Ghostbusters Scheduler

Section One: Metadata
Application Name: Marshmallow
Description: A web based scheduling application to report and monitor ghostbuster requests from users.
Application Users: Janine Melnitz - Official Secretary Ghostbusters Co.
High Fidelity Link - bit.ly/ProjectMarshmallow or click [HERE]
Final Prototype Link - bit.ly/FinalPrototype or click [HERE]

Section Two: Project Description
It’s 2015 and with the advent of big data, reduction in computation costs, the technology industry is up and running towards innovation and optimization. The industry has overcome a decade long tranquility since the launch of social media giant. Artificial Intelligence, machine learning, quantum computers are the areas where technology giants are investing heavily. Venture capitals are interested in supporting the most radical ideas. This is the scenario to which Peter Venkmen, Egon Spengler and Ray Stantz the planet saviors along with their secretary Janine Melnitz have fast forwarded from 1984.

Increase in the number of incoming requests, outdated technology, people calling the office line only to wait for hours, declining user experience and ineffective process management are only a few of the many pressing problems they are greeted with. Looking for a solution that effectively resolves most of these pressing issues, the company turns towards upgrading their technology. Their first step - Marshmallow - a web based scheduling application built for Janine Melnitz to schedule, monitor and track ghostbusting requests from users.

Section Three: User Analysis
The application will be primarily used by general public to report events and by the Ghostbusters Co. official secretary to track, schedule and monitor progress on reported events. In addition, Ghostbusters will be able to access a version of the application to track their progress, analyse the collected data.

Environment and Context
A reputed company which receives scheduling requests at high frequency requires features such as notifications and reminders in order to maintain efficiency. This is especially important for the company secretary given she'll be under continuous influx of requests. In addition, overwhelmed by incoming requests, the secretary may require automatic logging of events. (Ticket generation system)

General public who are reporting events and requesting for access, will tend to be in a terrified state and system designers need to be cognizant of that fact. Providing information to the user when they require the most should be based on context. For example, on viewing a ghost the primary action that would be useful to them is a support button that would enlist the immediate support venues where they could find safety.
As scientists, ghostbusters would require access to statistical analysis to develop theories in order to improve their efforts to combat ghosts.

Section Four: Feature Analysis
The ghostbuster scheduler application allows general public to request support in the event of confrontation with a ghost. Being cognizant of the environment during which requests are scheduled - features such as single click request, voice message recorder, check box design are critical to facilitate pleasant user experience. In addition, as mobile/web based company, features such as safety guidelines, discussion forums, knowledge graphs, social media broadcasting, terms and conditions are necessary and expected in order to support general public.

Furthermore, data analysis of event logs and performance trackers are required to optimize customer experience. These would include visualizations representing information such as past ghost occurrences in sections of the city, trending ghosts etc. A few other features such as distance calculator to the nearest office, option to upload picture of the ghost (if available), option to send an additional voice note to describe the scenario in greater depth and option to provide additional details of the occurrence are useful to support application users.

As an administrator scheduling multiple requests for an appointment, providing an option to handle all requests simultaneously increases the efficiency. Reducing memory load and providing visual cues to important attachments such as images and voice messages ensure information is presented with consistency without clutter. As context based design, the dashboard in most of the situations is accessed by the company secretary and thus setting a default username reduces time required to access the system. As an aggregate this minor design feature helps in addressing Norman’s gulf of execution principle.

Section Five: Design Process
At a higher level of abstraction, one of the goals of the scheduling application is to provide information to the system users when they need it. In order to do so effectively, there are three components that require attention.

- **Context** - Understanding the context when the user requires information
- **Answers** - Once we understand the context, the next step is pro-actively providing answers.
- **Actions** - Once we’ve understood the user’s context and provided relevant answers, a significant step applying behavioral nudges would be in assisting users to take necessary actions.
For example, how do you deal with the situation when a user confronts a ghost? (Context) The best information that can be provided to the user in this scenario is personalized safety measures the user could take undertake. (Answer) Providing a single click notification to the user in order to request an appointment, (Action). Another example applying the above design process - The user is anxiously waiting for the ghostbusters to arrive (Context), presenting a notification displaying the estimated time (Answer), button which links to the map application to track the current position (Action)

All the features incorporated in the application are based out of the above mentioned design process.

Section Six: Design Evolution
The application designed has evolved through multiple iterations over the span of 8 weeks, identifying areas to improve on the overall usability and feasibility of the application. This process involved synthesizing the classic principles of good design with the innovation and possibility of technology and science.

Phase One : Low Fidelity Prototype
A paper based prototype implemented to test core features of the application. Testing for usability and feasibility of the application was completed by conducting a cognitive walkthrough and heuristic evaluation.

