

### 'State of Apps'- from Monolithic to Microservices

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#### Transformations in Software Development

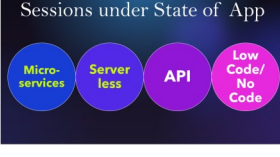
The world of Software Development has undergone sea of changes. We have moved on from Monolithic complicated Apps to cloud native technology which revolves around microservices. Further technologies like Serverless and API have made the entire process of app development extremely

##### 'State of Apps'- from Monolithic to Microservices

Transformations in Software Development



Application Modernization  
FROM MONOLITHIC TO MICROSERVICES



Sessions under State of App

- Micro-services
- Serverless
- API
- Low Code/No Code



Initiative of Vision Group of Institutions

modular, allowing unprecedented scalability and flexibility.

We have moved on from Software to App, from Servers to Cloud, and from Database to Unstructured NoSQL Data. We are witnessing unprecedented

changes as we enter the age of ubiquitous computing, developed on foundation of cloud, ably supported by of Artificial Intelligence & Machine Learning, Internet of Things, Data science, Blockchain, and AR&VR.

At **Vision Group of Institutions** we recognize the transformation in the world of App Development, and the need to incorporate these in their own codes. 'State of App' at the start of Odd Semester 2022-23 had workshops and lectures on related topics including inherent issues with Monolithic application architecture and the need to shift to Microservices. Lab sessions on topics like Cloud Serverless Functions, and API development proved to be extremely useful. Similarly the increasing role of Artificial Intelligence based Model-as-Platforms, and Low Code/No Code Apps had extensive workshops.

[Read further...](#)

#### Selected Practical Sessions under State of App series



Github Copilot: AI  
Pair Programmer



Azure Functions:  
Developing functions  
on Azure



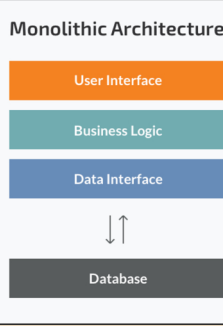
API: Developing and  
deploying API



Low Code designing  
using Microsoft  
PowerApps

#### Monolithic Software with Traditional 3-tier application architecture

Monolith is a fully functional application bundled into a single package and is deployed as a single unit. Initially a typical software has a universally accepted 3-Tier approach including the Frontend or UI Layer, the Middle Tier or Business Logic Layer and the Backend or Data Access Layer. It was designed for application development before the proliferation of public cloud and mobile applications and has had difficulty adapting to the cloud.



Over time, an application can become too large and complex is instable, grows performance issues, and Limited / No innovation is possible. Presently the software has become ubiquitous; reaching out to almost all industries with varied requirements. The way we were consuming these apps was changing from fixed desktops to remote, always-on world of mobile devices. This paved way for App Modernization with new architecture over monolithic approach.

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**Microservices** Microservices architecture (often shortened to microservices) refers to an architectural style for developing applications. Microservices allow a large application to be separated into smaller independent parts, with each part having its own realm of responsibility. To serve a single user request, a microservices-based application



can call on many internal microservices to compose its response. Microservices are small, independent, and loosely coupled code bases. Each service can be developed, deployed and maintained separately, and support polyglot coding. Containers are excellent choice for creating and running microservices.

[Read further...](#)

#### Serverless: Event-driven Cloud Functions

Serverless is a solution that allows you to write less code, maintain less infrastructure, and save on costs. Instead of worrying about deploying and maintaining servers, the cloud infrastructure provides all the up-to-



date resources needed to keep your applications running.

With serverless you focus on the code that matters most to you, in the most productive language for you, and Serverless Functions handles the rest.

You may phrase it as a **polyglot functions-as-a-service (FaaS) programming platform** for developing lightweight code that scalable executes on demand. They serve various needs, can be triggered independently, in a number of ways, and are always available.

[Check further details](#)

#### Containers- the future of App deployment

Containers have gained significant popularity in recent years, and many experts believe that they are a key technology for the future of application development and deployment. Experts predict that containers will continue to be an important technology for building and deploying applications, particularly in cloud and DevOps environments.



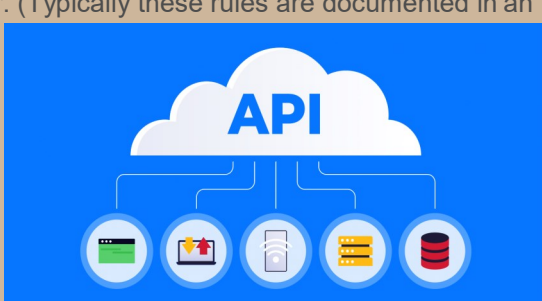
[Check further details...](#)

#### Application Programming Interface (API)

An API is a set of defined rules that explain how computers or applications communicate with one another. (Typically these rules are documented in an API specification). APIs sit between an application and the web server, acting as an intermediary layer that processes data transfer between systems.

API enable companies to open up their applications' data and functionality to external third-party developers and business partners, or to departments within their companies. This allows services and products to communicate with each other and leverage each other's data and functionality through a documented interface.

[Check further details...](#)



#### Adding AI -Building Cognitive Abilities

Today, developers solve problems, big and small, across every industry and organization on the planet. We need solutions which match up to these transient and rapidly evolving problems. Solutions which allow productivity and rapid app development for all scenarios.



Artificial Intelligence offers us similar solutions which can change the very way we develop apps and write code. Today through CoPilot, AI is assisting in writing apps. Similarly new platforms like Microsoft Power Apps allow No Code/ Low Code App development. These can be real game changers in the coming future. Have a look at few revolutionary developments.

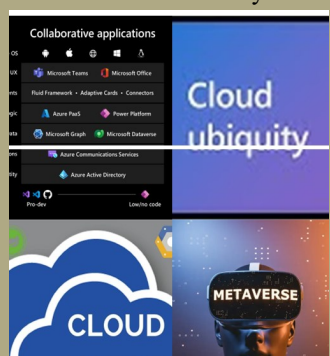
[A must read for all!](#)

#### Technologies of the Future

Today the developer community builds products and services that reach every corner of the world and touch everyone. What we build is changing how we live and how we work. We all have to answer two questions: What can we build? And more importantly, what does the world need us to build?

There are technologies which will define our future. Technologies which will lay path for the development and progress of our entire race. These are the technologies on which the biggest organizations are investing billions, technologies that are coming together as a powerful platform to help you build what's next

[A must read for all!](#)



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