

Project Proposal

Inventory Management System

Spark New Zealand

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VERSION CONTROL

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Author | Additions & Modifications |
| 10/01 | 1.0 | Saksham Anand | Initial Release. |
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KEY MEMBERS

|  |  |
| --- | --- |
| Client | |
| Name | Email |
| Ismail Kazmi | Ismail.hazmi@spark.co.nz |

|  |  |
| --- | --- |
| Mentor | |
| Name | Email |
| Bharat Kochar | bharat,kochar@assertio.co.nz |

|  |  |  |
| --- | --- | --- |
| Team Members | | |
| Name | Roles | Email |
| Saksham Anand | Software Developer | me@sakshamanand.com |
| Barbora Sharrock | Business Analyst | barboras@missionreadyhq.com |

EXECUTIVE SUMMARY

The Deloitte Consultancy Feedback system is requiring a full rebuild from scratch as it is currently in a state that is not deemed usable by the people using it.

The site must be able to allow for consistent capture of coach feedback with an effective interface requiring nothing but intuition and minimal explanation to navigate and operate to its full extent.

The system will be starting new and will not be using existing review data and new data will not be compatible with the old system. The scope of this project includes a full redesign of existing features and the addition of many new ones including the database.

The rebuild will still allow for request of feedback, feedback being placed and viewing of personal feedback as the current system does. The new system will bring some improvements, namely a dashboard overview for each type of user to allow for historical viewing of review data. Coachees will be able to see how they are tracking over time in regard to their grade as well as compare themselves to the mean ratings of other consultants. As a coach the dashboard will be able to display analytics on their coach’s performance and reviews and monitor growth and progress. All data displayed on the dashboards will be done using interactive charts and graphs. The project will be completed using MS SQL, Express, Node.js and Angular. This progressive stack will allow for rapid development and a large amount of adaptability in the features produced. It will allow for future developers to easily understand the logical breakdown of the site and make maintenance significantly more manageable.

The project will follow the hybrid agile methodology suggest by the clients in Deloitte. The largest risk involved in this project is creating a system that doesn’t solve the interface issues and the feedback system remains a marginally useful site. In this case the project will have not succeeded at fixing the main issue. Following the previously mentioned mean of completion should allow us to avoid this issue as Angular is designed for easy human interaction on the front end.

This development aspect of this project is expected to reach completion in the middle of September 2018 and will cost an estimated $49,990.

TERMS OF REFERENCE

Client Organisation Introduction:

Deloitte Touche Tohmatsu Limited was founded in 1845 by William Welch Deloitte. It has become one of the world’s largest companies to provides high quality professional services such as audit, consulting, financial advisory, risk advisory and tax services. Deloitte aims to achieve the best in what they do, therefore working closely with their clients to achieve their ambitions and to make a positive difference in society. Currently Deloitte’s consulting performance framework consists of a lot of manual work to capture details in each project performance rating. Employees are looking for a greater tool that will optimize current working state and improve better employee experience in terms of the user interface as currently they have hard to navigate UI which different ranks around the company can’t access.……………………………………………………….

Project Description:

For the project, our team is to create a web application tool to gather information on the performance feedback for each project to help better understand the overall performance rating at the end of the year. This project will help provide analytics, quick automated data collection and streamline the workflow. Unique access will be granted to the firm’s leaders while protecting employee confidentiality with built-in security settings.

Project Purpose & Business Goals:   
Design an online feedback tool that enables:

* Capture feedback in a standardised format.
* Users to review feedback and compare their performance across the organisation with different user permissions and authorisation.
* Real-time analytics for leaders and managers, to better measure the employee performance in a fair and transparent way.
* Improved user interface, designed for purpose that is easy to navigate.

Technical/Constraints:  
A local cloud-based online tool is preferred. Users can access the feedback system anywhere and anytime. Designing a mobile app is not within the project scope. The site must not be an external site and must be able to be embed into their current systems. The site must utilize their Single Sign On (SSO) feature to authenticate users.

RATIONALE

Why is the project needed?

