Capstone Status Update and Project Testing:

DKomplex Knowledge and Organizational Management Platform (dKOMP)

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CST499: Directed Group Capstone

Client: Justin Loza

Project Status Update

The initial approach was to deploy a Microsoft Power Platform application, but this approach was not sufficient enough to be able to accurately display the strata chart with zoo, panning, and drag/drop capabilities. Instead, the project used React Flow with Express.js as a single page application. Initially the application was intended to allow for creating individual performance reports, a lesson management system to store and retrieve "lessons learned", and business units. However, these features were larger than expected and were placed in the backlog for future development. The final product was also expected to have an advanced permissions system that would allow for a user to modify users that were their subordinates, unfortunately this will not be implemented in the MVP (Minimum Viable Product). Despite not using Microsoft Power Platform as planned, Microsoft Dataverse was still used as the database for the application in extension of where using Microsoft Graph API was not sufficient enough for storing employee's data.

Current State of Project: The current state of the project represents a rough but very usable version of the tool. The tool itself has most of the main features but still has some bugs that need to be addressed before it is deployed to production. The tool most aligns with a late alpha or early beta internal release.

Individual contributions:

- Steven Casey - Authentication, Role Specification Sheet, User Data handling, Microsoft Integration

- Juan Duarte - Business units CRUD and Units interactions

- Stacy Kirchner - Graph and Dataverse API calls, UI for user's role details

- Keldin Maldonado - Websockets, Initial Architecture, React Flow Integration, Pay Scale & On-Hover Popups
- Oscar Ochoa - Initial UI layout, Dynamically scaling strata ruler

Introduction

The target audience for the dKOMP tool is the human resource and manager employees of companies. This tool aims to appeal to them by allowing for easy to organize, visual representations of their company structure using Elliot Jaque's Requisite Organization methodology. The tool also allows for employees within an organization to be able to see their connections with managers and subordinates while also viewing other employees' and their own details. This audience could range in age and occupation, however, users are not expected to have extensive technological knowledge to be able to use this tool.

This tool was tested by Justin Loza, founder of DKomplex. Justin was chosen as he will be using this tool internally to organize his employees. Justin should be able to log in using their Microsoft account, which will authenticate whether or not they are able to access the application for their organization. Once logged in they should be able to view all the active accounts within their organization by displaying an image for each employee. If the tester is the manager of an individual, they should be able to reposition the employee to the desired strata position. The tester should be able to zoom into a strata and view steps that an employee is placed on. Given the correct permission as a manager, they will also be able to assign managers to employees. When an employee is hovered, it should show their name and position. When an employee picture is clicked it should show details about their job role. If the tester is the manager for the selected employee, they will also be able to view and update any role details for the employee. Finally, the tester should be able to log out.

Client-based testing

Tasks:

1. Log in (Authenticate using Microsoft Single Sign On)

2. View hierarchy + profile pictures for all active accounts within the organization.

3. Successfully hover on user to expose name and position

4. Move, view, and save an employee's location on the strata chart based on a specific step within the substrata and strata

5. Create, update, and save manager connections

6. View pay bracket for each step

7. View and edit an employee's role details.

8. Log out

Testing Results

After testing the tool, Justin was able to give very valuable feedback. His overall views on the tool were positive and he noted he was excited to start using the tool internally. Justin found interacting with the tool straightforward and did not have to do much inferring while testing it. The overall consensus was that the tool was easy to use but some tasks could be simplified further.

Justin was able to complete all tasks by himself without much issue. During the test, Justin was able to successfully sign himself into the application using his organization's Microsoft account. Once signed in, all of the users within the organization were displayed and he was able to hover over and click on employees. There was slight confusion on what the lock

button on the toolbar did, but Justin was able to gain understanding once he pressed the button. Justin was also able to zoom in and out, which showed the different stratas, substratas, and steps. While zoomed in Justin was able to hover over the steps and see pay associated with each step location. Justin also hovered over employee's and was able to see who each employee was. Employee's were also clicked on where Justin was able to view more information for each employee. Justin was even able to add information for an employee that did not currently have any information. Another feature that was tested by Justin was moving employees around to different strata locations and changing managerial relationships. Once finished with the tool, Justin was able to successfully find the sign out button and sign out of the application.

During our testing phase, we encountered a few issues that are worth mentioning. Initially, Justin, our tester, had some trouble distinguishing between the browser zoom level and the application zoom. This caused a bit of confusion. He was able to then figure out controls after confusing this for a short while. Additionally, during Justin's test unexpected behaviors caught Justin off guard. He anticipated being able to interact with users when the grid was locked, which wasn't possible. Eventually, Justin gave up, and realized that this was something that was simply not part of the application. Another point that Justin became stuck on was when he went ahead and tried to create a business unit, and realized that this option was nowhere to be found, despite looking for it for a few seconds.

Since Justin was uncertain what the lock button was for, an improvement that could be made is to make the icon of the button more representative of this function. The lock button should be for locking the grid, but it also prevents hovering and clicking on an employee. Justin expressed wanting to be able to still hover or click on a node while in lock mode. Changing the icon can easily be changed for the final deployment, but updating the locking feature to only lock

some parts might be more challenging to implement and might be added to the backlog for future improvements. Another improvement that would be added in later development would be the include the business units since they have not been integrated into the application. In the meantime, since the business units are not working for the application, this feature would be left off the application to avoid confusion for any current users.

An improvement that was suggested would allow for creating a cleaner connection in the managerial relationship. During the test, it was shown that these lines connecting a manager to their subordinate are not always completely unformed, causing a small dent in the line. These relationship lines can also be difficult to follow and can be made more distinct. For the meanwhile, the connections are suitable but a long term enhancement would be to make the connections more bold and highlight them when a user clicks on a relationship.