DESIGN AND IMPLEMENTATION OF WEB SERVICE ORCHESTRATION AND SINGLE SIGN-ON IMPLEMENTATION IN ENTERPRISE RESOURCE PLANNING

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ABSTRACT

In Enterprise Resource Planning (ERP) which composed of several applications / domains stand-alone, specific business processes are handled in each domain. Business processes in ERP is largely a running stream of data information from one domain to another. In some inter-domain, business processes are still done manually can actually be done automation. Business process automation can be done through the web service composition of web service called web service orchestration.

In ERP user authentication is important. This is because each user in ERP has certain access rights, so that user authentication is required so that users can access the resources in accordance with the access rights. Implementation of user authentication will be a problem if its implementation to the ERP domain which consists of a stand-alone, so it requires the centralize user authentication. Single Sign On is an effective solution to address centralized user authentication.

Implementation of web service orchestration using BPEL is a standard language to execute business processes using several web services which the order of execution is defined in the BPEL document itself. In order for the web service orchestration
can be consumed by the client application requires several stages. First compose BPEL using BPEL Editor on the Open ESB, the results then compiled in the Composite Application for later deployed on the BPEL Engine. A series of that processes generate WSDL which consumed by the client application to perform a process of web service orchestration.

The benefits of web service orchestration implementations is a business process in ERP which is usually done manually can be automated. Also the effect is efficiency of work and reduce data redundancy in ERP.

Implementation of Single Sign On in this final project using Java Open Single Sign On (JOSSO) framework which has architecture of the Gateway Server as a central user authentication, Agent Server as a server in which there are compose of ERP applications, and Persistence as a place to store the user credential. The ERP Application in this final project designed to use a multi-schema database to generate the application as a service for several manufacturing companies. Thus, in the implementation of Single Sign On multi-company user authentication based on user credentials contained in the existing schemes in the database.

Thus the implementation of Single Sign On to multi-company in this final project is capable of handling user authentication from different companies. So if there are multiple users from different companies access the same ERP applications, the application will provide data in accordance with the company where he worked. Also with the implementation of single sign on, user unnecessary do login everytime he access resource or difference application in ERP.

**Keywords**: web service orchestration, ERP, single sign on, multi-company