Deloitte is a big company that handles a lot of data. It would be in Deloitte’s best interest to be able to automate the retrieval of important data to make the process as quickly as possible.  
This way the company would require information in a seamless, streamlined process which makes time management more efficient and allows for more manual labour to be focused on higher priority tasks. The project is to improve the existing feedback system with usability that requires minimum training and allows an additional feature such as, employees with certain administrative rolls to access sensitive information in a transparent way that protects employee’s confidentiality for executing the feedback.

Issues:

The existing system is a web application that runs on Deloitte’s intranet. It is poorly designed making it not user friendly and this deters users from using it. A redesign of the user interface and more visual appeal making it easier to follow is necessary as users have complained in the past about the design. For the firm leaders there is a lack of information availability for them to accurately estimate when giving their annual feedback.

The web application should have separation between different information and look like a dash board design, rather than having the information clustered into one page. This will help users focus more on what they need to be looking at rather than scanning the entire web page. Symbols and well formatted words will help clear any confusion about the feedback process.

Opportunities:

In the annual feedback review, there is no way of knowing the previous grade that was issued out before. This is a feature the client would like to see incorporated into the new design, which is a way of displaying data of the previous feedback information, for example, a graph based on their grading system. This will help the reviewers decide on their annual grade, because the information needed will be displayed in front of them, therefore making the review process easier. This feature is important because it helps the reviewers give their annual feedback which determines if the person gets a raised/promotion or both for their hard work throughout the year.

SCOPE & OBJECTIVES

Project Goals:

This project aims to create a better feedback web application tool than the current existing system. The web application tool will be used on Deloitte’s intranet network, where certain employees will have authorised access relative to their roles in the company. Improving feedback consistency and ability to monitor feedback, as well as improving user experience dealing with the feedback system, are objectives that this project aims to achieve.

* **Better user interface design:** Dashboard design, no cluster of information, intuitive design, display only relevant information, allow easy navigation and is robust.
* **Displaying useful information:** Annual feedback performance review should show previous feedback information throughout the year, for convenient access to data to help achieve the appropriate feedback grade given.
* **Feedback tool:** Ease of use for selecting which grade to give for the feedback.

Functional Requirements:

* The system must display different options of grades to select, when the feedback state is true.
* The system must store the given feedback to Deloitte’s database when the user confirms their feedback.
* The system must display the correct authorised information in correlation to the role of the user.
* The system must display a graph containing the previous feedback grade of the consultant in the annual feedback review.
* The system information must be segregated using a dashboard design layout.
* The system must have two dashboards, one for employees and the other for the coach.
* The system must have four pages for the employee dashboard containing goals, values plus other contributions, my feedback and ownership.
* The system must be able to retrieve real time data of the feedback.
* The system must be able to create a pdf report containing the consultancy feedbacks in a standardised way.
* The system must be able to create a report of individual performances compared to other individuals.
* The system must run on Deloitte’s intranet.

Non-Functional Requirements:

* Web tool feedback input throughput should update to the database within 5 seconds of confirmation.
* Updated data in the database should be retrieved for all users accessing the webtool within 5 seconds.
* Web tool should be accessible 24/7, unless during maintenance.
* Web tool should show information in a transparent way while protecting employee confidentiality.
* User scalability must not have any latency delay while the system has 25+ people.

Preferred Solution:

The final solution will be developing the web tool on Linux, using a range of languages such as the MEAN stack consisting of MongoDB, Express, Angular JS, Node.js, instead of MongoDB we plan to use Microsoft SQL, JavaScript, CSS and HTML. The MEAN stack is lightweight, portable and allows for the usage of over 350,000 published node packages. We are using GitLab for version control. GitLab provides extensive issue tracking that will help us follow our development and methodology more seamlessly.

