Link: https://mcmasteru365-
my.sharepoint.com/:w:/g/personal/mossers_mcmaster_ca/Eerghlb2waNLnOWW2lK5sNY
Bb49tIpGrqtzihiaJNmUHUQ?e=zJ30SB

MacNav Requirements – Fall 2024

- (Hashim) Must be able to handle traffic from all university students at any given time
- (Nehad) Must take in real time weather data
- (John) ...
    - Allow users to input an initial location and destination and provide directions from initial to destination
    - Allow users to select from different directions types (ex: Driving, Walking, Biking, Flying)
    -
- (James) Contain an X-Factor that separates MacNav from Google Maps, Apple Maps, Waze, etc. To be a sustainable application).
- (Esam) ... Must contain real time traffic data (cars/pedestrians) to optimize routes
- (Aadvit Khanna) It must have real time data of all the rooms occupancy such that the user can see whether its available or not, it should also have different accessibility modes to accommodate all.
- (Saad Khalid) Must be able to remain highly available with a sustained load of 2x the student + faculty population logged into the site at one time.
- (Nathan)
    - Must be able to visually display a map at different scales (ranging from X to X with continuous increments within this range.)
    - Displayed map must be intuitively navigable by the user
    - User must be able to easily and rapidly locate their location on the map (within a tolerance of X meters) on devices that support precise or approximate location data.
    - Displayed geographic (to user) information must be current, from within 5 years of the view date.
- (Mariyam) This product should take users to their desired destination using visualized directions and audio cues.
- (Meena) must accessibly provide correct and safe routes from one place to another
- (John) ... Use real time updates 24/7
- (Kevin) ... Must be able to find multiple different routes/fastest route available
- (Aditya) ... Must be able to have different options (avoid tolls, etc...)
- (Hareem)
    - Must be able to find a route from one specified location to another,
    - Must be available globally
- Tanisha)

- (Omar Alam) Navigation system must take into account real-time traffic conditions when estimating a route.
- (Hemal) find most optimal (shortest) difference to and from location
- (Stanley) App shall comply with data privacy / government regulations
- (Jeffrey) App shall provide accurate directions to around within the McMaster campus
- (Elzaria) …
- (Musab) App should be able to plan the journey by considering the fuel in the car by showing gas stations on the way that have the cheapest gas price
- (Manav) Finds the nearest electric charger
- (Andreas) … The app shall have all legal adresses mapped and available for search
- (Aditya) …The app should lead the user to the correct destination address.
    - The app should be able to re-route if routes change unexpectedly, traffic closure
    - The app should be user friendly supporting different modes of communication such as text to voice speech
    -
- (Ada) User must be able to change visibility i.e light/dark mode
- (Carter) The system must have options for directions by walking, public transit, and car
- (Mathew Nacev) … The app must provide directions via car, transit, or pedestrian travel on how to travel to a destination of the user's choice
- (Bob) Gives directions
- (Josef)
    - Multi-modal (car, taxi, transit, walk, bike, etc) directions with support for switching modalities
    - Accurate routing based on current and typical traffic conditions
    - Crowd-sourced (and government/agency-sourced where available) hazards, unsafe areas, etc
    - Ability to specify a "route archetype" or time a specific route (i.e. I want to the 401, not the 403 or QEW or 407)
- (Zifan Si)
1. Must be able to perform route planning.
2. Must be able to perform map visualization.
3. Must be able to perform search
- (Ronav) Must be updated frequently enough to account for road name changes/closures that occur
- (Cass Braun)
    - Shall support driving and walking directions
    - Shall be able to remember the user's home address
- (Claire) must be able to change car icon to a motorcycle
- (Christian) …
    - App must be able to show the different roads and routes.

