CS 524 Homework #4

This homework is essentially a lab on DNS, for the total of **100** points.

Reading assignment: Chapter 5 (and references).

1. **(5 points)** Find out the exact number of all top domain names. Make sure you put a date and time of your finding. (Hint: use the information given at the lecture to locate the list of names at IANA.)

2. **(5 points)** Experiment with http://whois.domaintools.com (and also take a look at www.internic.net) and

    a. Find the information about the *stevens.edu* domain as well as the domain of some other school (for instance, the school you had studied at before you came to *Stevens*). Who are the administrative contacts for those domains?

    b. Now, what happens when you try to find the administrative contact for the *.xxx* domain? Explain what you have found.

3. (**20 points**) Research the responsibilities and structure of *IANA (*www.iana.com) and ICANN (www.icann.com). What are the differences in responsibilities between these two organizations? Search the web for the information and then describe the controversy in ICANN concerning *Whois?*

4. (**50 points**) The *Spamhaus* attack

    a. (5 points) Read https://www.isc.org/blogs/is-your-open-dns-resolver-part-of-a-criminal-conspiracy-2/ . Describe (in no more than a couple of paragraphs) the *Spamhaus* attack and explain the dangers of open recursive resolvers.

    b. (45 points) Find out (you will need to search the Web and sort out a lot of information!) how Cloudflare services were used to mitigate this attack.

5. **(20 points)** Study the *AWS Route 53* service and answer the following questions

    a. What does *Route 53* do?

    b. Why is it called *Route 53?*

    c. What other Amazon services is it designed to work with (please explain how it happens with one or two examples)?

    d. What is the difference between the domain name and *hosted zone*?

e. Does *Route 53* have a default for the *Time-to-live (TTL)* value*?*

f. What is the pricing of the service?