Part One: Cognitive Walkthrough
Task Description & List of Actions
a. Identify New Incoming Requests From Users
   i. View New Requests
   ii. Select A Particular User
b. Review User Details
   i. View Contact Details
   ii. Review Payment Information
c. Schedule Request
   i. Enter Scheduler
   ii. Identify Available Time Slots
iii. Enter Request
iv. Confirm/Save Schedule

Results from the cognitive walkthrough can be found over [HERE]

Part Two: Heuristic Evaluation
Details can be viewed over [HERE]

Identified Problems
1. Confusion over the date mentioned beside the user i.e is it the date when the request came in or the date when the user has requested for an appointment.
2. Window showcasing selected user details is small in size thus creates confusion over the user selected.
3. The term “Schedule” doesn’t completely indicate its intended action.
4. Name of the user selected isn’t displayed while scheduling the appointment. (Only Photo Is Visible)
5. Feedback on successfully scheduling an application isn’t available.

Potential Solutions
1. Make incoming requests explicit by increasing font size and aligning it to the center to ensure the “date” term showcases when the request came into the system.
2. Create an overlay on other users to increase emphasis on selected user which makes the window showcasing the selected user details prominent.
3. Rename “Schedule” to “Add To Schedule”
4. Include Name and photo of the user while scheduling an appointment else introduce breadcrumbs.
5. Include a toast on completing the schedule.

Phase Two: High Fidelity Prototype
Scheduling application with intended features designed using Invision. To view the high fidelity prototype click [HERE]. Details regarding the testing of the prototype are mentioned below.

Methodology
To test the application features, a usability test was conducted where users were asked to complete a set of tasks, which would evaluate different features of the application. The following methods were used to conduct the usability test

- Silent Observer (1 User)
- Think-Aloud (2 Users)

In addition, notes were taken while users were completing the tasks. Post completion an interview was conducted which verified the information collect and extracted views at a greater depth.
Observations

Interesting information emerged as a result of conducting observations and interviewing three users who participated in usability testing. Results are divided into two sections namely, Favored Features and Potential Improvements. An observation is classified as favored if actions performed by the users made them confident or if users were able to find the intended information during the first attempt. Potential improvement observations are classified to be sections where users were unsure about their actions.

Favored Features

- Ease of finding intended information such as where the payment transaction was successful, whether there is an image of the ghost attached, voice message etc, spoke about the information hierarchy present in application.
- Ease of scheduling time and date provided by the date and time picker was favored by all users.
- The aesthetic design of the application was approved and recommended by all the users. The following comments were collected regarding when asked about the initial impression users had when they viewed the application.

“Very pretty design”
“It looked polished & functional”

Potential Improvements

- Font size displaying names on the dashboard caught unwanted attention. Users suggested in reducing its size.
- Users also requested for a feature to schedule an appointment even if the customer did not make a request. (Overriding Function) (May Implement This Feature, Not Completely Convinced)
- Request was made to engineer feature that wouldn’t allow any spam requests into the system.
- File name to be showcased when hovering over the icon (Dashboard)

Section Seven: Analysis

Real time user testing and performance analysis provided interesting results that have been incorporated into future work. Following are a few details: The system was tested by five users. All users have significant experience using information systems such as scheduling applications thus they form a representative sample. With an average tutorial time of 1:17 minutes, there were zero errors recorded while performing the following tasks:

- Creating a new appointment for a user with an average time for completion being 0:15 seconds.
- Viewing scheduled appointments with an average time for completion recorded as 0:11 seconds.
- Rescheduling an existing appointment with an average time for completion: 1:19 seconds
Section Eight: Discussion

As designers and product engineers creating applications for users with special needs be it for ghostbuster, or the company secretary who is under continuous influx of requests, it crucial to be cognizant of the environment and context in which these users operate. Furthermore, experiencing the physical and emotional context while these users access these applications is critical while making design decisions. Identifying the variety of contexts during which a user operates is an essential process. Conducting extensive user testing simulating each of those scenarios to the greatest detail such as including time of the day, lighting conditions, surrounding environment can provided useful insights for design. In addition, recording rich user feedback either in terms of personal interviews or use case studies provided greater depth for understanding user needs.

Incorporating methodologies such Design Thinking that draws upon logic, imagination, intuition and systematic reasoning, to explore possibilities of what could be the operating context and to create desired outcomes that benefit the end user provides useful ideas that could be incorporated into the design phase while designing applications for people with special needs. Situation when paranormal is present in the environment presenting an interesting challenge for interface design. The primary reason being in such a situation, the user tends to doubt his/her capabilities and thus operates in a transient state which is a short-lived burst of energy caused by a sudden change of state. Recording the emotions of a user during such state is crucial for interface design. For example, a user in normal state might be able to perceive information, identify white spaces as boundaries between different sections of information, deduce the login of information flow but the above mentioned might not be true when the user is in a transient state. Interface designer must be cognizant of such details involving emotional states of users when making design decisions.

Overall, as interface designers for people with special needs, immersing oneself into the situation, actualizing the operating environment to the finest detail possible combined with extensive user testing and continuous user feedback provides a strong platform towards designing products that are deemed useful and effective by their intended users.