Final Test

- Describe the main concepts covered in your video. How do they relate to the course material we discussed?
- Can you explain the process you followed to gather information and resources for your video?
- How would you apply the knowledge gained from this assignment to real-world scenarios or future projects?

- The Topic I choose is:

Techniques for Reducing Power Consumption in Data Centers Explore architectural techniques aimed at reducing power consumption in large data centers, focusing on both hardware and software innovations.

In this video I explain how you can actually reduce the power consumption in data centres and explore how you can increase their output so it was focusing on both hardware as well as software innovations. Some of the points which are covered in the video were how the energy efficient processors might have might contribute to a better architecture in data centre second point which I covered was low power memory technologies for example the DDR4 ram and DDR5 since they are the power down modes I covered those followed by the NVMS and then the Third Point I noted was efficient cooling system because if there is if the cooling is not efficient it means the data centres will be taking a lot of electricity a lot of energy and the output will be not the best it will not be the most efficient possible and look for in that we can use liquid cooling and maybe the hot cold aisle containment then also I also wrote about energy efficient storage solutions for example the SSDs using SSD instead of HDD's because they're a little faster than the SDGS actually not a little fast there more fast and the HDD's are a little are slower and they also take a little extra energy as compared to the SSD's and for software innovation side I talked about in this video I don't know virtualization how you can use a server consolidation and then how everyone can be aware about energy aware scheduling then energy efficient networking and power management software for example where you can do power capping or we can monitor and it and use analytics to actually make sure that the data centres are working in the proper efficient way.

Since we had to take a deep depth in one of the topics which actually relates deeply with computer architecture I choose SSD versus HDD and explain their working in detail and how they can help in making the data centres more efficient.

- The Process:

The process for making this video was a bit lengthy but at the end the result was worth it. Since we had to use different AI's to make this video possible I had to search up different a I tools to help me make this whole video. After selecting the topic I made sure that I had a script, which I made with the help of open AI's ChatGPT then after my script was ready I had to search some online video maker tools and some websites which provided us stock photos and videos which you could use in the video then the video editing tool I used was Microsoft clip champ which help me segregate all the audio video and all the scenes that I had. After the video was ready we had to use some a I generated audio in the back end so I used An A tool to transfer all the script as a background sound then with the help of Microsoft clip champ I made sure that the sound aligned with the video and after some hours of editing it was all good to go.

Examples of sources I used where blogs from companies like Cisco, NVIDIA and Energy Star and then I took some stock images from istock photos and storyblocks.com

- Apply this knowledge.

I would say that this video helped me gain a lot of knowledge about various components which are used and which contribute to wards the building of data centres all the software and hardware concept was a lot to understand but thinking from architecture point of view I really enjoyed the hardware aspect of the video I made especially the SSD and HDD part. I learned about how the cooling systems contribute towards the efficiency of datacenters how we can use liquid cooling which is more efficient way of cooling then I learned about DDR4/DDR5 that we can use them with power down modes which in return reduces power when it's idle. Then I also learn about non volatile memory which is called NVM it consumes less power than the traditional memory there were some other aspects including power management features etc.