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Boot sector viruses

As virus creators got more sophisticated, they learned new tricks. One important trick was the ability to load viruses into memory so they could keep running in the background as long as the computer remained on. This gave viruses a much more effective way to replicate themselves. Another trick was the ability to infect the **boot sector** on floppy disks and hard disks. The boot sector is a small program that is the first part of the operating system that the computer loads. The boot sector contains a tiny program that tells the computer how to load the rest of the operating system. By putting its code in the boot sector, a virus can guarantee it gets executed. It can load itself into memory immediately, and it is able to run whenever the computer is on. Boot sector viruses can infect the boot sector of any floppy disk inserted in the machine, and on college campuses where lots of people share machines they spread like wildfire.

In general, both executable and boot sector viruses are not very threatening any more. The first reason for the decline has been the huge size of today's programs. Nearly every program you buy today comes on a compact disc. Compact discs cannot be modified, and that makes viral infection of a CD impossible. The programs are so big that the only easy way to move them around is to buy the CD. People certainly can't carry applications around on a floppy disk like they did in the 1980s, when floppies full of programs were traded like baseball cards. Boot sector viruses have also declined because operating systems now protect the boot sector.

Both boot sector viruses and executable viruses are still possible, but they are a lot harder now and they don't spread nearly as quickly as they once could. Call it "shrinking habitat," if you want to use a biological analogy. The environment of floppy disks, small programs and weak operating systems made these viruses possible in the 1980s, but that environmental niche has been largely eliminated by huge executables, unchangeable CDs and better operating system safeguards.

Early Cases: Executable Viruses

Early viruses were pieces of code attached to a common program like a popular game or a popular word processor. A person might download an infected game from a bulletin board and run it. A virus like this is a small piece of code embedded in a larger, legitimate program. Any virus is designed to run first when the legitimate program gets executed. The virus loads itself into memory and looks around to see if it can find any other programs on the [disk](#). If it can find one, it modifies it to add the virus's code to the unsuspecting program. Then the virus launches the "real program." The user really has no way to know that the virus ever ran. Unfortunately, the virus has now reproduced itself, so two programs are infected. The next time either of those programs gets executed, they infect other programs, and the cycle continues.

If one of the infected programs is given to another person on a floppy disk, or if it is uploaded to a bulletin board, then other programs get infected. This is how the virus spreads.

The spreading part is the infection phase of the virus. Viruses wouldn't be so violently despised if all they did was replicate themselves. Unfortunately, most viruses also have some sort of destructive attack phase where they do some damage. Some sort of trigger will activate the attack phase, and the virus will then "do something" -- anything from printing a silly message on the screen to erasing all of your data. The trigger might be a specific date, or the number of times the virus has been replicated, or something similar.

Types of Infection

When you listen to the news, you hear about many different forms of electronic infection.

The most common are:

Viruses - A virus is a small piece of software that piggybacks on real programs. For example, a virus might attach itself to a program such as a spreadsheet program. Each time the spreadsheet program runs, the virus runs, too, and it has the chance to reproduce (by attaching to other programs) or wreak havoc.

E-mail viruses - An e-mail virus move around in e-mail messages, and usually replicates it by automatically mailing itself to dozens of people in the victim's e-mail address book.

Worms - A worm is a small piece of software that uses computer networks and security holes to replicate itself. A copy of the worm scans the network for another machine that has a specific security hole. It copies itself to the new machine using the security hole, and then starts replicating from there, as well.

Trojan horses - A Trojan horse is simply a computer program. The program claims to do one thing (it may claim to be a game) but instead does damage when you run it (it may erase your hard disk). Trojan horses have no way to replicate automatically.

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SU-DO-KU Puzzle:

8			1		5			3
2		1				8		5
		3		7		1		
	9						8	
7			4		8			9
		2				4		
	2			5			6	
	6	8				5	3	
		4		8		2		

ANSWERS:

8	4	9	1	2	5	6	7	3
2	7	1	6	4	3	8	9	5
6	5	3	8	7	9	1	4	2
4	9	6	5	3	2	7	8	1
7	1	5	4	6	8	3	2	9
3	8	2	7	9	1	4	5	6
1	2	7	3	5	4	9	6	8
9	6	8	2	1	7	5	3	4
5	3	4	9	8	6	2	1	7

The story of an IT giant

Google began as a research project in January, 1996 by Larry Page and Sergey Brin, two Ph.D. students at Stanford University, California. They hypothesized that a search engine that analyzed the relationships between websites would produce better results than existing techniques (existing search engines at the time essentially ranked results according to how many times the search term appeared on a page). It was originally nicknamed "BackRub" because the system checked back links to estimate a site's importance. A small search engine called RankDex was already exploring a similar strategy.

