Teaching Serverless Web Application Development

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ABSTRACT:

New concepts and models of application development such as microservice and serverless are emerging with the prevalence of Cloud computing. In addition to discuss the theoretical concepts and architecture, this paper focuses on the application development. The first section of the paper defines serverless computing architecture and describe the application case. The second part shows how to break down the functions into individual services. Next, the a series of lab activities are provided to show the implementation process. These lab activities cover from creating development environment with cloud9, static hosting with s3, Javascript coding and Fetch function, writing lambda functions and testing, configuring API Gateway and debugging with CloudWatch, to code management with Github. Each lab activity contains a set of tasks, which then composed of sequential steps. Last, the challenges, strategies, and lessons learned in teaching serverless web application are discussed. This paper contributes the teaching/training domain with an exemplary case on how to develop and implement Serverless web application on Amazon Web Services (AWS) computing infrastructure.

Keywords: AWS, web application development, serverless architecture, teaching case