



Senior Quiz Prelims

26 November 2016

# Rules

This quiz consists of 20 questions, all of which have either one-word, or one-phrase answers.

You have been provided with 30 minutes to attempt this quiz.

Star (\*) marked questions will serve as tie-breakers.

Fill in your answers in the answer that sheet that has been provided to you.

All the best!

# 1

Developed at the University of California, Berkeley in the late 1980s, X is a data storage and virtualisation technology which combines multiple disk drive components into single units, for reducing data redundancy and improving performance. On introducing X as a theoretical concept in 1988, the developers of X argued that it could “easily improve upon the reliability offered by large single drives.” Today, X is the most widely used technology for organising server hardware, in data centers. As of today, there are seven standard variants of X, each differing in reliability, performance and capacity, though compound variants have also come in use.

Identify X.

## 2

X is an artificial intelligence researcher and the founder of Comma.ai, a vehicle automation company. As part of his work, in 2016 X developed a self-driving Honda Acura all by himself, and was reportedly offered \$12 million by Elon Musk to sell his technology to Tesla Motors and replace their existing technology used in Tesla's vehicles. Prior to his work in this industry, X was one of the most talented hackers in the world, having won the DEFCON CTF tournament twice, and also hacked into the Sony Playstation 3, which led to a lawsuit by Sony against him. However, X is most well known for being the person behind Y - a 'hack' he came up with as a 17 year old - a hack that subsequently became extremely commonplace.

Identify X and Y.

# 3

X is a Swedish manufacturer of medium format cameras and photographic equipments, headquartered in Gothenburg, Sweden. Founded by a person of the same name, X's biggest claim to fame was being the camera equipment provider for the Apollo 11 mission, the first spaceflight that landed on the moon. Since 2012, X has been marketing redesigned versions of Sony's digital cameras.

Identify X.

# 4

The first X were held in 1990 - fittingly, by the Turing Institute of Scotland at Glasgow - inside the indoor gym of the University of Strathclyde. A total of 68 participants represented thirteen nations - and the final medal tally saw England in the distant lead with 22 gold medals, while Scotland and the USA finished second and third with 16 and 5 gold medals, respectively. Interestingly, India also had representation - a singular bronze medal awarded to Ashish Panwar of the City Montessori school, Lucknow.

What is being talked about?

5



Advertisement for what?

6



Philanthropic arm of what company?



# 7

At the pre-release press conference for a certain movie released in early 2016, X said :

“Y was originally created to appeal to women and couples I had wanted to change the image of the game center as it was in those days: dark, dingy, smelly and full of single men. He was cute, and his energy source was cookies which made him fun and accessible. I had hoped the movie would keep that trait.”

X added that he made only one request to the director : “Don’t let him turn into something cruel. It would totally go against the concept.”

The director honored X’s request - Y eats up buildings and tears up streets in the film, but refrains from harming any humans.

Identify X and Y.

# 8

In December 2015, Ionis Pharmaceuticals (then called X Pharmaceuticals) announced their decision to migrate to the name 'Ionis' - which, many stock market analysts felt - was because of how their previous name, and negative connotations associated with it on social media, were impacting their share price. Trading under the name X - Ionis had seen repeated falls in stock prices in the previous months, in reaction to events that were in no direct way relevant to their industry.

What is X?

# 9

X, a subsidiary of Oracle, is an Internet performance management company, and offers products to monitor, control and optimise online infrastructure along with domain registration services and email products. In 2016, X was the subject of a massive DDoS attack (claimed by Anonymous), which made major Internet platforms like Twitter, Reddit, Tumblr etc unavailable to large areas of Europe and North America. With a load averaging 1.2 terabits per second, it is the largest DDoS attack in history.

Identify X.

# 10

“X includes several convenient features, some of them including:

1. No floating point numbers, only integers.
2. All numbers must be strictly greater than 1 million
3. There are no import statements allowed. All code has to be home-grown.
4. Instead of True and False, we have the keywords Fact and Lie
5. Our language will automatically correct Forbes' \$4.5B to \$10B
6. The language is completely case insensitive.
7. Easy to type with small hands”

What is X?

# 11

Much similar to Facebook's Free Basics, Wikimedia Foundation developed a program called Wikipedia Zero, partnering with local telecom operators to offer free access to Wikipedia and related sites. Both these programs rolled out in Angola early this year - but ran into problems instantly, not because of any governmental bans due to the violation of net neutrality, but due to Angolans exploiting a certain loophole in this entire construct and virtually building a free of cost, clandestine, file sharing network. This problem has even prompted talks of Facebook and Wikipedia Zero exiting the country - although they say that 'they do not want to enter into a game of whack-a-mole'.

What loophole?