Convinced that the pages with the most links to them from other highly relevant web pages must be the most relevant pages associated with the search, Page and Brin tested their thesis as part of their studies, and laid the foundation for their search engine. Originally the search engine used the Stanford University website with the domain google.stanford.edu. The domain google.com was registered on September 14, 1997, and the company was incorporated as Google Inc. on September 7, 1998 at a friend's garage in Menlo Park, California.

In March, 1999, the company moved into offices at 165 University Avenue in Palo Alto, home to several other noted Silicon Valley technology startups. After quickly outgrowing two other sites, the company settled into their current home in a complex of buildings in Mountain View at 1600 Amphitheatre Parkway, in 2003. The complex has since become known as the Googleplex. Silicon Graphics leased the buildings to Google.

The Google search engine attracted a loyal following among the growing number of Internet users. They were attracted to its simple, uncluttered, clean design, a competitive advantage to attract users who did not wish to enter searches on web pages filled with visual distractions.. In 2000, Google began selling advertisements associated with search keywords. This strategy was important for increasing advertising revenue, which is based upon the number of hits users make upon ads. The ads were text-based in order to maintain an uncluttered page design and to maximize page loading speed. Keywords were sold based on a combination of price bid and clickthroughs, with bidding starting at \$.05 per click. While many of its dot-com rivals failed in the new Internet marketplace, Google quietly rose in stature while generating revenue.

Every Google engineer is encouraged to spend 20 percent (20%) of their work time on projects that interest them. Some of Google's

newer services, such as Gmail, Google News and orkut, originated from these independent endeavors. In a talk at Stanford University, Marissa Mayer, Google's Vice President of Search Products and User Experience, stated that her analysis showed that half of new product launches originated from 20% time.

Even an ant species has been named in honor of Google. *Proceratium Google*, also known as the Google ant, was discovered in Madagascar by Dr. Brian L. Fisher, Associate Curator of Entomology at the California Academy of Sciences. Fisher named the ant after the search engine Google, as a tribute to the usefulness of Google Earth in his research.

V. Iswarrya
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Digital Photography Glossary

Struggling with a word or phrase? You're not alone. Photography has long had its own language, and digital photography adds many new terms. This glossary defines commonly used words and phrases in digital photography.

Ambient light the natural light in a scene.

Archival The ability of a material, including some printing papers and compact discs, to last for many years.

Aperture A small, circular opening inside the lens that can change in diameter to control the amount of light reaching the camera's sensor as a picture is taken. The aperture diameter is expressed in f-stops; the lower the number, the larger the aperture. For instance, the aperture opening when set to f/2.8 is larger than at f/8. The aperture and shutter speed together control the total amount of light reaching the sensor. A larger aperture passes more light through to the sensor. Many cameras have an aperture priority mode that allows you to adjust the aperture to your own liking. See also *shutter speed*.

Application A computer program, such as an image editor or image browser.

Buffer Memory in the camera that stores digital photos before they are written to the memory card.

Burning Selectively darkening part of a photo with an image editing program.

CCD Charge Coupled Device: one of the two main types of image sensors used in digital cameras. When a picture is taken, the CCD is struck by light coming through the camera's lens. Each of the thousands or millions of tiny pixels that make up the CCD converts this light into electrons. The number of electrons, usually described as the pixel's accumulated charge, is measured, and then converted to a digital value. This last step occurs outside the CCD, in a camera component called an analog-to-digital converter.

CD-R CD-Recordable: a compact disc that holds either 650 or 700 MB of digital information, including digital photos. Creating one is commonly referred to as *burning a CD*. A CD-R disc can only be written to once, and is an ideal storage medium for original digital photos.

CD-RW CD-Rewritable: similar in virtually all respects to a CD-R, except that a CD-RW disc can be written and erased many times. This makes them best suited to many backup tasks, but not for long term storage of original digital photos.

CMOS Complementary Metal-Oxide Semiconductor: one of the two main types of image sensors used in digital cameras. Its basic function is the same as that of a CCD. CMOS sensors are currently found in only a handful of digital cameras.