Key Milestone:

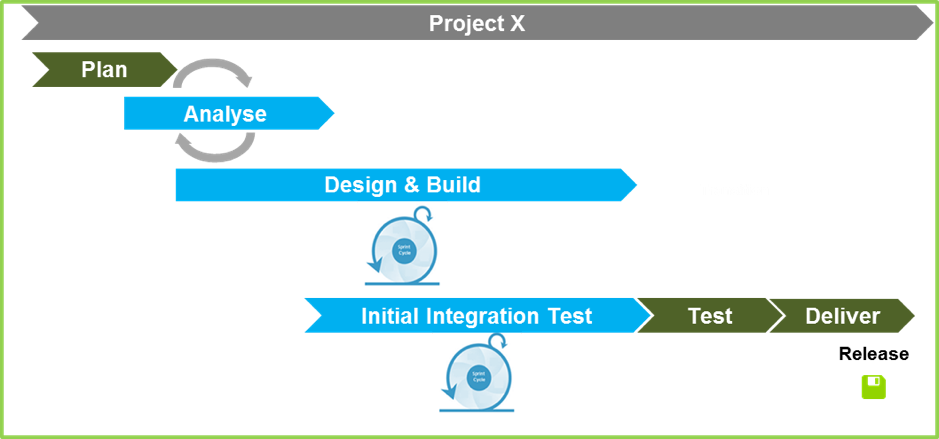
* Project Proposal Assessments
* Project Development
* Status Report
* Mid Project Review Interviews
* Project Portfolio
* Product Presentation
* Product Handover

PROJECT METHOD & APPROACH

**Hybrid Agile Approach**

Hybrid agile is an approach that combines the traditional waterfall approach and Agile. The phases of hybrid agile are planning, analyzing, designing and building, testing, and delivering. Plan, test and deliver are phases of waterfall approach while analyze, design and build are Agile approach. This approach allows speed, flexibility and transparency between client and project team ("You don't have to be all in to agile", 2015).

Basic representation of Hybrid Agile framework:



**Hybrid Agile Phases**

|  |  |
| --- | --- |
| Phase | Description |
| Plan | The planning phase includes two elements; work plan and master plan.  The master plan is the high-level plan drawn out to set the path of each deliverables assigned by its start and finish date.  The work plan lists out the key work deliverables that will be carried out in this project. A work breakdown structure is a representation on work plan. |
| Analyze | The business requirements are analyzed according to the priorities of the business and are influenced by business impact and value, criticality, technical dependencies, process dependencies, and complexity.  From requirements, sprint planning then takes place and it is done to set out the goals that are to be completed by the end of the sprint. Sprint duration is between 4-6 weeks. |
| Design & Build | Design is done once requirements of each sprint is set out and is completely based off the requirements.  After the design is agreed on by client, the team now develop the system configuration and application needed to build the product. |
| Testing | Testing can be done by creating a test cases to check if the limited code can pass a targeted scenario in the development cycle. It can be done as early as each sprint to ensure that issues are identified and solved timely. |
| Deployment | The deliverables of the completed work and it is continuously supported to maintain system performance. |

**Hybrid Agile Events**

These events take place during the design and build phase.

|  |  |
| --- | --- |
| **Events** | **Description** |
| The Sprint | Sprint is the period where the usable product is designed and built accordingly to the objectives and goals of the sprint; its duration is within a month |
| Daily Stand Ups | The project manager holds a 15-minute-long daily meeting with the development team to assess work progress and tasks to achieve sprint goal. The development team set out the tasks for the next 24hrs. |
| Sprint Review | Sprint review is attended by stakeholders and development team to review the goals that are achieved and goals that are not achieved. The actions needed to be done to maximize product value is also discussed. It is an informal meeting that is done at the end of sprint and is usually up to four-hour meeting. |
| Sprint Retrospective | Sprint Retrospective is a review done by the development team and project manager to point out the potential improvement from the previous sprint with regards to the resources and tools involved. This allows room for improvements for the next sprint and by doing this, it increases product quality. Sprint retrospective is done after sprint review and before the next sprint starts. |

**Justification**

Hybrid agile involves a lot of team work from development team, project manager and stakeholder. This is one of the advantage of choosing this method because information is transparent among everyone involved in the project. Other advantages are discussed below:

* Stakeholders can provide continuous feedback and support in every sprint because sprint reviews are done concurrently. This allows the information shared by development team and stakeholders to be transparent and improvements and changes can be done at the instance.
* Prototypes can be developed within the sprints to allow teams to test the functionality of the requirements.
* Issues are identified early because sprint of continuous sprint review at the end each sprint.
* The project is executed on sprint basis that accelerates the ability of high-priority featured product.
* Deloitte is known for their hybrid agile approach so they asked us to use this methodology.

