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CODECHEF-VIT NEWSLETTER

COMPETITIVE EDGE

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TOP NEWS IN TECH

Watch out for Agent Smith, the latest malware to creep onto Android Phones

Rajat Sablok
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In the classic Matrix Trilogy, it is Agent Smith who perfectly defines who humans really are– "A race that moves on to an area and multiplies until all resources are consumed". But today, Agent Smith is the real virus. Researchers at Check Point Research have discovered a piece of Android malware that has affected over 25 million devices worldwide!

Agent Smith is not like other malwares– it does not steal users' data. Instead, it hacks other applications, usually WhatsApp & Flipkart, blocks certain portion of their code to avoid them from being updated, and bombards the device with ads, thus generating credit for its developer.

According to Check Point Research, Agent Smith developers, or rather hackers, used the infamous third-party app store 9Apps as the distribution platform for the adware. The actual attacks began from May 2018 and continued till April 2019. Hackers are still trying to build an even 'better' update for the malware.

Reports indicate that over 25 million devices have been affected by Agent Smith worldwide, with over 15 million devices in India. The malware seems to be concentrated in regions of Asia Pacific, the major exception being US with over 300,000 affected devices.

Evidence showed that Agent Smith hackers are trying to increase the penetration rate by deploying infected applications on the Google Play Store. The infected applications have now been taken down from the Play Store.

Although the hackers decided to use Agent Smith to make illegal money out of it, the malware can be used by someone else to extract sensitive information from a device. It is advised not to use third-party sources for downloading applications and to always keep an antivirus installed.

INTERVIEW Q & A

Q. What are the different storage classes in C ?

There are four types of storage classes in C. They are extern, register, auto and static.

Q. Differences between C and Java?

1. JAVA is Object-Oriented while C is procedural.

2. Java is an Interpreted language while C is a compiled language.

3. C is a low-level language while JAVA is a high-level language.

4. C uses the top-down approach while JAVA uses the bottom-up approach.

5. Pointer go backstage in JAVA while C requires explicit handling of pointers.

6. The Behind-the-scenes Memory Management with JAVA & The User-Based Memory Management in C.

7. JAVA supports Method Overloading while C does not support overloading at all.

8. Unlike C, JAVA does not support Preprocessors, & does not really them.

9. The standard Input & Output Functions—C uses the printf & scanf functions as its standard input & output while JAVA uses the System.out.print & System.in.read functions.

10. Exception Handling in JAVA And the errors & crashes in C.

Q. Tell how to check whether a linked list is circular.

Create two pointers, each set to the start of the list. Update each as follows:

```
while (pointer1) {
pointer1 = pointer1->next;
pointer2 = pointer2->next; if (pointer2) pointer2=pointer2->next;
if (pointer1 == pointer2) {
print ("circular\n");
}
}
```

#What's Trending

Top 10 trending Hashtags on Instagram

1. #science
2. #android
3. #mobile
4. #design
5. #innovation
6. #cloud
7. #gadget
8. #electronics
9. #techtrends
10. #technews

Top trending Google searches

1. Job Hunting
2. Nintendo Switch
3. Abiogenesis
4. Ebola virus disease
5. Fortnite
6. Robotic vacuum cleaner
7. ClimaCell
8. Glitch (vela pulsar)
9. Moon
10. Genomics

BLOG RECAP: Articles from our members

“Astrobiology is not about looking for little green men “ -Lewis Dartnell

Shashank Kesharwani
Core Committee member

Astrobiology is a science that branches our perspective on biology to include other worlds. It includes the study of evolutionary adaptions to extreme environment on earth as well as a chance for life to develop on other planets as well . As there is a combination of astronomy and biology, astrobiology also has a widespread fame.

It brings a multi-dimensional approach to biology, as it is Comparing our planet with other potential bodies of life.

Most life today is vastly microbial whether it is measured by biomass or chemical interaction with the atmosphere. And if we were to find life on other planets it would be the microbes and not “little green men”.

The most recent expedition regarding the outer communication is the launch of Chandrayaan 2. It would be the first of its kind to land on the south pole of the moon which could be a basis for the formation of human colony in space.

There are certain conditions in which a microbe could live if it possesses sexual reproduction. It is a way of combining genes from two parents, hence ensuring that diversity with the population is maintained. Being multicellular helps to manufacture genetic information for multiple types of cells within its germ cell.

Within our Solar System, Mars could be the planet most likely to support life. It is estimated that it contains fossil microbes that lived for several billion years as its climate was different as it had a thicker atmosphere and liquid water on its surface.

Astronomists have discovered the prospect for life in distant planetary system which could be an idea of a habitable zone.

The habitat zones are easily detected using the current technology but will be habitable within a decade or so. The mission ‘Kepler’ is designed to determine the frequency of possibility of terrestrial planets within habitable zone of Solar type -stars.

Even if the planet is within the habitable zone doesn’t ensure that it is inhabited. An optimistic SETI program could detect signals broadcast by technical civilization in the galaxy. Evolution in the wide context of evolving universe is the coupling co-evolution of life with its host planets.

Resources to help you out

This issues's domain:
Machine Learning

Courses

Introduction to ML problem framing(google)

AI: Principles and techniques (Stanford university)

CS405: AI from Saylor academy

AI course at edX

ML at coursera

AI course from MIT

YouTube Channels

Sentdex

Sirajology

Data school

Giant Neural network

Welch labs

Did you Know ?

