## CLOUD COMPUTING AND INFORMATION SECURITY

PowerPoint Presentation in

Second year B. Tech Information and Cybersecurity

## GROUP MEMBERS

- 20. Krishnaraj Thadesar (Presentation and Attacks)
- 15. Parth Zarekar (Cloud Computing Fundamentals)
- 09. Naman Soni (Best Practices)

## CCNTENTS



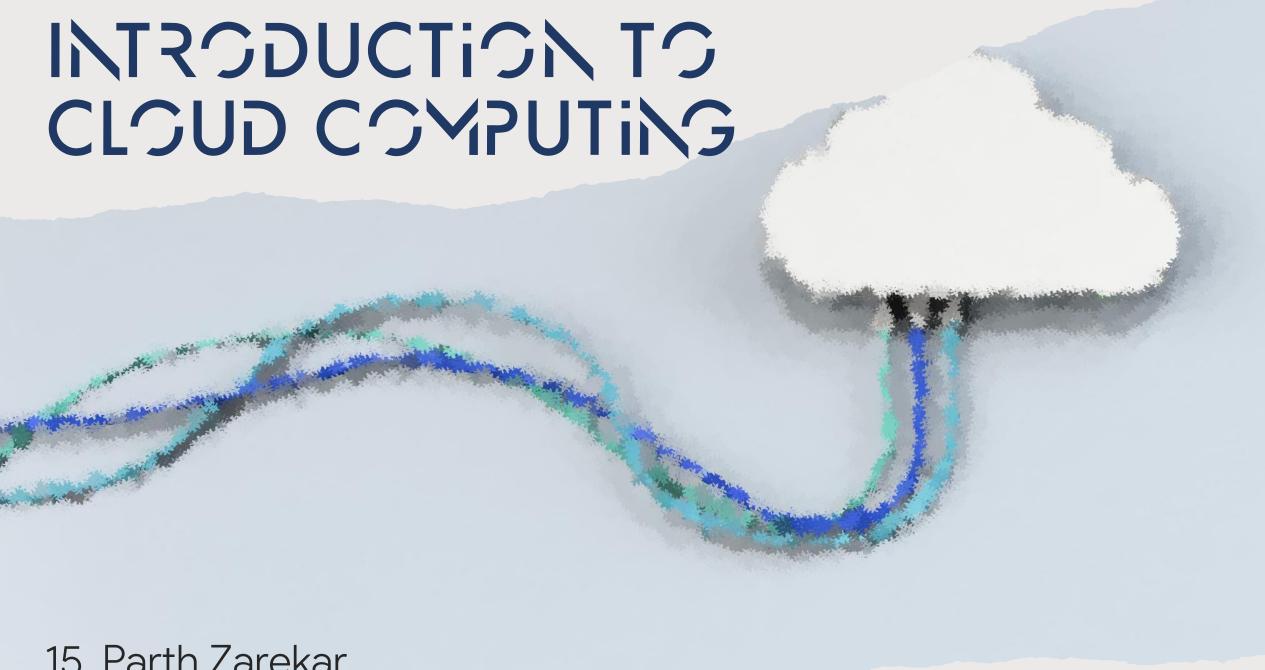












15. Parth Zarekar



# What is Cloud Computing

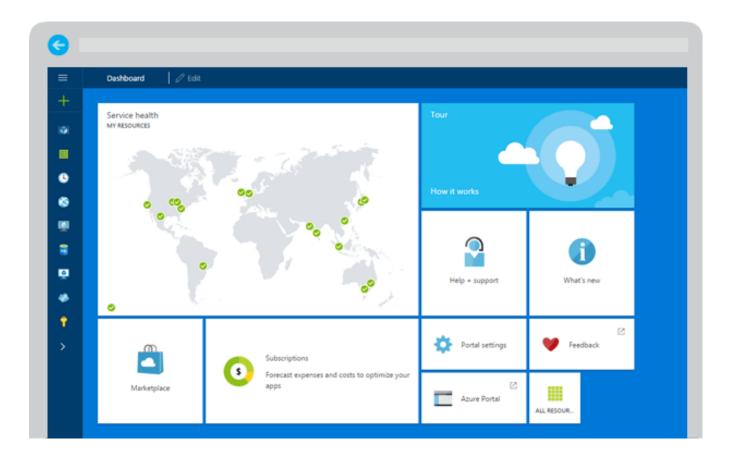
Cloud Computing is defined as storing and accessing of data and computing services over the internet. It doesn't store any data on your personal computer.