PROJECT PLAN

Management:

As the project will be following the Hybrid Agile methodology provided by Deloitte we will be focusing our sprints around features and working on a weekly sprint cycle. We have opted for a frequent sprint cycle as the team works on a weekly meeting schedule due to the organisation of our university timetables. This will allow for maximum communication and discussion without emergency meetings being needed which can be very hard to organize at the last minute without a member having to miss a class.

Sprints will start at 10am every Tuesday going through until Monday. Each sprint will begin by analyzing the previous sprint documentation and discussing how all the tasks went over the last week. Our Trello board (which is our agile board, that helps is assign and track tasks), burndown chart and other relevant documentation will be updated to reflect the progress made and any incomplete tasks will be factored in to the next sprint. Completed tasks will be put in the queue for testing until the feature it belongs to is finished, where the whole feature will then be thoroughly tested. Tasks for the new sprint will be assigned and added to the sprint backlog, making sure members are aware of the requirements and goal of the task they are working on.

The group will have stand-up meetings 3 times per week either in person or in voice over the internet. The purpose of these meetings will be to track progress on user stories and allow for communication of discoveries or issues that may arise.

Development:

The project will be completed using a modified version of the MEAN stack. Instead of MongoDB we will be using MS SQL as it is the same database currently employed by the existing system. This is to keep the changes to the current environment that will be needed to integrate this system to a minimum.

The SQL database will be where all system data is stored. This data will include relationships between users, user permissions, feedback, goals and any other core datasets required. The database will be normalized to avoid data redundancies and keep query response time as quick as possible.

The database will not be directly accessed by the front end, but instead will be selectively exposed through a robust Application Programming Interface (API). The API will be built in Node.js using the Express webserver package. Using Express will allow for the creation of a RESTful API (Utilizes HTTP protocols for retrieval of resources and system state) significantly faster than if it was coded in purely Node.js and will more reliable as it has been thoroughly tested by an extensive community in large scale projects. There will be full CRUD (created, read, update, delete) operations for applicable aspects of the system within the API. The disjoint between the front and back end means that any future applications wishing to access this data can utilize the API without concern for how the data is being stored or handled.

The front end of the application will be built using Angular5. Angular is a progressive framework that has fantastic extensibility for this application and will provide a solid and well-rounded solution for the planned redesign of the consultancy feedback system. Through, the use of a service component we will create a highly efficient and secure means of interacting with the API through-out the app without having to directly interact with the database itself. This preserves the in integrity of all security layers and allows for easy access to information in the database from within JavaScript. The reusable nature of Angular components will mean that a lot of the panel content can be used across the different panels resulting in less verbose and more maintainable code.

We plan to use ‘HighCharts’, a graphing library for JavaScript, to display the raw data extracted from the API endpoints directly as professional looking and interactive graph. This will allow for users to explore their current and previous data freely.

‘ngBootstrap’, a Bootstrap 4 version built specifically for Angular5, will provide means for layout and component design, as well as give access to useful components such as modals, tooltips and pagination controls. CSS Grid will be used to control component layout on different media device sizes.



Regarding the PDF generation component of the project, more research will be conducted to confirm the optimal solution, however Electron, which is a Node.js package in combination with Electron-PDF appears to be one viable solution. The PDFs will be able to display graphical and textual summaries for different kinds of users from predefined report templates.

|  |
| --- |
| Please View The Work  Breakdown Structure & Gantt Chart  Print Out For More Information |

QUALITY MANAGEMENT PLAN

Quality management plan is a documentation that documents plan to facilitate activities that deliver quality to a product. Discussed below are quality management activities.