CMYK Cyan, Magenta, Yellow, Black. The four colors in the ink sets of many photo-quality printers. Some printers use six ink colors to achieve smoother, more photographic prints. The two additional colors are often lighter shades of cyan and magenta.

Compact Flash a common type of digital camera memory card, about the size of a matchbook. There are two types of cards, Type I and Type II. They vary only in their thickness, with Type I being slightly thinner. A Compact Flash memory card can contain either flash memory or a miniature hard drive. The flash memory type is more prevalent.

History Of Microsoft

In 1983 Microsoft announced its development of Windows, a graphical user interface (GUI) for its own operating system (MS-DOS) that had shipped for IBM PC and compatible computers since 1981. Microsoft modeled the GUI, which was first known as Interface Manager, after that of Apple's Mac OS. Bill Gates had been shown a Macintosh prototype by Steve Jobs early in its development, around 1981, and Microsoft was partnered by Apple to create some of the important early Mac software, such as Word and Excel.

The first independent version of Microsoft Windows, version 1.0, released in 1985, lacked a degree of functionality and achieved little popularity. Windows 1.0 did not provide a complete operating system, but rather extended MS-DOS and shared the latter's inherent flaws and problems. Moreover, the programs that shipped with the early version comprised "toy" applications with little or limited appeal to business users.

Success with Windows 3.0

Microsoft Windows scored a serious success with Windows 3.0, released in 1990. In addition to improved capabilities given to native applications, Windows also allowed a user to better multitask older MS-DOS based software compared to Windows/386, thanks to the introduction of virtual memory and of loadable VxDs. It made PC compatibles serious competitors to the Apple Macintosh. This benefited from the improved graphics available on PCs by this time (by means of VGA video cards), and the Protected/Enhanced

mode which allowed Windows applications to use more memory in a more painless manner than their DOS counterparts could. Windows 3.0 could run in any of Real, Standard or 386 Enhanced modes, and was compatible with any Intel processor from the 8086/8088 up to 8r0286 & 80386. Windows tried to auto detect which mode to run in, although it could be forced to run in a specific mode using the switches: /r (real), /s (standard) and /3 (386) respectively.

General Tips to Overcome an Interview

So what if you are not a mountaineer. Or a keen hiker. You still cannot treat your interview like a careless morning trot along a jogger's path. Your jaw-jaw at the interview table is nothing less than a cautious climb up a mountain trail--which begins around your early childhood and meanders through the years at the academia before reaching a new summit in your career. And as you retrace your steps down memory lane make sure that you post flags at important landmarks of your life and career, so that you can pop them before the interview panel scoops them out of you. You don't want to be at the receiving end, do you?

Face the panel, but don't fall of the chair in a headlong rush-and-skid attempt to tell your story. Take one step at a time. If you place your foot on slippery ground, you could be ejecting out on a free fall.

So prepare, fortify your thoughts, re-jig your memory, and script and design your story (without frills and falsity). Without the right preparation and storyboard, you could be a loser at the interview. Here are a few preparation tips that books on interviews sometimes overlook.

Before the interview

1. **Chronological Outline of Career and Education** Divide your life into "segments" defining your university, first job, second job. For each stage, jot down :

The reason for opting certain course or profession; Your job responsibilities in your previous/current job; Reason of leaving your earlier/current job. You should be clear in your mind where you want to be in the short and long term and ask yourself the reason why you would be appropriate for the job you are being interviewed for and how it will give shape to your future course.

2. **Strengths and Weaknesses**

You should keep a regular check on your strengths and weaknesses. Write down three (3) technical and three (3) non-technical personal strengths. Most importantly, show examples of your skills. This proves more effective than simply talking about them. So if you're asked about a general skill, provide a specific example to help you fulfill the interviewer's expectations. It isn't enough to say you've got "excellent leadership skills". Instead, try saying:

"I think I have excellent leadership's skills which I have acquired through a combination of effective communication, delegation and personal interaction. This has helped my team achieve its goals."

As compared to strengths, the area of weaknesses is difficult to handle. Put across your weakness in such a way that it at least seems to be a positive virtue to the interviewer. Describe a weakness or area for development that you have worked on and have now overcome.

3. **Questions you should be prepared for**

Tell us about yourself.

What do you know about our company?

Why do you want to join our company?

What are your strengths and weaknesses?

Where do you see yourself in the next five years?

How have you improved the nature of your job in the past years of your working? Why should we hire you?