It is the on-demand availability of computer services like servers, data storage, networking, databases, etc. The main purpose of cloud computing is to give access to data centers to many users. Users can also access data from a remote server.

AYAILABLE
CLOUD
SERVICES ON
THE MARKET



#### Microsoft Azure



# 2. AMAZON WEB SERVICES (ANS)



#### **AWS Services**



#### Deployment & Management



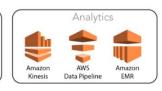




#### **Application Services**



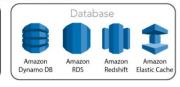


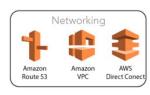


#### Foundation Services









# 3. GCCGLE CLCUD

## Google



Search Advertising SEM



Google Cloud Cloud Services, G Suite



Maps Mapping, Location Services & Logistics



Google Marketing
Platform
Unified Ad
Technology Stack



Google Analytics 360 Suite Data Analytics Suite of Tools



Android Mobile Operating System



Hardware Pixel, Chromecast, Google Home, Daydream View



YouTube Internet Video Service



Nest Connected Home Devices

# VEED FOR CLOUD SERVICES

# WE USED TO SPEND A SIGNIFICANT AMOUNT ON MAINTENANCE AND SETUP







# 4. We had to Share Files by Email, and other FAR LESS SECURE methods





#### Top 10 Frameworks for Web Application Development







4. Cost Savings!

# 5. SECURITY

# MITMICKS MEMINST GLOUD SERVICES

20. Krishnaraj Thadesar

# Types of Attacks

#### DATA BREACHES

This type of attack involves stealing or accessing sensitive data such as credit card information, intellectual property, or personal information that is stored on the cloud.

The attacker may exploit vulnerabilities in the cloud service provider's infrastructure, applications, or user accounts to gain access to the data.

### DENIAL-OF-SERVICE (DOS) ATTACKS

- A DoS attack is launched to disrupt or overwhelm the cloud service provider's infrastructure, making it unavailable to users. This is achieved by flooding the provider's servers or network with excessive traffic or requests, causing a slowdown or complete outage.
- a, modify configurations, or launch other types of attacks. This type of attack can be particularly damaging as the attacker already has access to the system and may know its vulnerabilities.

## MALWARE INJECTION

In this attack, the attacker exploits a vulnerability in the cloud infrastructure or applications to inject malware that can compromise the security of the entire system. This malware can then be used to steal data or launch further attacks.

# MAN-IN-THEMIDDLE (MITM) ATTACKS

- A MitM attack involves intercepting the communication between two parties, such as the cloud service provider and the user, to steal data or manipulate the information being exchanged.
- The attacker can eavesdrop on the communication or modify it to their advantage.

#### PHISHING ATTACKS

 In a phishing attack, the attacker sends fraudulent emails or messages to cloud users, posing as a legitimate source such as the cloud service provider.

 The goal is to trick users into providing their login credentials, which can then be used to access sensitive data or launch further attacks.

## INSIDER ATTACKS

An insider attack is carried out by someone who has authorized access to the cloud infrastructure, such as an employee or a contractor. The attacker may abuse their privileges to steal data



# NUMBER OF INCIDENTS REPORTED IN MAJOR CLOUD

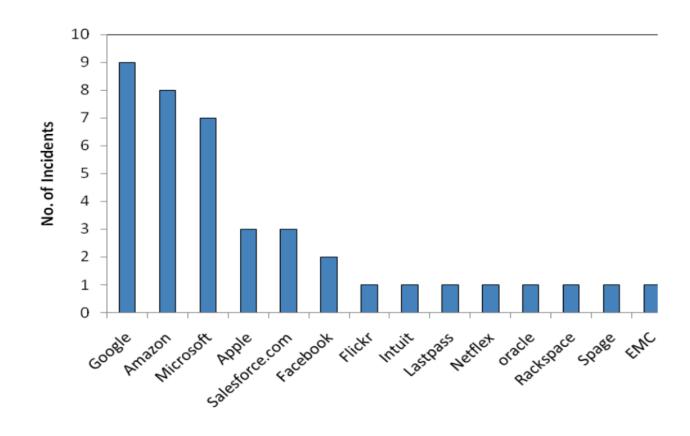
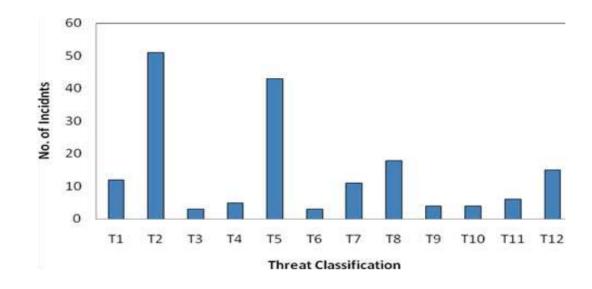