**Verification**

* Verification is done through style check. The format for the documents must be done throughout the whole project. Each group members are to go through all the documents to verify for correctness and precision.

**Validation**

* Validation of the functional and non-functional requirements are submitted to the clients for reviewing and feedback. Once that is done, the team member combined the documents for the project proposal and hand them back to the client to make the call on whether it outlines their goals and objectives. This process does not stop there but continues throughout the whole project during sprint reviews.

**Testing**

The team members must do testing to see what each one thinks of the outcome to avoid disagreements later. Functional testing to ensure that the functionality works, Usability testing to check if the has website is user-friendly, easy to navigate and attractive for the client and unit testing is done by the development team to ensure that a line or two of code produced are expected against the output.

**Coding**

* The code must be understandable, clear and concise to read. Updated codes must be saved and after each lines of codes, leave a comment so that the next person to carry on with the coding know where to begin. GitLab is the version control system used in project and it will be used to track the issues and changes made by each developer in the building phase.

**Documentation**

* Team members are to cross check with documents like Gantt chart and others on OneDrive to ensure that everyone is on the same page. Notify other team members if changes are made to the document.

**Meeting**

* The project manager and the development team meet 15 minutes every day except on Tuesdays and Friday where meetings are held up to two hours, to check the progress of work assigned to each team member. Meeting up with the clients will be held fortnightly to review the progress of the project as well and feedbacks will be given through this meeting.

SKILLS ANALYSIS

|  |  |  |  |
| --- | --- | --- | --- |
| Team Skills & Roles | | | |
| Name | Role | Skills | |
| David Tea | Software Developer | Java  C#  C | SQL  Graphics Design  Confident Speaker |
| Elvina Gani | Quality Assurance | SQL  C# | C  Project Management |
| Julian Abraham | Team Leader & Software Developer | Java  Javascript  Typescript  HTML  CSS  SQL  Project Management | SaSS  Angular  Node.js  Python  Jinja2  Server Management |
| Saksham Anand | Software Developer | PHP  Javascript  HTML  CSS  Java  Facebook & Google Advertising | C#  Android  Xamarin  SQL  Server Management  UI Design |

|  |  |  |  |
| --- | --- | --- | --- |
| Upskilling | | | |
| Skills | Start Date | Duration | Members |
| HTML | 02/04/2018 | 1 week | All members |
| CSS | 02/04/2018 | 1 week | All members |
| JavaScript | 02/04/2018 | 1 week | All members |
| Node.js | 09/04/2018 | 1 week | All members |
| Express | 09/04/2018 | 1 week | All members |
| Angular | 09/04/2018 | 2 weeks | All members |

|  |  |  |
| --- | --- | --- |
| Skills Requirement | | |
| Skills | Description | Required Members |
| HTML, CSS, JavaScript | Will be used to support learning of Angular | All members |
| Angular (Including TypeScript and Sass) | Used to build the front end of the website | Julian, Saksham, David |
| Node.js | Used to build the back end of the system | Julian, Saksham |
| Express | Will work as the web server for our APIs and data retrieval | Julian |
| Hybrid Agile | This is the methodology used within Deloitte and is the methodology we will follow for the duration of the project | All members |
| UI Design | The design of the UI is very crucial and must be intuitive and human | David, Saksham |
| Time Management | It is paramount that all members use their time management skills to work within the agile methodology and keep the project on track | All members |
| Communication | We have systems in place for communication within the project team. It is important that all team members are skilled in using these systems. | All members |

PROJECT DELIVERABLES (ASSESSED)

|  |  |  |
| --- | --- | --- |
| Item | Type | Detail Required |
| Project Proposal | Hard & Soft Copy | High |
| Mid Project Review | Soft Copy | High |
| Client Feedback | Soft Copy | Medium |
| Supervisor Feedback | Soft Copy | Medium |
| Poster | A3 Hard Copy | Medium |
| Portfolio | Soft Copy | High |
| Reflective Report | Soft Copy | Medium |

