Associated Engineering Project Management Tool

GROUP #2 : Team JSON Bourne

Terms of Reference

Team members: Nicole Kitner, Stacy Leson, Lisa O'Brien, Jenessa Tan, Sang Xu Jacqueline Yin, Bang Chi Duong, Ana Katrina Tan

February 23, 2020
Version 1.0.1

Document Information

Revision History

Date	Version	Status	Prepared by	Comments
01/14/2020	1.0.0	Complete	JSON Bourne	
02/23/2020	1.0.1	Complete	Jacqueline	Updated the following sections: - Assumptions - Risks

Document Control

Role	Name	E-mail	Telephone
Project Manager	Jacqueline Yin	yin.sangxu@gmail.com	778-751-4089

Approval

Role	Name	Signature	Sign-off Date

Post Approval Distribution

Role	Name

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Project Information

Project Overview

As one of the largest engineering consultants in Canada, Associated Engineering faces a challenge in which their current system of seeking and allocating resources requires manual effort, making for an inefficient and time-consuming process. Implementing a system by which Associated Engineering staff can input, retrieve, and view pertinent information of their engineers will allow for an optimization of their resource utilization, freeing more of Associated Engineering's resources to be allocated elsewhere and ensuring that the best-fit candidates are matched to given projects. To minimize the extensive time needed to ensure that appropriately skilled individuals are assigned to suitable projects and/or initiatives, AE is requesting for an implementation of a resource utilization optimization system through which their staff members will be able to insert, retrieve, and organize relevant information on their engineers/staff and projects.

Scope, Goals and Objectives

To implement a resource utilization optimization system that allows for the following actions to occur:

- The creation of individual contributors
- The defining of new projects
- The assignment of workload to individuals on projects on a monthly basis by Project Managers
- The accessing/display of cumulative information of an individual's availability (including overutilization and underutilization of the individual's billable hours) to be accessible to Resource Managers
- The lookup of staff/individuals with appropriate skills and availability
- The signing in of staff members through their Azure Active Directory accounts
- The adjustment of the system's database tables by an admin
- Sizing is 1000 resources and 24 months of forward looking availability

Stretch goals:

- Allowing for workflows: having an individual's profile reviewed by their manager before their information is added to the database
- Search Result Ranking: having the output displayed in priority order (either by degree of how many skills of an individual match the criteria, or by the individual's level of availability)

Out-of-Scope

- Secure login is not within the scope of this project.

Deliverables

Milestone/Deliverable	Dates of Delivery
Terms of Reference	January 14, 2020
Project Plan	January 17, 2020
Requirements Document	January 30, 2020
Design Document	February 6, 2020
Work-In-Progress Link	February 18, 2020

Test Plan	March 12, 2020
System Documents	April 7, 2020
Final Project Deliverable	April 7, 2020
Warranty Period	April 8 - 23, 2020

Benefits

- Clean and easy to understand profiles of individual staff/engineers to ease the process of, and reduces the time spent evaluating and assigning appropriate engineers to projects/initiatives for Resource Managers
- Localized information of an individual's availability that can be updated in a convenient manner by their Project Managers (encouraging more frequent updates by Project Managers)
- Optimizes the utilization of employee hours

Project Constraints, Assumptions, Dependencies and Risks

Constraints

- FrontEnd: JavaScript, React

- BackEnd: .NET (C#)

- Database: SQL Server

- Environment: Microsoft Windows 10, IE 11 and Chrome browser standards

Assumptions

- Project Managers are responsible for adding users to projects, despite under or over utilization, and Resource Managers are responsible for verifying utilization of the users and making sure all resources are allocated properly

- Users are created by admin, and able to edit their information once their profile is created

- Azure has a backup of our database
- Azure will host our application and be available 24 hours per day
- Maximum capacity is 1000 users
- Program must be able to run on IE11 and Chrome v79

Item	Details
Resources (Users)	Resources are created and imported from a 3rd party database
	Resources can be added to a project even if they are overutilized
	Resources are *reserved* and assigned to a project, but only *confirmed* closer to project start date
	Resources cannot have skills for discipline they do not have
Project Manager	Project Managers can only delete their own projects
Projects	Projects can be created by the PM/RM or imported from a 3rd party database
	When a project is created, there are initially no resources assigned to that project
Utilization	All users are able to see a resource's utilization
	Utilization is automatically computed when a resource is confirmed

	When a resource is reserved, the utilization does not get updated
Skills	Skills are associated with specific disciplines

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Dependencies

- Associated Engineering's Azure Active Directory API

Risks

Risk ID	Risk Description	Assessment	Mitigation
1	Unrealistic project component completion timelines	medium	Incremental development, weekly timeline check-ins to stay on track and divert resources as needed
2	Discrepancy between created product and desired product	medium	Sponsors review wire-frames and prototypes. Identify and clarify assumptions that are made
3	Possible corruption of database during development	medium	Keep uncorrupted version of database to reset if needed
4	Private contractor information could be leaked through the system during development	low	Provide testing environment that only contains mock data
5	Database attacks -SQL injection attacks via product	low	Sanitizing user inputs, following best practices for security, include in testing plan

Project Approach

Project Approach

Backend

User Module

- Create users
- Edit user profile
- Active directory integration

Project Module

- Create projects
- Edit projects

Search

- Input skills and find people that are available with those skills

Forecasting

- PM: assign project to person
- RM: determine over/under utilization

Admin

- Boundaries for system
  - sets of skills, disciplines, locations

Estimated Schedule

Week 1 (Jan 6-10) - Preliminary planning

Week 2 (Jan 13-17) - Wireframe, DOT NET research, Questions

Week 3 (Jan 20-24) - API (Backend), DB Setup, Front-end integration

Week 4 (Jan 27-31) - Basic Full Stack Integration, Frontend/Backend: User and Project pages

Week 5 (Feb 3-7) - Continue User and Project pages, Start work on Administrative pages

Week 6 (Feb 10-14) - Work on Search and Forecasting pages

Week 7 (Feb 17-21) - Integration Testing, Work-in-Progress Demo

Week 8 (Feb 24-28) - Integrate AE's DataBase, Test data

Week 9, 10 (Mar 2-13) - Address Tech Debt and Front End Improvements

Week 11 (Mar 16-20) - Final Deployment

Week 12, 13 (Mar 23 - Apr3)- Final Debugging, Regression Testing, and address final Tech Debt

Estimated Project Costs

No additional costs are expected due to the use of open source

Project Governance & Resources

Project Team Responsibilities

Chi - Setup, Backend Developer

Jenessa - Backend Developer

Jackie - Project Manager, Database

Katrina - UI/UX Designer, Frontend Developer

Lisa - Frontend Developer

Nicole - Database and BFull Stack Developer

Stacy - Frontend Developer

Project Role	Person Responsible	Contact Details
Project Sponsor	Associated Engineering	Via Dave Pagurek
Budget Owner(s)	N/A	
Project Manager	Jackie Yin	

Project Communication Plan

Project Meetings

- Thursdays at 7:00 pm with Project Sponsor Proxy Dave Pagurek

-    Team meetings on Wednesdays from 5:00-7:00pm as necessary

Open Source Declaration

BSD License

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