What contributions to profits have you made in your present or former company? Why are you looking for a change?

Answers to some difficult questions:

Tell me about yourself?

Start from your education and give a brief coverage of previous experiences. Emphasize more on your recent experience explaining your job profile.

What do you think of your boss?

Put across a positive image, but don't exaggerate.

Why should we hire you? Or why are you interested in this job?

Sum up your work experiences with your abilities and emphasize your strongest qualities and achievements. Let your interviewer know that you will prove to be an asset to the company.

How much money do you want?

Indicate your present salary and emphasize that the opportunity is the most important consideration.

Do you prefer to work in a group?

Be honest and give examples how you've worked by yourself and also with others. Prove your flexibility.

4. [Questions to As](#)

At the end of the interview, most interviewers generally ask if you have any questions. Therefore, you should be prepared beforehand with 2-3 technical and 2-3 non-technical questions and commit them to your memory before the interview.

Do not ask queries related to your salary, vacation, bonuses, or other benefits. This information should be discussed at the time of getting your joining letter. Here we are giving few sample questions that you can ask at the time of your interview.

Sample Questions

Could you tell me the growth plans and goals for the company?

What skills are important to be successful in this position?

Why did you join this company? (Optional)

What's the criteria your company uses for performance appraisal?

With whom will I be interacting most frequently and what are their responsibilities and the nature of our interaction?

What is the time frame for making a decision at this position?

What made the previous persons in this position successful/unsuccessful?

5. Do your homework

Before going for an interview, find out as much information on the company (go to Jobs Ahead Company Q and A) as possible. The best sources are the public library, the Internet (you can check out the company's site), and can even call the company and get the required information. The information gives you a one-up in the interview besides proving your content company or position.

Clearing the interview isn't necessarily a solitary attempt. Seek assistance from individuals who are in the profession and whose counsel you value most. Be confident in your approach and attitude; let the panel feel it through your demeanor, body language and dressing.

Getting prepared for your interview is the best way to dig deep and know yourself. You will be surprised that it would breed a new familiarity become more familiar with your own qualifications that will be make you present yourself better. All the best and get ready to give a treat.

Bjarane Stroustrup



Bjarne Stroustrup

Bjarne Stroustrup (born June 11, 1950 in Aarhus, Denmark) is a computer scientist and the College of Engineering Chair Professor of Computer Science at Texas A&M University. He is most notable for developing the C++ programming language. A rough english attempt at pronunciation of his name would sound like "B-yar-ne Strov-stoop".

Stroustrup, in his own words, "*invented C++, wrote its early definitions, and produced its first implementation... chose and formulated the design criteria for C++, designed all its major facilities, and was responsible for the processing of extension proposals in the C++ standards committee.*"

Stroustrup also wrote what many consider to be the standard introductory text to the language, *The C++ Programming Language*, which is now in its third edition. The text has been revised twice to reflect the evolution of the language and the work of the C++ standards committee.

Stroustrup is *cand. scient.* (the Danish equivalent to a master's degree) in mathematics and computer science (1975) from the University of Aarhus, Denmark, and Ph.D. in computer science (1979) from the University of Cambridge, England. He formerly worked as the head of AT&T Lab's Large-scale Programming Research department, from its creation until late 2002.

Awards & accomplishments

- 1990 - Named one of "America's twelve top young scientists" by *Fortune Magazine*.
- 1993 - ACM (Association for Computing Machinery) Grace Murray Hopper Award for early work on C++.
- 1995 - *Byte magazine* named Stroustrup one of the 20 most influential people in the computer industry.
- 1996 - Stroustrup was named an AT&T Fellow: "For fundamental contributions to the development of computer languages and object-oriented programming, culminating in the C++ programming language."
- 2004 - National Academy of Engineering, 2004
- 2004 - IEEE Computer Society 2004 Computer Entrepreneur Award

Computer scientists known by their first names

A few people in the computer industry are more often referred to by their first names, instead of their full names, by others in the tight-knit computer science community.

- Bill Gates, co-founder and former CEO of Microsoft: Known as **Bill**, but only in adoration or derision.
- Guido van Rossum, inventor of the Python programming language: Known as **Guido**.
- Bjarne Stroustrup, inventor of the C++ programming language: Known as **Bjarne**.
- Ken Thompson, inventor of the Unix operating system: Known as **ken** (lowercase).
- Linus Torvalds, inventor of the Linux operating system: Known as **Linus**.