User Cases:

1. New runner: Short distance and low elevation levels → free route/make your own route
2. People who only have time to run at odd hours (very early, very late): low elevation levels → doesn’t use third party authentication
3. Experienced runners: Varied distance, varied elevation levels
4. People who’ve used the app before/ a lot: access profile, access favorites

(a) New runners may just want to run when they open the app. They may not want to set up their personal data or choose a route. So, they hit the “quick start” button, which just shows the criminal condition on the map. While they are running, the app will follow the route on the map. The time taken and distance run will be shown after finished. If they decide that they want to save the route, the system will then ask them to log in. If they want, they could also save the route as their favorite. However, the device may lose the GPS signal when running. The app cannot map the route without GPS to show where the person is. In that case, we will just find the best route for the part that has no signal. And if you saved it as favorite, and you don’t like that part, you can just edit it the next time you run.

(b) It is late at night and the user doesn’t want to bother logging in via the third party authentication, so the user chooses to use the app without logging in (as a guest). The user is directed to the New Route screen where the user is allowed to plan their route. The user inputs the distance and terrain specifications, around 3~4 miles (not too lengthy since it is late at night) and rather flat, non-hilly terrain (since it is dark and running on hills and uneven terrain probably wouldn’t be the smartest idea). Other than the potential problems listed above, another problem that could occur at this stage would be that since it is quite late at night, for the distance and terrain the user wants to run, there may not be routes/courses in the user’s vicinity that are crime-free (in the worst case scenario that many crimes are occurring near the user’s area simultaneously or are still deemed unsafe after an earlier incident). If this is the case, perhaps the route produced for the user would be the “most safe” of all the potential routes (a route where the crimes had been the least recent). The route should notify the runner where the incidents had occurred, so as to be aware of the situation. While on the run the user would be notified of any new crime reports on or near their route. Since the user did not log in, post-run the user will be provided with the route, distances, and time of their run, but not with any health information such as the number of calories they burned (since they haven’t put in their personal information enabled by logging in). Therefore, the post-run/completion screen shown to the user will not be the complete screen showed to those who have logged in. After pressing the finish button, the user will be taken back to the New Route screen.

(c) The user is an experienced runner who enjoys various intervals/terrain. They open the app and choose the new route screen to enter in distance and terrain. The app creates a few routes which match the requested specification and it displays the images of these maps as well as their exact details. The user selects the image of the route they would like to run and hits start. Once they have finished their run they will be prompted to login and save their route as described in the ‘user login story.’

(d) The user opens the app and is brought to the start route because the app kept them logged in. They select the favorite routes button and are brought to a list of routes they have saved previously. They select one of them and a picture of that route is shown along with their average running time on this route, the terrain, how safe it is and how long the route is. If the user doesn’t start the route from the same place as last time it will consider the closest point of the route to their location the new starting point for this run. The app will warn the user if all their favorite routes are too far away and ask them if they would like to search for a new route or make their own route. The user decides to make their own route and the map will now show where they have run for this route. Once the user is satisfied with their route they select the end run button and are prompted to save this route to their favorite. The user does add it to their favorite and names the route. The user is brought back to the starting page.