Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

The purpose of this form is to allow final year students of the B.Sc. (Hon) degree program to enlist in the final year project group. Enlisting in a project entails specifying the project title and the details of four members in the group, the internal supervisor (compulsory), external supervisor (may be from the industry) and indicating a brief description of the project. The description of the project entered on this form will not be considered as the formal project proposal. It should however indicate the scope of the project and provide the main potential outcome.

PROJECT TITLE	Open source SOA Middleware framework for Classified based web development
RESEARCH GROUP	Software Engineering
PROJECT NUMBER	(will be assigned by the lecture in charge)

PROJECT GROUP MEMBER DETAILS: (Please start with group leader's details)

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	K.S.D.A Kulathunga (GROUP LEADER)	IT 14 0256 86	077 6002208	it14025686@my.sliit.lk, kasun.kulathunge@gmail.com
2	W.M.N Radith	IT 14 0110 30	077 1950394	it14011030@my.sliit.lk, n.radith@gmail.com
3	Liyanaarachchi I.H.	IT 13 1373 42	077 9104165	it13137342@my.sliit.lk, Ishanivv@gmail.com
4	Kumari B.R.K.S.	IT 14 0471 52	071 3889138	it14047152@my.sliit.lk, kasunishivo93@gmail.com

SUPERVISOR

Mr. Nuwan Kodagoda		
Name	Signature	Date

CO-SUPERVISOR (will be assigned by the Supervisor, if necessary)

Name	Signature	Date

EXTERNAL SUPERVISOR (if any, may be from the industry)

Mr. Tharindu Edirisinghe				
Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY CDAP MEMBER

Name	Signature	Date

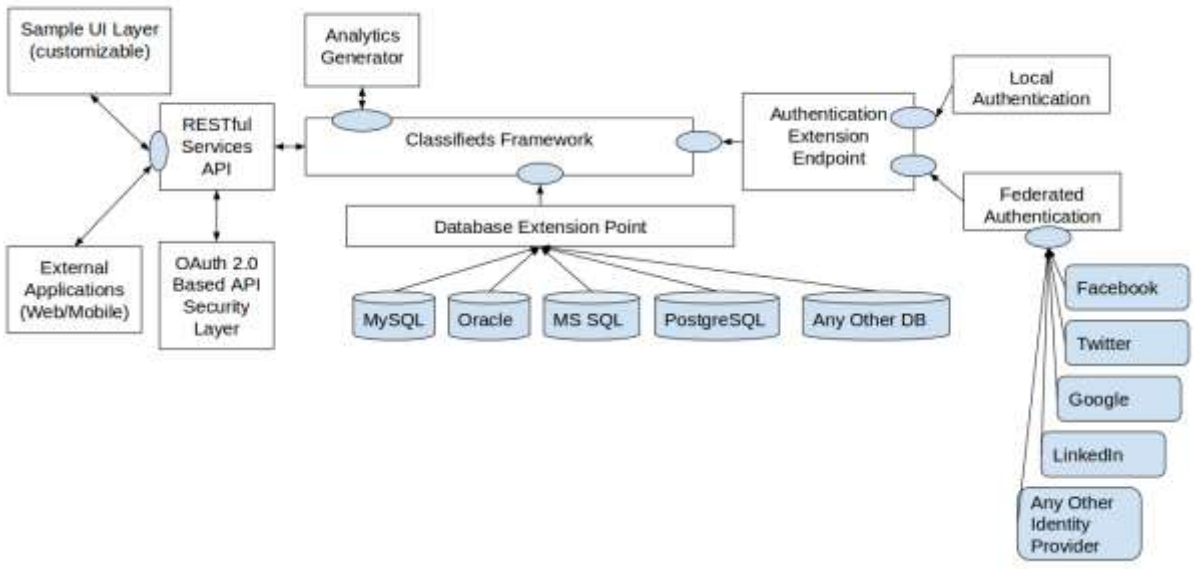
PROJECT DETAILS

Brief Description of your Research Problem:

Many Web/Mobile Developers face the problem of learning curve when coming to classified based (web sites containing classified material e.g. craigslist, ikman.lk) web development. They are required to learn the required components for development separately and face problems when integrating the components (development framework, authentication, analytics tools). When comes to authentication, many of these Federated authentication protocols are non-extendible (separate one for Google and Facebook, when developer wants to users to login using LinkedIn, developer is forced to use separate API for it.). Developers also face the problem of having to learn and use or even develop a separate web analytics tools to be used on the project.

Description of the Solution:

The solution proposed is to develop an open source SOA based middleware framework for classified based web/mobile application development. This will minimize the learning gap of the web/mobile developer by having a developer friendly framework for development that integrates the core modules of development, authentication and analytics available in one framework that seamlessly works through SOA architecture.



Technologies to be used:

- Java (Web) JSP, Servlets
- RESTful Web Services (JAX-RS)
- API Security: Basic Authentication and OAuth token based authorization
- SQL (supportability for major vendors. MySQL, MSSQL, Oracle, PostgreSQL, IBM DB2)
- HTML5, CSS
- OAuth 2.0 based Federated Authentication support (facebook, twitter, google, linkedin etc.)
- Just in time provisioning
- Caching layer with Ehcache
- Secure coding with OWASP best practices
- FindSecBugs, OWASP Dependency Check, OWASP ZAP for security testing
- GIT for source code management
- Apache Jmeter for performance testing
- Apache Maven
- Jenkins for continuous integration/delivery

Main expected outcomes of the project:

Classified base web development involves complex technologies where developer required to spend time on out of the domain to learn those. This framework handle complexity of those technologies and let developer to more focus on domain and build feature rich classified web application. This framework will which decrease project development time and minimize the developer knowledge gap in wide range of technology stack of the web/mobile developer by having a developer friendly framework for development that integrates the core modules of development, authentication and analytics available in one framework.

WORKLOAD ALLOCATION (Please provide a brief description about the workload allocation)

MEMBER 1

Core Framework
Research Area: Software Engineering

Design of framework architecture (classified framework core) Including the restful Service API and End Points to External Application (Mobile/Web), Integration with other components of the framework, permissions and roles and security of the core framework.

MEMBER 2

Extensible Databases Integration
Research Area: Software Engineering

Mainly focus design and development of extensible database abstraction layer/component architecture, security and performance. Component support multiple DBMS (MySQL, MSSQL) featuring table creation, querying, indexing, object mapping and orm.

MEMBER 3

Extensible Federated Authentications
Research Area: Information Security

Architectural design, implementation of extensible federated authentication component, security and performance. By default, this component support Facebook, Google, Twitter, Yahoo authentications, but should cater to other services.

MEMBER 4

Web Analytics
Research Area: Data Science (Data Analytics)

Architectural design and implementation of web analytics component. Component can be configured or extended with external existing analytics libraries. Analytics component will be based on web log data mining (usage patterns from web data).

DECLARATION

"We declare that the project would involve material prepared by the Group members and that it would not fully or partially incorporate any material prepared by other persons for a fee or free of charge or that it would include material previously submitted by a candidate for a Degree or Diploma in any other University or Institute of Higher Learning and that, to the best of our knowledge and belief, it would not incorporate any material previously published or written by another person in relation to another project except with prior written approval from the supervisor and/or the coordinator of such project and that such unauthorized reproductions will construe offences punishable under the SLIIT Regulations.

We are aware, that if we are found guilty for the above-mentioned offences or any project related plagiarism, the SLIIT has right to suspend the project at any time and or to suspend us from the examination and or from the Institution for minimum period of one year".

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