Seminar Topic Summary Report

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Institution Name: Basaveshwar Engineering College, Bagalkot

Department of Computer Applications (MCA)

Course: MCA

Semester: II

Seminar Topic : Serverless Computing

Submitted by: Nandeesha KHM

USN: 2BA24MC017

Student Name: Nandeesha KHM

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Guide/Faculty Name: Prof. M. H. Shirur

Guide Signature:

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1. Introduction:

Serverless computing is a cloud computing execution model where the cloud provider manages the infrastructure (servers, scaling, etc.) and the developer focuses on writing and deploying code, typically in the form of functions, without managing servers directly. It's a paradigm shift where developers can build and run applications without provisioning or managing servers, leading to increased focus on application logic and faster development cycles.

2. Seminar Topic Details:

- Title of the Topic: Serverless Computing
- Area/Domain: Cloud Computing / Software Architecture
- Keywords: Serverless, FaaS, AWS Lambda, Event-driven architecture, Cloud services

3. Topic Summary:

Serverless Computing is a cloud-computing execution model where the cloud provider dynamically manages the allocation and provisioning of servers. Developers can write and deploy code without worrying about the underlying infrastructure, which is fully managed by cloud vendors such as AWS, Microsoft Azure, and Google Cloud.

In traditional server-based architectures, developers are responsible for maintaining server uptime, scalability, and resource allocation. Serverless computing removes these responsibilities and allows developers to focus solely on writing the business logic. This model is often implemented through Functions-as-a-Service (FaaS), where code is executed in response to events, such as HTTP requests, database updates, or file uploads.

4. Relevance to MCA Curriculum:

Serverless Computing is highly relevant to subjects in the MCA curriculum such as:

1. Cloud Computing
2. Web Technologies
3. Software Engineering
4. Distributed Systems

It illustrates how modern software systems are built and deployed in real-world scenarios. Understanding serverless concepts helps students grasp the evolution of infrastructure management and cloud-native development. It provides practical exposure to cloud platforms like AWS, Azure, and Google Cloud, which are commonly used in the industry. This knowledge is valuable for academic projects, internships, and professional roles in cloud development and DevOps.

5. Learning Objectives:

Understand the fundamental concepts of Serverless Computing. Explore various cloud platforms offering serverless services.

Learn how Faas differs from traditional and containerized architectures.

Identify advantages, limitations, and real-world use cases.

Gain hands-on awareness of deploying serverless functions using platforms like AWS Lambda or Google Cloud Functions.

6. Expected Outcome:

Gain a clear understanding of serverless architecture and how it operates.

Learn how to design and deploy event-driven functions in a cloud environment.

Appreciate the cost, scalability, and operational benefits of serverless models.

Be better prepared to work with modern development workflows involving CI/CD and DevOps.

Apply serverless principles in academic projects or real-world application development.

7. References:

[1] Roberts, M. (2016). Serverless Architectures. MartinFowler.com

[2] AWS. (2023). What is AWS Lambda? Amazon Web Services.

[3] Gannon, D.et al. (2017). Serverless Computing: One Step Forward, Two Steps Back. IEEE Internet Computing.

Coordinator Signature HOD Signature