

Computer Science Homework

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HOMEWORK QUESTION – Answer in books!

A small business is expanding their office as they now have multiple employees who work collaboratively on projects. They need be able to discuss projects, access information on and off site and print any relevant paperwork for the project using one of the two office printers. Discuss the benefits and drawbacks of installing a network of computers for the office and suggest and explain which topology they should use.

By installing a network of computers, the office employees would receive many benefits. A potential benefit could be centralized file storage; if they decided to use the client-server topology then their personal data and documents could be stored on the server, meaning that if their local machine breaks they can begin working again immediately on a different computer. Secondly, using this topology can result in reduced costs as once the expensive server is initially installed, the client computers are much cheaper to purchase. Additionally, no matter which topology is chosen, printers can usually be shared over the network, so anyone can print from them. If all computers are connected to the network then a chat server can be setup or, through the internet, employees could communicate with a service like slack.

By connecting all of the computers to a server, however, the office is creating a single point of failure. If the server's hard drive corrupts or a natural disaster strikes all of the company's data is lost. This also holds true if a virus is introduced to the network through a negligent or malicious employee; if the central server is targeted then the virus could receive access to all of the employees' data. You could mitigate this risk with a backup solution like Cloudberry Backup, which allows you to back up a windows server to Azure or S3 and, with 30 minutes' notice, boot up your server in one of their datacentres while you fix your server, meaning that the office will be able to continue working whilst you fix the server.