COMMUNICATION MANAGEMENT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Members | Item | Delivery Type | Point of Contact | Frequency |
| Team | Project Proposal | Presentation + Document | All Team Members + Supervisor | 30/03/2018 |
| Client | Project Reports | Meeting + Email | Project Manager | Fortnightly |
| Team | Meeting Minutes | Email | Team Members | Weekly |
| Team | Project Details | Meeting + Document | Client | As Needed |
| Team | Project Details | Meeting + Email | Supervisor | As Needed |

RESOURCE & BUDGE

|  |  |  |  |
| --- | --- | --- | --- |
| **RESOURCES** | | | |
|  | | |  |
| **Type** | **Unit Cost** | **Quantity** |
| Printing & Stationary | $30.00 | 6 (Months) | $210.00 |
| Server | $10 | 6 (Months) | $60.00 |
|  | | | |
| **RESOURCES TOTAL** | | | **$270.00** |

|  |  |
| --- | --- |
| **PROJECT TOTAL** | **$49,760.60** |

STAKEHOLDER REGISTER

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Position | Type | Contact |
| Lucy French | Client | External | lufrench@deloitte.co.nz |
| Awais Tanveer | Supervisor | Internal | awais.tanveer@aut.ac.nz |
| Julian Abraham | Manager | Internal | cny0166@autuni.ac.nz |
| Saksham Anand | Developer | Internal | ptg3968@autuni.ac.nz |
| Elvina Gani | Quality Assurance | Internal | ppp0105@autuni.ac.nz |
| David Tea | Developer | Internal | rry6871@autuni.ac.nz |

STAKEHOLDER MANAGEMENT

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Interest | Influence | Strategies |
| Lucy French | Moderate | High | Lucy is the Project Client. Lucy likes to be informed about what the team is about to and expects emails fortnightly |
| Awais Tanveer | Moderate | High | Awais is the Project Supervisor. Awais likes to be kept in the loop and prefers weekly meetings on Friday. |
| Julian Abraham | High | Moderate | Julian is the team leader within the group. Julian likes to know what is going on within the project and organising what must be done |
| Saksham Anand | High | Moderate | Saksham is a Developer within the group. Saksham likes to share ideas and work on them as a group. |
| Elvina Gani | High | Moderate | Elvina oversees project quality assurance. She likes to make sure all aspects of the project have been completed to a high standard. |
| David Tea | High | Moderate | David is a developer within the group. David likes to know how everyone is doing and likes to help in anyway. |

TEAM CONTRACT

This contract’s intention is to ensure all members of the team are treated fairly and on par with the required coursework to achieve an exceptional result for the client. All members hereby agree to the following points mentioned in this contract:

Timeliness

* All team members will arrive to organised meetings on time unless they have informed the team they can't make it prior.
* Team members will stay at meetings for the full duration unless leaving for a good reason that the group is okay with.
* Failure to attend meetings without informing the team will result in reprimand of treating the team to alcoholic beverages or sugary treats.

Communication

* Group members should always keep in contact with everyone. We are all reachable on Facebook, Slack and as a last resort, email.
* If work isn't going to completed on time, it is expected of the member responsible to communicate this to the group as soon as possible.
* If someone has said something that isn't agreed with, please speak up. All group members should feel welcome to contribute their ideas.

Presentation

* When in the presence of our client or mentor you will act in the professional interest of the group.
* When visiting the client on site we will follow their dress code.

Environment

* We must make sure all team members are comfortable. This means:
  + No talking behind the backs of others.
  + Let everyone have the chance to speak.
  + Listen respectfully.

Effort

* The university recommends that this paper consume 12 hours per week. We have 2 hours of lectures and 4 hours of meetings currently. That leaves 6 hours of work that will be dedicated to work on the project.
* It is expected that all members put in the required amount of work to get their tasks completed to a high standard.

**APPROVAL SIGNATURES**