1 vcpu, 1 GiB memory)
Location	Public IP address
West US 2 (Zone 2)	20.9.133.113
Subscription (move)	Virtual network/subnet
Azure subscription 1	virtual-vnet/default
Subscription ID	DNS name
237b42bd-9cac-4e5a-8345-8d8a7830b9d5	Not configured
Availability zone	Health state
2	-
	Time created
	3/2/2025, 12:38 PM UTC

Installing Apache :

```
azureuser@virtual:~$ sudo apt install apache2
```

```
azureuser@virtual:~$ sudo apt upgrade apache2
```

Connecting with my Ubuntu :-



1. Click connect
2. Select Native ssh.
3. Write the location of your private key.
4. Copy and paste this command in Ubuntu.

First run this:

`chmod 400 Downloads/virtual_key.pem`

```
azureuser@virtual:~$ chmod 400 Downloads/virtual_key.pem
```

Then run this:

`ssh -i Downloads/virtual_key.pem azureuser@20.9.133.113`

```
azureuser@virtual:~$ ssh -i Downloads/virtual_key.pem azureuser@20.9.133.113
```

```
vboxuser@Harris:~$ ssh -i Downloads/virtual_key.pem azureuser@20.9.133.113
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.11.0-1012-azure x86_64)

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

System information as of Tue Apr  8 13:51:22 UTC 2025

System load:  0.08               Processes:    116
Usage of /:   8.0% of 28.02GB    Users logged in: 0
Memory usage: 40%               IPv4 address for eth0: 10.0.0.4
Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

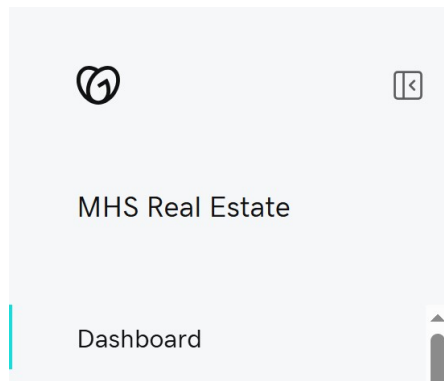
Expanded Security Maintenance for Applications is not enabled.

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

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Tue Apr  8 12:30:47 2025 from 92.97.3.5
azureuser@virtual:~$
```

Domain purchased :



Connecting with my local web Ip address by adding these records :-

Type ?	Name ?	Data ?	TTL ?	Delete	Edit
A	@	20.9.133.113	600 seconds		

Installing SSL Certificate :-

```
Account registered.
Please enter the domain name(s) you would like on your certificate (comma and/or
space separated) (Enter 'c' to cancel):
Please specify --domains, or --installer that will help in domain names autodiscovery, or --cert-name for an existing ce
rtificate name.
Ask for help or search for solutions at https://community.letsencrypt.org. See the logfile /var/log/letsencrypt/letsencr
ypt.log or re-run Certbot with -v for more details.
azureuser@virtual:~$ sudo certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Please enter the domain name(s) you would like on your certificate (comma and/or
space separated) (Enter 'c' to cancel): mhsrealestate.site
Requesting a certificate for mhsrealestate.site

Successfully received certificate.
Certificate is saved at: /etc/letsencrypt/live/mhsrealestate.site/fullchain.pem
Key is saved at: /etc/letsencrypt/live/mhsrealestate.site/privkey.pem
This certificate expires on 2025-07-02.
These files will be updated when the certificate renews.
Certbot has set up a scheduled task to automatically renew this certificate in the background.

Deploying certificate
Successfully deployed certificate for mhsrealestate.site to /etc/apache2/sites-available/000-default-le-ssl.conf
Congratulations! You have successfully enabled HTTPS on https://mhsrealestate.site

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If you like Certbot, please consider supporting our work by:
* Donating to ISRG / Let's Encrypt: https://letsencrypt.org/donate
* Donating to EFF: https://eff.org/donate-le
-----
azureuser@virtual:~$
```

Now ssl is successfully applied to my domain.

For writing html code I write:-

```
azureuser@virtual:~$ sudo nano /var/www/html/index.html
```

And then edit it with my html code and then my website will be running.