# 12

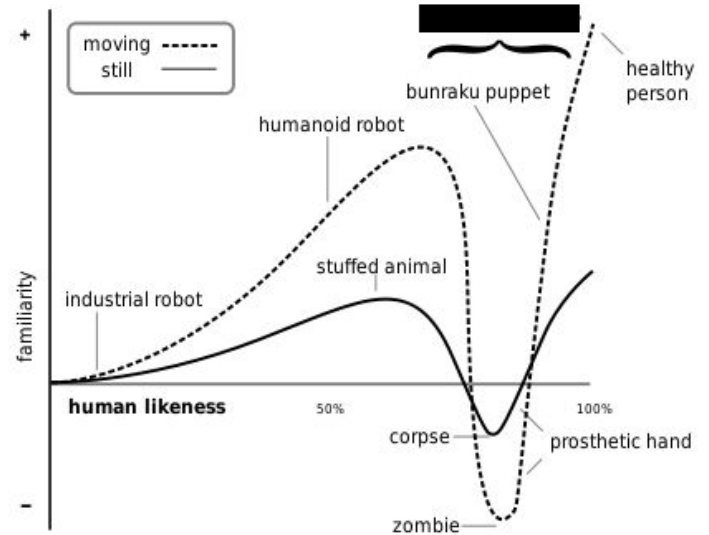
A number of Xs exist across the world today - disproportionately so in the Silicon Valley - and thus, Brent Holliday, CEO of Vancouver-based Garibaldi Capital Advisors coined the alternative term 'Y' in 2014 to describe the exact same thing that X does - a certain class of technology companies - however, focusing only on the Canadian side of things. His reasoning was simple : "I understood the Y's horn was to break through the ice because they're mammals and have to breathe, so that's a great metaphor - and unlike the Xs, they actually do exist."

Identify X and Y.

# 13

The X is a hypothesis in the field of aesthetics which holds that when features look and move almost, but not exactly, like natural beings, it produces a response of repulsion among some observers. The term refers to the dip in the graph of the comfort level of people in viewing/observing animation against how 'life-like' the animation appears to be. An example is the movie 'The Polar Express', which garnered negative reviews from audiences because they found the animation to be 'so real, it was eerie'.

What term?



14

If you've been lucky, you've been staring at this logo a lot recently.



What is this company the world's largest manufacturer of?



# 15

X Labs, founded in 1949, is an American manufacturer of handcrafted high-end audio equipment based in Binghamton, New York. The story of its tussle with the worldwide-recognised brand Y is a complex one : Y was intentionally spelled with an extra 'a' to differentiate it from Xs audio products. However, the trademark for Y was initially denied as X and Y are phonetically identical. In 1982, since the Y team had become attached to the name - Z - famous for being extremely persuasive - wrote a letter to X Labs hoping to get permission or a licensing arrangement. Although, X Labs rejected the request, in 1983 a license and trademark for the name Y was secured.

Identify X, Y and Z

# 16

## Algorithm for what?

Input: integer  $n > 1$ .

1. Check if  $n$  is a **perfect power**: if  $n = a^b$  for integers  $a > 1$  and  $b > 1$ , output *composite*.
2. Find the smallest  $r$  such that  $\text{ord}_r(n) > (\log_2 n)^2$ . (if  $r$  and  $n$  are not coprime, then skip this  $r$ )
3. For all  $2 \leq a \leq \min(r, n-1)$ , check that  $a$  does not divide  $n$ : If  $a|n$  for some  $2 \leq a \leq \min(r, n-1)$ , output *composite*.
4. If  $n \leq r$ , output *prime*.
5. For  $a = 2$  to  $\left\lfloor \sqrt{\varphi(r) \log_2(n)} \right\rfloor$  do  
    if  $(X+a)^n \neq X^n + a \pmod{X^r - 1, n}$ , output *composite*;
6. Output *prime*.

Here  $\text{ord}_r(n)$  is the **multiplicative order** of  $n$  modulo  $r$ ,  $\log_2$  is the **binary logarithm**, and  $\varphi(r)$  is **Euler's totient function** of  $r$ .

# 17

For decades, the people who live near the Hollywood sign have been trying to fight off the nearly constant stream of sightseers - initially by placing made-up signboards saying that the area was restricted and create physical barriers using boxes and general construction debris.

However, in recent years - in response to the digital age - the residents have slightly altered their tactics in the fight against tourists trying to get a glimpse of the famed sign.

What has resulted?

# 18

Connect : Zarya, Unity, Zvezda, Destiny, Quest, Pirs and Poisk, Harmony, Tranquility, Columbus, Kibo, Cupola, Rassvet, Leonardo, BEAM.

# 19

X code is a pejorative phrase for source code that has a complex and tangled control structure, especially one using many GOTO statements, exceptions, threads, or other "unstructured" branching constructs. It is named such because program flow in these cases is conceptually like X, i.e. twisted and tangled. X code can be caused by several factors, such as continuous modifications by several people with different programming styles over a long life cycle.

Identify X.

20

What is happening here?