Figure 2: Number of incidents reported in major cloud

Study done by AlertLogic on "Targeted attacks and opportunistic hacks shows:

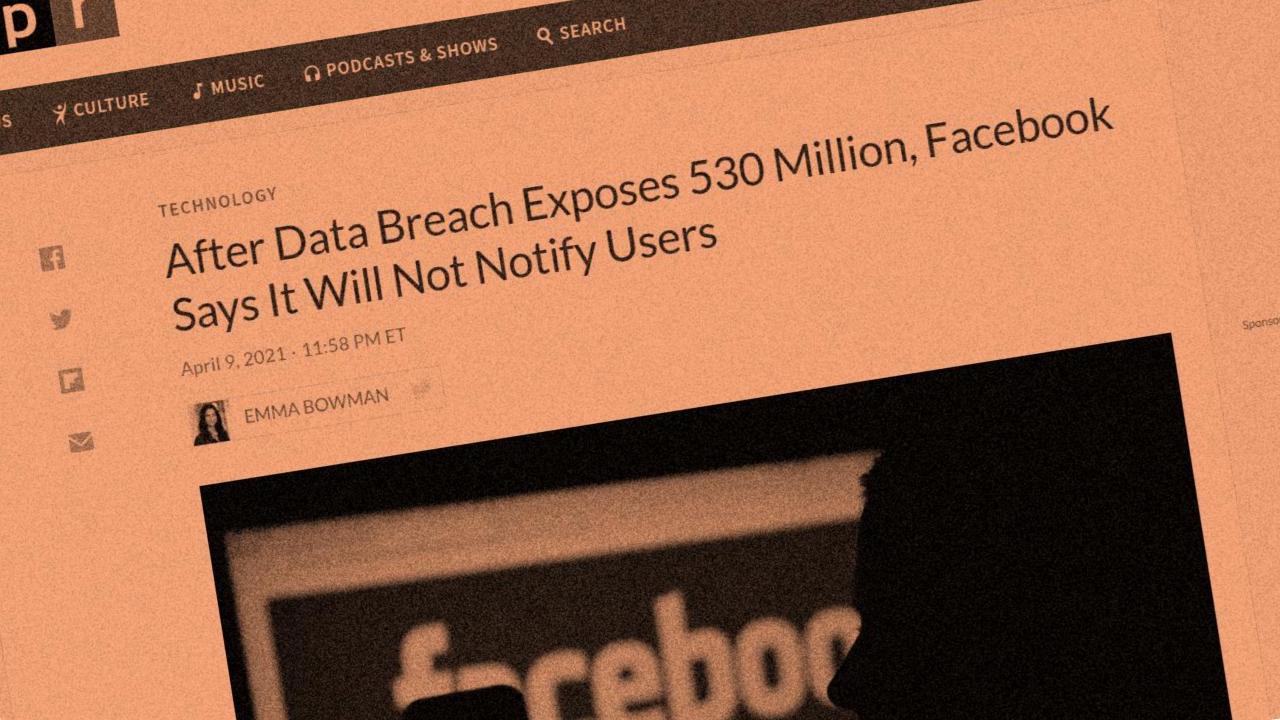
Table 1: Threats in cloud computing

Abuse and	Insecure	Malicious	Shared Technology	Data Loss or	Account or
Nefarious Use of	Interfaces and	Insiders	Issues	Leakage	Service Hijacking
Cloud	APIs				
Computing					
T1	T2	T3	T4	T5	T6
Unknown Risk	Cloud related	Natural	Closure of cloud	Cloud	Inadequate
Profile	malware	Disaster	services	related	Infrastructure
				malware	Design and
					Planning
T7	T8	Т9	T10	T11	T12



#### Facebook

Facebook was breached sometime before August 2019 but decided not to notify over 530 million of its users that their personal data was stolen





# FTC To Hold Facebook CEO Mark Zuckerberg Liable For Any Future

Privacy Violations

July 24, 2019 · 8:30 AM ET

Heard on All Things Considered





### Alibaba

In November of 2019, an attack hit Alibaba's Chinese shopping website Taobao that impacted more than 1.1 billion pieces of user data.

