

CMPSCI 120 SPRING 2011

REVIEW QUESTIONS FOR FINAL EXAM

Professor William T. Verts

CRYPTOGRAPHY

What is steganography?

What is stenography? (Not the same as steganography!)

What is encryption?

What is the difference between encryption and steganography?

What is single key encryption?

What is double key encryption?

How do single key encryption work?

How does double key encryption work?

What is the difference between single-key and double-key encryption?

Which offers the most protection?

Which is safer?

What are the problems with each?

What is another name for double key?

Give a reason why single key encryption is insecure.

What is PGP?

What does PGP stand for?

What type of encryption generates two keys that are different, one to encrypt and one to decrypt?

How could a double key be cracked?

Explain RSA encryption.

Is RSA encryption a form of single key encryption or public key encryption?

When you encrypt a message, is it often sent over a secure or insecure network?

Is it better to have strong or weak encryption?

Why is encryption safe (for now)?

What is the term used to describe looking at a page and not knowing it contains a hidden message?

What type of encryption uses the same key to encrypt and decrypt a message?

What are the two parts of a double key encryption?

In double-encryption, what is the public key and the private key?

How can encryption and steganography be used together?

What distinguishes a double/public key from a single key encryption?

How can double-key encryption be used to digitally sign a message?

If you are ordering something online, what should you look for on the website to be sure the site is secure?

How can you tell if a site you're on is secure, or if your communication with this site is encrypted?

VIRUSES, MALWARE, BROWSER CACHES, AND SYSTEM MAINTENANCE

What is a virus?

What are the 3 types of Viruses we talked about in class?

How did the old File Infector Virus model work?

What are Boot Sector Viruses and how do they work?

What is a Macro Virus and how do they work?

What type of virus infected disks and put its own code where the system start up code usually is?

In what way can Microsoft Word give someone a virus?

Is a File Infector Virus easy or hard to remove?

When did Boot Sector Viruses first come about?

What type of virus was the "Michelangelo Virus"?

What kind of file is vulnerable to viruses?

Can a .JPG file give you a virus?

Can you get a virus from a .GIF or .TXT file?

How are viruses normally spread?

What was one way viruses were popularly transmitted from PC to PC?

Which kind of virus typically infects e-mail attachments?

Can Macs get viruses?

Does CCleaner help clean up viruses?

What was the original name of the program CCleaner and what are some of its functions?

What is secure file deletion?

What is a file system restore point?

What is the computers registry?

What is the cache?

What are the problems associated with browser caches?

What should you regularly clear in your browser?

What should you clear in your browser to free up hard drive space?

What is the purpose of browsers caching what you download off websites?

UNIX

What is the purpose of a `cgi-bin` folder and where is it stored?

In what folder are scripts stored on a server located?

Where do scripts get put in the `public_html` folder?

How do you find out where you are in UNIX?

Which UNIX folder (and its descendants) contain Web files?

What does the UNIX command `chmod 755 filename` do?

What is the difference between a text (ASCII) transfer and a binary transfer in FTP?

What are the permissions on the `index.html` file after the UNIX command:

```
chmod 604 index.html
```

Imagine that you are working within a UNIX server. Open the directory folder `cmpsci120` and the subfolder `public.html`. Edit the file `example.py`.

After you finish a factorial program using Python in emacs text editor, what's the first line you would enter into UNIX to help show the answer?

PROGRAMMING (CGI, JAVASCRIPT AND PYTHON)

- Do programs that build web pages work correctly all the time?
- What is the dynamic range and precision of a double precision floating point number?
- What are some of the differences between JavaScript and Python?
- What are some of the similarities between JavaScript and Python?
- What is the difference between = and ==?
- What is a class library?
- Why is it important to have class libraries available to programmers?
- What symbols indicate comments in Python and JavaScript?
- What is CGI? What does it do?
- A Common Gateway Interface (.cgi) extension is comprised of what programming language?
- True or False: Learning syntax is easy but learning the extensive library and tools of programming languages is hard.
- What do Python and JavaScript have in common when it comes to defining and using variables?
- How do we print out the square root of 2 in both JavaScript and Python?

JAVASCRIPT

- What does .js mean?
- What are the appropriate tags for calling an external JavaScript?
- Does JavaScript run on the client side or the server side?
- If you want to link an external JavaScript file, how would you do it with HTML? What is this function similar to?
- What are you testing when you plug two equal signs (==) into code under JavaScript instead of one?
- What does `writeln` do in JavaScript?
- Where does JavaScript run, client or server?
- Where does JavaScript run, in relation to your computer?
- In JavaScript, what does the sequence ++ and -- do when appended to a variable?
- What type of numbers does JavaScript use?
- True or False: Indentation does not matter in JavaScript.
- How would you write a while-loop in JavaScript?
- How would you write an if-then-else in JavaScript?

PYTHON

What is Python?

In Python what does the backslash mean (\)?

What is the first line of a program that would distinguish that you're going to be writing the code in Python?

