ARUNAI ENGINEERING COLLEGE
CODE:5104

DEPARTMENT OF INFORMATION TECHNOLOGY

DISASTER RECOVERY WITH IBM CLOUD VIRTUAL SEVER

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AGENDA:

- *Introduction*
- *Design Thinking*
  - *Empathize*
  - *Ideate*
  - *Prototype*
  - *Test*
- *Source Code*
- *Conclusion*

INTRODUCTION

Disaster recovery consists of IT technologies and best practices designed to prevent or minimize data loss and business disruption resulting from catastrophic events everything from equipment failures and localized power outages to cyberattacks, civil emergencies, criminal or military attacks, and natural disasters.

DESIGN THINKING

Empathize:

Stakeholder Interviews:

Conduct interviews with various stakeholders to gain insights into their perspectives. Ask questions about their priorities, expectations, and pain points related to disaster recovery in the cloud.

Data Analysis:

Analyze the data collected during the empathize phase to identify common themes and patterns. Look for areas where there is a consensus on what needs to be improved.

Ideate:

Mind Mapping:

Create visual mind maps to explore different aspects of disaster recovery, such as data backup, failover strategies, and communication plans. This can help uncover interconnected ideas.

Scenario Planning:

Develop hypothetical disaster scenarios and encourage teams to devise solutions for each scenario. This helps in considering a variety of situations and responses.

Role Reversal:

Have team members take on different roles within the organization and brainstorm from those perspectives. This can lead to more comprehensive solutions.

Prototype:

Build Prototypes:

Develop the prototypes using appropriate tools and technologies. Leverage cloud platforms and resources to simulate disaster recovery scenarios as realistically as possible.

Test and Iterate:

Use the prototypes to simulate disaster scenarios and test the effectiveness of the proposed solutions. Gather feedback from stakeholders, including IT teams, management, and end-users. Iterate on the prototypes based on this feedback.

Test:

Choose Test Scenarios:

Identify different disaster scenarios, like data center failure, data corruption, or a cyberattack, and plan how to simulate them.

Select Tools and Services:

Utilize cloud services and tools for your test, such as AWS Disaster Recovery, Azure Site Recovery, or Google Cloud's Disaster Recovery.

Test Data Recovery:

Simulate data loss or corruption and test your ability to recover data from backups or snapshots stored in the cloud.

Test Application Failover:

Trigger failover scenarios to test if your applications can seamlessly switch to the cloud-based environment.

SOURCE CODE :

```
# Simulate cloud resources
cloud_resources = {    "Web Server": "Online",    "Application Server": "Online",    "Database Server": "Online",}
# Simulate a disaster (e.g., Database Server failure)
cloud_resources["Database Server"] = "Offline“
# Check for the disaster and initiate recovery
if "Database Server" in cloud_resources and cloud_resources["Database Server"] == "Offline":
  # Implement recovery action
cloud_resources["Database Server"] = "Online"
   print("Disaster recovery successful. Database Server is back online.")
```

```
else:
    print("No disaster detected. No recovery action taken.")
# Display the current state of cloud resources
    print("Current state of cloud resources:")
for resource, status in cloud_resources.items():
    print(f"{resource}: {status}")
```

OUTPUT:

```
Disaster recovery successful. Database Server is back online.
Current state of cloud resources:
Web Server: Online
Application Server: Online
Database Server: Online
```

CONCLUSION

However, successful disaster recovery planning in the cloud requires careful consideration of factors like data backup, recovery time objectives, and testing. It's essential for businesses to continuously assess and update their disaster recovery plans to adapt to evolving threats and technology advancements, ensuring that they can minimize downtime and data loss in the face of disasters.

“WE WERE OBLIGED FOR THIS OPPORTUNITY”