## VALL STREET JOURNAL.

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China Endgame

**Economic Challenge** 

RSTANDING CHINA analysis

**Controlling Companies** 

New Leader

# Alibaba Falls Victim to Chinese Web Crawler in Large Data Leak

Software developer scrapes 1.1 billion pieces of user data, including IDs and phone numbers, over eight months



#### Linked In

Like Alibaba, in 2021, LinkedIn also fell victim to a data scraping breach. Affecting 700 million LinkedIn profiles, the information was primarily public.

## Massive data leak exposes 700 million LinkedIn users' information

BY CHRIS MORRIS

June 30, 2021 at 9:19 PM GMT+5:30

LinkedIn the latest victim in data scraping hack

Data from 500 million LinkedIn users has been collected and sold to hackers



09. Naman Soni

v class="breaking-news-nav cf">
"before
"class="nav-button back" href="javascrama"
"class="nav-button next" href="javascrama"
"href="javascrama"
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# GENERAL SALES SALE

## Antivirus





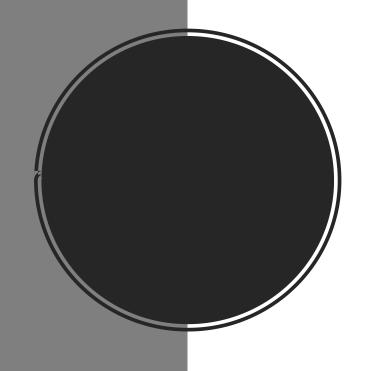


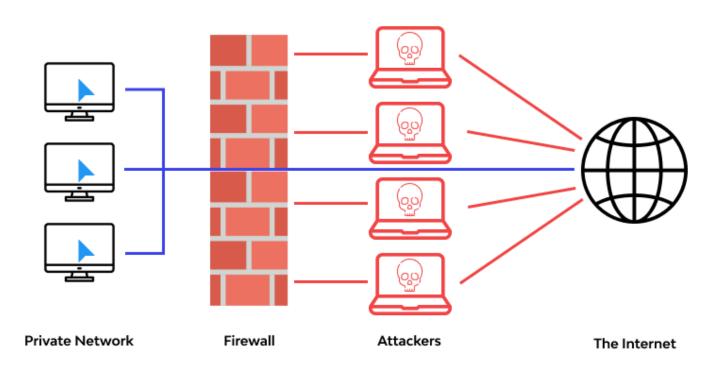


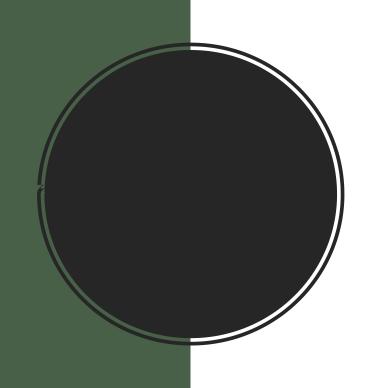


**Malware**bytes

#### What is a Firewall



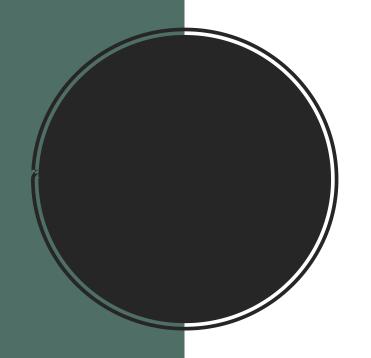












#### **PENETRATION**

**TESTING STAGES** 



Cyber Security Training

Ramembern

## Strong access control

Implement strong access control measures to ensure that only authorized users can access cloud resources. This can include multi-factor authentication, strong password policies, and rolebased access controls.



Encryption

Encrypt data both at rest and in transit to prevent unauthorized access. This can include using SSL/TLS for web traffic, encrypting data stored in the cloud, and using encryption keys that are managed by the customer.



## Regular backups and disaster recovery

Regularly backup data and test disaster recovery plans to ensure that data can be recovered in the event of an attack or other disaster.



#### Regular updates and patching

Regularly update and patch all software, applications, and operating systems to ensure that they are protected against known vulnerabilities and exploits.

#### Network security

Implement network security measures such as firewalls, intrusion detection and prevention systems, and security monitoring to detect and prevent cyber attacks.

### Employee training

Train employees on security best practices and how to recognize and respond to cyber threats. This can include regular security awareness training, phishing simulations, and incident response training.

## Bibliography

- Cyber-Attacks in Cloud Computing: A Case Study Jitendra Singh Department of Computer Science, PGDAV College, University of Delhi
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Thank You for Listening!