Assignment 3:

Trends and Cloud Services Overview - Write a three-paragraph report covering: 1) the benefits of serverless architecture, 2) the concept of Progressive Web Apps (PWAs), and 3) the role of AI and Machine Learning in software architecture. Then, in one paragraph, describe the cloud computing service models (SaaS, PaaS, IaaS) and their use cases

Serverless architecture:

Serverless architecture is a type of cloud computing that enables development teams to get applications to market faster. Serverless means the server infrastructure is fully managed by a provider, so there's no need to manually track and manage application scale or cloud server configurations and provides benefits including reduced operating costs and always-on servers that support web and mobile applications. Servers are created on the fly only when required by the application. Instant availability creates additional scalability when compared to a cloud system.

Concept of Progressive Web Apps:

Progressive Web Apps are the advantages of web and mobile apps, utilizing web technologies like HTML, CSS, and JavaScript. They offer native app-like experiences across devices and platforms, including offline functionality and push notifications. These are responsive and installable directly from the browser, ensuring easy access and engagement for users. providing basic functionality on all browsers and enhanced features on modern ones, leading to faster, more reliable, and more engaging web experiences.

The role of AI and Machine Learning in software architecture

AI and machine learning are revolutionizing software architecture by enabling intelligent, data-driven decision-making and automation. These technologies are increasing integrated into various aspects of software development, including predictions, natural language processing, and recommendation systems. AI and machine learning algorithms can optimize performance, enhance security, and personalize user experiences. From automating tasks to identifying patterns in data, AI and machine learning play a crucial role in shaping the future of software architecture, empowering developers to create smarter and more efficient systems.

Cloud computing service models (SaaS, PaaS, IaaS) and their use cases

Software as a Service (SaaS) delivers applications over the internet on a subscription basis, ideal for end-user applications like email and collaboration tools.

Platform as a Service (PaaS) provides a platform for developers to build, deploy, and manage applications without worrying about the underlying infrastructure, suitable for application development and deployment.

Infrastructure as a Service (IaaS) offers virtualized computing resources over the internet, enabling users to provision and manage servers, storage, and networking infrastructure on-demand, suitable for businesses requiring more control over infrastructure and applications.