Eric Zorn

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ICT 4300

Dr./Professor Lakahni

**ICT 4300 Module 7 Homework Assignment**

1. What is thin-client computing? What is thick-client computing?
   1. A thin-client is a usually a lightweight computer that is built to connect to a server from a remote location. In most cases, the server will be completing most of the work for logic and storing information to the server and or the database. On the flipside is a computer system that is more of what we as consumers and employees are used to seeing on a daily basis, the thick-computing method. Most of the time, we interact with a thick-client system where the work for the most part is completed by the client or the computer itself, while it can still access and send program calls to the server. An example of a frequent use for the thin-client computing is through the computers at a library and or school. All of the applications are hosted and run through the server with their GUI being rendered on the client. This takes away the need for a heavy graphics card and or processor in your computer. This is because all of the computing power for the most part will be taken care of on the server-end. Most of the time, these thin-client computing systems are also run in LAN (Local Area Network) setups and are connected to a server farm. The servers hold applications that will utilize cloud computing and application virtualization like emulators. All of the data that has been interacted with will be stored on the server or in the database and then sent to the thin-client computer system to interact with the GUI for the user.
2. Compare the advantages and disadvantages of using thin-client with that of thick-client.
   1. As mentioned in the above post, there are advantages and disadvantages to both of these system types. The advantages to a thin-client is that it is a stateless and fanless desktop terminal that has no hard drive. All of the applications, data, memory, and anything else you would associate with a standard computer is going to be stored at the data center and on the server. This has its perks. For companies or organizations that are adopting this system architecture, it will lighten the work load for the client’s computers and or browser when processing data or running different applications and software. All of the software is virtualized onto the server and will access the hard drives that are in the data center for the applications and data that are being used. Thin clients are usually cost-effective ways to create a VDI or Virtual Desktop Infrastructure. One of the famous solutions is the CITRIX application to allow for virtualized software and terminals. Thin-clients are also very scalable and much more security driven. However, thin-clients are definitely not going to be the answer to everyone’s questions or issues. Thick clients or also known as heavy clients, are full-featured computers that are going to be connected to a network. These computers can be functional without the network connection; it will only be running applications that can run on the client-side of operations. The server may provide the thick client with programs and or files that are not directly being stored on the machine’s local hard drive or solid-state drive. According to Tech Terms, it is not very common for workspaces to provide employees with thick client systems. This enables the employees to access files on a local server or use the computers offline. When the computer is disconnected from the network, it is just known as a work station. It is up to the company and or organization which is the better solution for them in the long run.
   2. <http://www.devonit.com/thin-client-education>
   3. <https://techterms.com/definition/thickclient>
3. What do you think is the future of thin-client computing?
   1. I personally find that the idea of thin-client computing is extremely interesting and can demonstrate being one of the most futuristic and efficient ways for companies to be able to interact and access their data. I personally do not believe that it is one-hundred percent reliable at the moment to allow companies to use heavy data processing or rendering over the server. Applications like the Adobe Creative Cloud would take a huge toll on the server when rendering images or video to then export to a file. This would potentially affect the way that people are completing work and viewing files from other computers on the network. There are some logic errors as well. This can be seen with applications like Google Drive, where every time that there is an update to a file, it is updated and saved in real time. To be able to accomplish the same or similar task with large applications like Adobe, Final Cut, etc, would probably be much more difficult. Many of these applications should not be collaborative and or would take a while to save while someone else is updating an older version of that file. This would cause the server and the database to become confused and render weird errors with incompatible save times. I believe that we will eventually get to the point of being able to load and manipulate large applications of thin-computers and networks. Already with solutions like CITRIX, many standard windows applications like Microsoft Office and other smaller applications/software are available. The true test of this would be for the creative fields and or software engineering with large file types like code, images, and or video plus any other large file formats. All in all, I believe that thin-computing has some time to go. However, I feel that thin-computing can become more power powerful than a thick-computing system eventually and can raise the potential for companies and organizations in the future.
4. Give three examples of popular applications accessible through the Internet that can be used with thin-clients
   1. Microsoft Office - Most all of the applications that are part of the Microsoft Office application suite are available and or other word processing applications are available through thin-client applications like CITRIX. These are also some of the most crucial applications for companies, due to the fact that Word, Excel and PowerPoint are two of the world’s most popular professional software programs for businesses, students, and home users.
   2. Google Drive- Online applications that use the cloud based computing practices like Google Drive are all being used and hosted from the server of the company and are being manipulated by the user. This would be from a thin-client system architecture. All of the data processing and storage are going to occur on the server-side and not the client-side (browser) for the user. This would be an example of thin-client programming.
   3. Facebook, Twitter, Instagram – Applications on the web are definitely going to be considered thin-client applications. Huge examples of this would be the social media applications. This is due to the fact that each of these applications is written in HTML/CSS/JS and in some cases, PHP, Python, and or Ruby and Java. Some of these applications also share other languages of the web as well, but those are much less popular. The benefit to these applications is that all work done with interacting in the DOM for the application is processed and sent to the server and or retrieved from the database. All of this information is going to be then sent to the middle layer of the business logic, most likely in three-tier architecture, and then rendered on the client (in the browser). This has become the new standard for interacting and building applications. I am super interested to see where it is going and we are slowly moving away from natively installed apps on our desktops and laptops. Thin computing is the way of the future.
   4. Lastly, different email clients will work as part of a thin-client system like Gmail, Yahoo, etc. This will be interacting with the server and the email database between the employees in the company.
   5. There are most likely many other applications that can run over a thin-client system. The way that this works, at least with the company CITRIX, is that the applications have to be built for Windows OS, Linux OS, Web Browser, or SaaS (Software as a Service) apps. CITRIX can also deploy full virtual desktops to your devices over the network so that teams within your company can work wherever they need. It also gives the company flexibility, due to the fact that their information is stored on a data center and can be accessed via a computer or mobile device from nearly anywhere in the world that has an internet connection. The only trick here is that certain companies may or may not to use a VPN (Virtual Private Network) to access their server and their operating systems or applications that are being hosted over the data server or database.