What is the function of: `#!/usr/bin/python`

What is `smtplib`?

How do you write in a comment statement in python?

In Python, what do you get a double precision floating point when multiplying two numbers with decimal points?

What kind of language is Python and why do we need to set the permission to a certain setting. What is this setting?

True or False: Indentation does not matter in Python.

Does Python use double precision floating point like JavaScript? If not what does it use instead?

In Python, can you continue a long statement onto the next line of the script?

Who is the creator of Python?

What is Python named after?

What makes Python so popular with major computing companies like NASA?

What must you type in Python to get into interactive mode?

In interactive mode, if the statement `N=1.5` was followed by the statement `N*N+N`, what would be the answer printed out?

True or False: In Python, operands influence the format of the result?

In Python, how do you open only the square root math function?

In Python, how do you open all math functions in one command?

What is crucial when dealing with Python that doesn't matter in JavaScript as long as the syntax is correct?

In Python, what happens if you use number with decimal points during calculations?

True or False: Python is a free-form style of language.

Python is capable of handling arbitrary length integers. What is an arbitrary length integer?

The first line of a Python program `#!/usr/bin/python` tells the system what?

Does indentation matter in Python?

When using the Python language, does `1.4 * 6.8` equal `9.52` like it would in JavaScript?

How would you write a while-loop in Python?

How would you write an if-then-else in Python?

In Python, is `Math` the same as `math`?

True or False: Python is a bad language to use while dealing with large numbers.

What is arbitrary-precision arithmetic? What is its application?

In Python, what will be the answer for `42/5`? Why?

In Python, what will be the answer for `42.0/5`? Why?

What is the command to run a Python script in UNIX?

Does spacing matter in Python?

What Python command allows you to "borrow" functions from outside packages?

Create a Python function that multiplies a number by 3

HTML, FORMS, PARAMETERS, AND CSS

What does CSS stand for?

What does HTML stand for?

What do question marks stand for in a URL?

What is the purpose of using parameters?

What separates the URL from the parameter?

If you see a question mark in a URL what does it mean?

Parameters in a key value pair are similar to what component of the HTML and CSS languages?

True or false: `frog` is a key in the address `http://www.url.com?animal=frog`

How many parameters are in the following string?

`http://...?color=green&shape=circle&name=go`

What set of characters are used to represent a blank space in web addresses?

Rather than using a space, how can you separate individual parameters? Give an example.

In `http://...?mammal=dog` which is the key and which is the value?

What are the differences between sharing information between two pages and sharing information between a page and a server?

How do you make text bold in CSS?

What kind of HTML markup tags will a blog post support?

In the following URL, what is the key and what is the value?

`http://www.myblog.com?season=summer&my%20vacation`

What happens when you click submit on a form?

Create a CSS tag for a yellow background color, justified paragraphs, and centered text.

What is the URL for `http://www.myblog.com` with the parameters `seasons, summer,` and `my vacation`?

In the age of programs like Dream Weaver, why is HTML useful?

What is an advantage and a disadvantage to the Dream Weaver program?

BIAS

Who is the easiest person in the world to fool?

What is Hindsight Bias?

What is Correlation vs. Causation?

What is Poe's Law?

What is Godwin's Law?

What is Hanlon's Razor?

What is the fallacy of accident? Give an example.

ETHICS

What are some ways to ensure that what you put on the internet is safe, protected, and "yours"?
Is it ethical to copy an image off of someone else's web page without permission and then use it on your own?

You found an image online and you really like it. You decided to save the item and put it up online for your friends to look at. Are you violating anything in anyways?

What are some copyright issues that could happen when writing a webpage and how can you avoid this as well as preventing having your own information stolen?

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Does the code `` constitute a copyright issue?

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Does the code `` after copying the file from `remotesite.com` to your own site constitute a copyright issue?

What is a common way that users keep others from stealing their images on the web?

EMAIL

What does MIME stand for?

What is MIME?

What is SMTP?

How are messages sent through email? What about attachments?

What is the most common type of code for sending email?

MISCELLANEOUS

How many bits are in a byte?

What is the size, in pixels, of a `favicon.ico` file?

Give two real-world examples of a favicon.

What does it mean when a URL ends in `.jp`?

A piece of text stored on your computer by a Web site containing information about your preferences is called what?

What is rule #34?

Please write the number 127 in binary.

What is a factorial? What is $5!$?

In a computer graphics image, where is pixel `<0,0>` located?

True or False: There is a single authority that controls the Internet.

True or False: The Internet sees censorship as damage and routes around it.

What does CSS stand for?

What does SVG stand for?

Describe the difference between active and passive digital data storage.

What is anti-aliasing?

The _____ maps the URLs onto IP Addresses. (There are 13 worldwide)

What type of picture file supports transparency and simple animations?

How many end points does one Bézier curve have?

In a client side image map what is the circle radius, in pixels, from:

```
<AREA SHAPE="CIRCLE" COORDS="9, 8, 7" HREF="...">
```