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Project Milestone 2

Maps are a fundamental resource used daily to assist people in navigating from one location to another, sharing directions, and identifying locations of restaurants, parks, buildings, houses, and campsites. They provide an overview of landscapes, landmarks, countries, cities, and states that can be customized and narrowed down based on someone's location. The key components of a map rely on cardinal directions, with satellites and markers used to pinpoint areas and locations.

In modern-day society, maps have been transformed and incorporated into various apps, such as *Google Maps* for navigating places, *Find My iPhone* for finding missing devices, and *Door Dash*, where delivery drivers can use the app to find their customer's location.

With the ever-growing rapid flow in app usage, a problem that we identified is the unmet need of an app created to update real-time maps in warzones, such as the Gaza Strip, in which residents can interact with a map that includes markers for various zones, such as safe zones, hazardous zones, and environmental zones. In detail, users can mark areas that exhibit specific dangers such as bombing and military tank presence. Though we have many ideas and a huge plan for the app, for now, we plan to create a feature for users to add text and label the areas based on a color-mapping chart for easy useability and understanding.

As observed from afar, some maps have been shared within a group of individuals living in specific areas of Gaza; however, an update of each map in real-time does not exist, and it can be dangerous to navigate which areas are resourceful and safe for passage. Accessing a map with markers added by other users will allow for more efficient

and cautionary decisions for themselves and their families. The mental strain and weariness of navigating treacherous waters is beyond imagination and truly heartbreaking. However, by providing some comfort and ease in the daily lives of those in war zones, creating an app where users can log in, pinpoint a location, and make key points on a map can be lifesaving.

Although we are unable to directly observe Gaza, we plan to get around this by conducting interviews with individuals who are "primary sources" in the situation or have a great deal of knowledge on the conditions, so we can implement a useful design. This will consist of a carefully prepared list of interview questions. It is imperative that we connect with individuals who can provide insight into the situation and help shape our application model. Currently we are looking to interview journalists, aid workers, and any civilians linked with the conflict.

Moreover, while the app is designed for people in Gaza, to test the app for functionality, we will conduct research through a simulation on UNO's campus. We will create locations where distinct groups are scattered across campus wearing different colored outfits to represent different zones. The users are challenged to locate and navigate the zones across campus. By creating this simulation, the users will assist by providing feedback and suggestions with the interface.

We intend to create an app that is unique in combatting an unsolved problem but understand that other apps were created that have similar abilities but are focused on different issues. For example, *Waze* is a navigation application that focuses on assisting drivers through traffic and other road work problems. The app relies on users to update information to the app in real time to assist other drivers, fostering a sense of community amongst users.

Similarly, *WanderSafe* is an app that has the potential to be a competitor against our app since it is an interactive system with a location-based map. Users can add information about specific areas on the map such as marking areas as a danger zone, tread-carefully areas, incident zone, and more. The app focuses on neighborhood watches to keep the community aware of their surroundings. Unfortunately, there were many issues

with the app. It would request the user's address even though location services were on; there were lags and glitches and adding new locations as safe had error messages.

Lastly, *Citizen: Local Safety Alerts* is an app that provides real-time alerts, live videos of incidents, updates on natural disasters and protests, and the ability to monitor yourself or loved ones in an area. Users can report issues and be up to date on the latest news.

The app will address the following archetypes – a concerned parent trying to protect their family from a conflict zone, a humanitarian aid worker coordinating relief effort, and a young navigating commuter in an unstable environment.

In conclusion, we would like to note that we are aware that the design, though useful, can cause issues in real-life implementation. The Map would need to be accessible only to people that are affected and should not be free to be viewed or edited by just *anyone*. In the future, further design can restrict the map's view to the intended users. This feature can be created by including an accessible channel only to people invited and giving administrative permissions to specific users. A specific idea would be that a trusted user will create and maintain the channel and promote administrators as they see fit. Palestinians *typically* have a different area code than Israelis so it would be useful to let users enter via phone number rather than just a username. This would be a good safety measure for the future since locals share similar area codes. The focus in this Mobile Apps Development course will be to create the app and make it fully functional. There is no intention to implement the app for real-life in this course due to time constraints.