**MySQL Queries and Outputs Lab 3**

**Select \* FROM COST\_TABLE (Output)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Shipper | Min\_Size | Max\_Size | Max\_Weight | Time\_Frame | Cost\_Factor |
| UPS | 0 | 6 | 1 | 100 | 0.5 |
| UPS | 0 | 6 | 1 | 3 | 1.5 |
| UPS | 0 | 6 | 1 | 1 | 2.5 |
| UPS | 6 | 12 | 5 | 100 | 3.5 |
| UPS | 6 | 12 | 5 | 3 | 4.5 |
| UPS | 6 | 12 | 5 | 1 | 5.5 |
| UPS | 12 | 36 | 50 | 100 | 4.5 |
| UPS | 12 | 36 | 50 | 3 | 5.5 |
| UPS | 12 | 36 | 50 | 1 | 6.5 |
| FEDEX | 0 | 6 | 1 | 100 | 1.5 |
| FEDEX | 0 | 6 | 1 | 3 | 1.5 |
| FEDEX | 0 | 6 | 1 | 1 | 1.5 |
| FEDEX | 6 | 12 | 5 | 100 | 3.5 |
| FEDEX | 6 | 12 | 5 | 3 | 3.5 |
| FEDEX | 6 | 12 | 5 | 1 | 3.5 |
| FEDEX | 12 | 36 | 50 | 100 | 5.5 |
| FEDEX | 12 | 36 | 50 | 3 | 5.5 |
| FEDEX | 12 | 36 | 50 | 1 | 5.5 |
| SHIPIT | 12 | 60 | 100 | 100 | 5.5 |
| SHIPIT | 12 | 60 | 100 | 3 | 10.5 |
| SHIPIT | 12 | 60 | 100 | 1 | 15.5 |
| SHIPIT | 60 | 120 | 2000 | 100 | 10 |
| SHIPIT | 60 | 120 | 2000 | 3 | 12 |
| SHIPIT | 60 | 120 | 2000 | 1 | 15 |

**Select \* FROM CUSTOMERS (Output)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| customer\_id | credit\_rating | last\_name | first\_name | title | organization\_id | street | city | state | zip | comments |
| 0 | good | Lewis | Steve | buyer | 103 | 1435 Halerson Way | Santa Clara | CA | 10634 |  |
| 1 |  | Kramer | Kathleen |  | 0 | 10634 Canyon Court | Cortez | CO | 80634 |  |
| 2 | good | Smith | Tom | salesman | 100 | 4653 Forest View | Salt Lake City | UT | 84106 |  |
| 3 | bad | Jones | Becky | owner | 103 | 1903 Centenial way | Denver | CO | 84309 |  |
| 4 | excellent | Taylor | Kathy |  | 0 | 43 Baker St | Pueblo | CO | 80234 |  |
| 5 |  | Obladd | David | owner | 101 | 930 Main | Colorado Springs | CO | 80902 |  |
| 6 | good | Dennis | Mike | sales rep | 103 | 6492 Sandy Circle | Miami | FL | 63498 |  |
| 7 | good | Peterson | Carole |  | 0 | 4309 Oak | Bailey | CO | 80103 |  |
| 8 | poor | Cohn | Jackie | owner | 102 | 1433 Seedy Side | Moab | UT | 84322 |  |
| 9 | good | Sampson | Gerrie | clerk | 104 | 1999 Market | Silverton | CO | 80333 |  |
| 10 | good | Holbrook | Donna | president | 100 | 10783 Back Bay | Oakland | CA | 60298 |  |

**Select ucase(name) from organizations (Output)**

|  |
| --- |
| ucase(name) |
| E\*BOOKS |
| MAIL ORDER MEDIA |
| ROCKY MTN E\*TAINMENT |
| MOBILE MEDIA |
| SAM AUTO BODY AND MEDIA SALES |

**Select sum(weight) from shipment\_items (Output)**

|  |
| --- |
| sum(weight) |
| 395 |

**Select min(height) from shipment\_items (Output)**

|  |
| --- |
| min(height) |
| 6 |

**Select max(width) from shipment\_items (Output)**

|  |
| --- |
| max(width) |
| 24 |

**Select distinct(from\_state) from shipments (Output)**

|  |
| --- |
| from\_state |
| CO |
| CA |
| OR |
| AZ |