The first personal computer was created by Berkeley Enterprises. Affectionately referred to as Simon, it sold for a pricey $300 in 1950.

How facial recognition technology is redefining biological data.

Anmol Pant
Core Committee member

Anyone who is into tech, TV shows and Hollywood movies, might've seen facial recognition software in action.

Facial recognition Is a biometric software application capable of distinctly identifying an individual by registering and then making comparisons based on ones facial features and contours.

Humans, as a species have always had the ability to recognize and differentiate between faces since the beginning of time, yet computers only recently have shown the same ability. Facial recognition works on the idea that every face has approximately 80 distinguishable landmarks known as 'nodal points'. These nodal points are mapped and represented as a distinct numerical code , called a faceprint. Hence, each individual has a unique faceprint making it almost impossible for a person to emulate someone else.

The prime reason why facial recognition has rightly been addressed as 'a breakthrough' in the field of biometric security and biological data collection can be attributed to the fact that contrary to it's conventional counterpart, ie. the thumbprint recognition systems, it is non- contact in nature. Face images can be analyzed and captured from a proximity and since there is no direct interaction with the system whatsoever, it gives facial recognition the edge over other biometric based systems, be it in the field of security or criminal investigation where facial features are mapped from a photograph or video and compared to a database of known faces to find a match.

Akin to every other technological advancement, facial recognition too comes with it's fair share of disadvantages. Often it's effectiveness and accuracy depends on external factors; the most crucial variable being - lighting. Insufficient or improper lighting can render the system useless or lead it to form an inaccurate faceprint. Moreover, as no direct human contact is necessary to map the faceprint of an individual, it comes with it's own share of ethical and privacy issues as cases where security cameras were being used to form non- consensual faceprints of individuals begin to surface.

However, as of now, the advantages far outweigh the disadvantages; but whether or not the scenario remains unchanged, is entirely in our own hands.

BLOG RECAP: Articles from our members

“Rocket Lab working on a reusable booster”

Damayanti Chattopadhyay
Core Committee member

Rocket Lab, a small-satellite launch firm, has recently put forth the idea of recovering the core booster of its Electron rocket using a helicopter. Certainly, this step is a bold cost cutting move, which, when implemented, can make this company the second company to reuse an orbital-class rocket booster.

According to an article of ‘The Hindu’, Electron, which has flown seven mission so far, can send up to 225 kg into space for roughly $7 million. Medium-class launchers such as Los Angeles-based Relativity space can send up to 1000 kg into space for $10 million while Texas-based firm Firefly can do it for $15 million.

> Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.
>
> **- Stephen Hawking**

Peter Beck, Rocket Lab’s founder and CEO, had announced of this decision on August 6th, at the Small Satellite Conference at Utah State University in Logan, Utah.

The measures that were taken by Elon Musk’s SpaceX was certainly different than what Rocket Lab has in store. In case of the steps taken by SpaceX, the returning rockets land vertically after slowing their descents propulsively, Rocket Lab’s Electron will have its first stages relying on parafolis to slow down and an enhanced thermal-protection system to endure the heat of re- entry. The Electron boosters won’t land- they will be plucked out of the sky by a helicopter.

Peter Beck had concluded saying, “The grand goal here is, if we can capture the vehicle in wonderful condition, in theory we should be able to put it back on the pad, charge it up and go again.”

The primary aim of this step is to increase production by multiple folds. Even if the booster is reused once, it can help in doubling the production.

CODECHEF-VIT's UPCOMING EVENTS

Hey ,Guys! Gravitas is almost here. Registered for workshops? If not, register as soon as possible else you won't get to participate in your favourite workshops as the seats are filling fast.

Confused seeing so many events?
CodeChef-VIT brings you a wide variety of interesting events and workshops in various domains for you to learn.

1) Blitz-Designer Canvas

Designing is an integral part of IT industry. In this workshop participants will be taught to express their creativity using Adobe illustrator and Adobe XD. A contest will also be conducted that will give the participants an opportunity to showcase their skills. There will be goodies for every participant. **Mr. Chetan KVS, Product Designer at Unacademy** will be present there as our speaker and Judge

Date: 8th September Registration fee: Rs. 200

2) Building Functional Web Apps

Web Applications have gained a lot of importance in the recent years. As you have already learnt designing, use your creativity and knowledge to develop interactive and useful Web Applications. You get an opportunity to learn from the experts in these domains. Grab the opportunity as you may not get one again.

Date: 22nd September Registration fee: Rs. 150

3) Server Dev on the Cloud

Just designing won't help your Web App, it needs a properly designed backend. Learn backend development, web scraping and API development in this workshop. This is for the first time that a workshop on Server development is being conducted in Gravitas.

Date: 7th October Registration fee: Rs. 200

4) GameDev

Learning game development will set you apart from the other developers. With t he knowledge to develop Web Apps, Backend Development and Designing, Game development will help you build games for online platforms as well. Gaming Industry being one of the biggest industries you will get an opportunity to develop skills which only a few can own.

Date: 14th-15th September Registration fee: Rs. 250

5) Cook Off 5.0

Competitive coding competition on the official CodeChef platform. This competition is an open platform for computer geeks to test their skills and also a golden opportunity for freshers who haven’t had experience in competitive coding.

Date: 11th October Registration fee: Rs. 150

Register for all these events to make this Gravitas an experience of your life and learn to build up your