- o Must show fastest way to get to a location but also alternative routes.
- o Have the ability to make stops on the way.
- o Must be able to predict traffic during longer trips and change on the go so it is always up to date.
- o Have information regarding Tolls and how much it costs based on your trip
- (Ahsan) …Must be able to provide alternate/best route based on data
- (Vanessa) Be able to update the deired location through voice to help with safer driving
- (Javayria Mudassar)
  - o Shall accept one destination from a user at a time
  - o Shall only display the most time-efficient route to user
- (Ujjwal) Must have the optimized version of dijkstra's algorithm, which shows a feasible path to take.

- (Matthew Nesbitt)
  - o Must be compatible with a variety of devices (phones, PCs, etc.)
- (Victor) App must be able to showcase real time changes to roads
- (Ahsan) … Must be able to detect cops
- (Aaron) Shall allow users to download maps to use offline, covering at least 80 percent of urban areas
- (Ayush Patel) … The app must provide users with the ability to search for locations when the app is launched
- (Waqar Ul-hassan)… The app must be able to access your location (if the user allows it)
- (Stefan Patroi) Must provide directions for different modes of travel
- (Moustafa) … The app must not be be able to have access to personal information
- (Khaled - Live updates (traffic), optimal routes using whatever graph algorithm)
- (Hank) Destination can include hours of operations
- (Jerry) Has an easy to use UI
- (karim el basiouni) must be available on phones and laptops and cars
- (Daryl) App must be available on Android, IOS, and web platforms
- (Hebah) … Must give accurate directions for all modes of travel and include time it might take in accordance with traffic (if by car). Must include all disruptions for bus/train schedules.
- (Tvesha) Must be regularly updated with McMaster locations and accessible for all students (with various resources, abilities, accommodations etc.) to use.
- (Om) Must be able to update real-time accidents, constructions, police-checks and etcetera.
- (Saumy) … must have a feature for drivers to report accidents
- (Ferrari) Must be able to calculate the fastest and alternative routes using map
- (Amal) Must be able to re-route
- (Jacob C) Must contain significant landmarks and locations.

- James) Everything google maps has
- (Stefan Patroi) Must display sorted POIs (gas, groceries etc.)
- (Jacob) Must be able to accurately locate vehicle.
- (Enes) Must display shortest path to the selected location
- (Che) ...
- (Neha) must be accessibility friendly
- (humna) ... a Must find a path to user input destination
- (berk yilmaz) must use less than 4G of ram
- (Michael Roberts: Must provide driving, public transit, biking and walking directions, always optimal) ...
- (San) Find the Shortest path to the destination with different modes bike car transit ....
- (Jay)
    - Users are able to immediately report obstacles in during the navigation mode with a simple, non-distracting UI
    - Sufficient number of reports (3+) will alert all other users passing in the area
- (Andy Huynh) Must not get sued by Google or have features of apps that might cause legal concerns(Michael Roberts: Must display every street and address, throughout the world)
- (Michael Roberts: Must be readily updated (e.g. natural disasters(
- (Andrew) Must allow suggestions for multiple paths depending on traffic
- (Hamza) Should provide real time updates regarding traffic and road closures/detours
- (Michael Roberts: Must offer MyMaps feature: create and annotate the map (or a subsection of it) from a user standpoint) ...
- (Tanisha) ... Must be able to add multiple spots and update walking distance and time accordingly
- (Baoze, Derron) Must support multiple methods of transportation
- (Nour) real time surrounding road updates.
- (Imaad) Must support routes without tolls and/or without highway
- (sarah) calculate efficient route
- (Ahsan) Provide arrive by and leave by times
- () Must
- (Kosei) Must include route search enginese(Sophia) Must be able to withstand heavy traffic at one time
- (mazen) Must be compatible with different modes of transportation.
- (fouzan) must be able to display accidents in real time, and potential detours.
- (Shivya) ... Must calculate route that uses existing roads
- (Omar) Generate an ETA from A-B relevant to mode of transport and within 1min of other of competitors (Google maps)
- (Mohib) Should be easy to integrate with other apps/websites.
- (Seaya + Nawaal) Must be deployed 1 year after project invoice is paid

- ~~(Andrew Andrew) Should suggest new routes depending on changing traffic conditions~~