CECS 327 Assignment 5 - Naming

20 points

Assignment Description. Answer the following questions from the Chapter 5 reading from your textbook.

Be through and complete with your answers. You may work on these questions with a partner (no

more than two working together), but both students must submit the document individually on Beachboard

Dropbox along with both students’ names on each submission.

1. Would you consider a URL such as http://www.acme.org/index.html to be location independent?

What about <http://www.acme.co.uk/index.html>?

Yes, both of these are location independent. Since the location is independent of the address.

2. Is an identifier allowed to contain information on the entity it refers to? Why?

Yes, as long as the information used to identify it is not allowed to change. Allowing this to change would violate one of the property identifiers.

3. Consider the Chord system and assume that a node 7 has just joined the network. What would its

finger table be and would there be any changes to other finger tables?

Its finger table would be {9, 9, 11, 18, 28}

Every finger table entry with the value 9 has to be reconsidered

4 has an outdated finger table. the new should be {7, 7, 9, 14, 28}

Node 21 {28, 28, 28, 1, 7}

Node 1 {4, 4, 7, 9, 18}

4. If we insert a node into a Chord system, do we need to instantly update all the finger tables? Why?

No, as in the last question only finger table entries with the value 9 needed to be reconsidered.

5. Suppose that it is known that a specific mobile entity will almost never move outside domain D, and

if it does, it can be expected to return soon. How can this information be used to speed up the lookup

operation in a hierarchical location service?

If this is know just encode domain D in the identifier that is being used for lookup. The operation will be forwarded to the node D directory and continue the search.

6. Consider an entity moving from location A to B, while passing several intermediate locations where it

will reside for only a relatively short time. When arriving at B, it settles down for a while. Changing

an address in a hierarchical location service may still take a relatively long time to complete, and

should therefore be avoided when visiting an intermediate location. How can the entity be located at

an intermediate location?

Making forwarding points along the route at intermediate locations until the destination is reach will make it so that the entity can be located at an intermediate location. The pointers are deleted along with address A when the entity arrives at A.

7. Give an example of how the closure mechanism for a URL could work.

From the diagrams discussed in lecture the scheme identifier from the URL is pulled. It then extracts the host name from the URL, our example was my.csulb.edu. Now the DNS server is known and accessed and finally the end of the URL containing the file needing to be looked up is passed to the host.

8. Explain the difference between a hard link and a soft link in UNIX systems. Are there things that can

be done with a hard link that cannot be done with a soft link or vice versa?

With a soft link you can connect to different disk partitions and machines. With a hard link you can point to a different directory.

9. Explain how DNS can be used to implement a home-based approach to locating mobile hosts.

The DNS server will provide the IP address and act as the name server. Every time the host moves the root server is contacted with the current address. The book mentions that the address should not be cached and that a mechanism would be needed to avoid caching of the address.

10. Considering DNS. To refer to a node N in a subdomain implemented as a different zone than the

current domain, a name server for that zone needs to be specified. Is it always necessary to include a

resource record for that server’s address, or is it sometimes sufficient to provide only its domain name?

When the Node is in the same subdomain as N it would not be possible because you would need to contact the name server to discover the address. When they are in different subdomains it is not necessary and a domain name is sufficient.