In this report, we will explore various Java technologies and analyze what features they offer. The focus of this project is to find which frameworks are most suitable for quick prototyping of a business application. Constraints and other requirements will be defined and are then applied to a specific case study.

We have explored different features of Spring Boot framework which is the second most popular web framework, and chose it to build our prototype. We switched from Monolithic architecture to Micro-services architecture which is a method of developing software applications as a suite of independently deployable, small, modular services. For each service, different database is used, with both MySQL and MongoDB. For each independent service application, an embedded Tomcat server from Intellij IDEA is used to deploy our project. Each service provides REST APIs for API Gateway and client-side web application, and both of which are configured as clients of Eureka discovery server that can detect devices and services registered on the Eureka registration server. In this case, scalability and load balance are guaranteed in this Micro-services architecture. An android application is made to consume the API Gateway.

At the end of this project we have an excellent understanding of the technologies involved to make an online cash register application that handles orders and payment in restaurants as our case study. The application can be accessed via a browser client on any device or employees can use our native application on android devices. When using a browser, the user will connect with an application server that serves html pages. Customers will be greeted by a menu page of the restaurant they browsed to. Employees and managers can log in to access more functionality.