

RouteMyRun

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The Problem

For most joggers the who, what, why and when of jogging come easy, but many people don't have a very good handle on where they will be running. Some people may mindlessly run until they get tired and then run or walk back home, or some people may have to familiarize themselves with the particular area they are in by looking at a map or exploring the area. If a jogger is out of town and wants to go for a run, this can be a hindrance on the quality of their run due to the fact that they don't know the area. Our application aims to solve this problem by providing an interface that aids in deciding where to run and finds the best route for you in any particular area.

Currently, people have to resort to mapping out a run using Google maps or by simply exploring an area on foot. Many times it is impossible to know which routes are scenic, safe, or challenging without simply running the route. But doing so can end up being a waste of time or even dangerous. Also, it is difficult for avid runners to find routes with similar characteristics as their favorite routes or to find slightly more challenging routes as they become stronger runners. RouteMyRun will provide a solution to these problems. Similar to currently-available applications, it will provide useful information such as pace or distance and will store information on all of a person's past runs. In addition, our application will provide a map interface, which will allow users to plan routes more easily. Routes will be able to be generated based on input such as desired distance, difficulty, or points of interest. The difficulty of both routes that have been previously run and routes that have been planned can be calculated based on distance and elevation change. Users can also review and rate past routes and safety warnings will warn users of areas with high crime rates, high traffic, or areas with little or no lighting.

The Participants

In choosing our contextual inquiry participants, our goal was to sample as wide a demographic as possible. In keeping within the context of our project, all of our participants either currently are or previously were fairly avid runners. However, due to their different backgrounds, each participant has unique running behaviors and histories.

Our first participant was **Laury Tarte**, who is a twenty-two-year-old undergraduate and an officer of the Husky Running Club. As an officer, her responsibilities include planning or choosing routes for the club members based on difficulty, length, scenery, and pace. She has also run numerous 5K and 10K races, several half marathons, and is currently training for her first full marathon, to be completed in November. As an avid runner and someone who holds a running-related leadership position, we thought that Laury could provide valuable insight into what goes into planning and executing an organized run. Our interest specifically was to discover how she would plan a route in the context of an unfamiliar area. We began by meeting Laury in her home and observing how she prepares prior to a run. We then drove

her to an area in Madison in which she has less experience running, and accompanied her on a twenty-minute run through some residential neighborhoods. As apprentices, we tried to influence her behavior as little as possible, and simply asked her to tell us why she made decisions as she did, how she currently tracks and records her running progress, and how she plans routes when in an unfamiliar location.

We chose our second participant, **Evan Riggs**, for two reasons: his dedication to running and his unique knowledge of our customer base. He has participated in marathons all over the country, including the prestigious Boston Marathon. Last summer, he completed the Seattle Rock 'n Roll Marathon, finishing fifteenth overall and third in his age group (18- to 24-year-olds). As an employee at Super Jock & Jill, he is required to have an in-depth knowledge of running in order to provide excellent service to his customers. We felt that Evan would be very aware of current trends in the running community due to the high volume of runners that he encounters in the workplace. When observing Evan we asked if we could run with him on one of his "light" 45-minute runs. We requested that Evan behave as he normally would for one of these runs, with the added constraint that he run a new route. Evan's normal routine consists of leaving his house and running around the U-district/Roosevelt area. This means that he tends to run on surface streets, sidewalks, and through a few parks. As apprentices, we followed him on his run and asked him to verbalize the direction decisions he made as they occurred to him.

The last participant we chose was **Paul Halstead**, a fifty-four-year-old Boeing employee who has run twelve marathons, the last of which was completed in 1995. Although once a very dedicated runner, he has not run regularly for about ten years. We chose Paul because we hoped he could give us the perspective of a seasoned runner, which would help us determine if our application would be appealing to a older demographic. Additionally, since he is not currently running, we felt it would be beneficial to discuss ways to motivate him to return to a running routine. Similarly to our other participants, we began our observation by meeting Paul at his home in Issaquah. After he guided us through his preparation, we left his house and followed him on a two-mile trail run, during which he discussed what motivates him to run and how he decides on routes and distances in both familiar and unfamiliar locations.

The Results

In general, we felt that all three of our participants supplied valuable insight into the kinds of support that would be helpful for their particular running needs. Although we began our contextual inquiry with a certain set of expectations, truly embracing the master-apprentice model was easier said than done. Additionally, although we expected all runners to behave in roughly the same way, we were surprised by the variation we found among the different runners' behaviors. While all of the participants shared common tasks, each had unique aspects of their running routine as well.

The most overarching task that all three runners consistently complete and describe as very important is the collection of certain statistics about their runs, including distance, pace, time, route, and any comments that may have contributed to these other factors. All three runners also mentioned their preference for running in a loop, instead of running out and back on the same path. However, when the participants are unfamiliar with an area, they are more apt to stick to one path to avoid getting lost. As far as location, our participants agreed that they would generally rather run from home in order to save time and energy on transportation. Not surprisingly, the three participants all favored running in scenic areas, preferring to avoid main roads with excess traffic and concrete sidewalks. As a general rule, all of our participants tend to go on runs that they have experienced previously. We believe that prior knowledge plays a big role because of the difficulty of continually searching for and exploring new routes.

Another similarity that we found particularly telling was that all three participants mentioned using online maps, such as GoogleMaps or MapQuest, to plan routes in unfamiliar locations. In addition, all three had anecdotal evidence of the downfalls of this system. Because this strategy required memorization of the suggested route prior to the run, it sometimes resulted in unexpected outcomes. While on a new run to Tukwila, Evan went eight miles out of his way due to a wrong turn. In South Korea, Paul mentioned that he would have liked to have done more outdoor running, but was prohibited from doing so by his lack of knowledge of the surrounding area. Laury, while on vacation in Alabama, got very lost on a run and ended up in an unsafe area. These three examples clearly show that such problems are not uncommon in the running community.

It was interesting to observe the equipment that runners brought with them during their runs. Both Evan and Laury used GPS watches to provide information related to distance traveled, pace, time, and a rough approximation of their route. However, although they used the basic features of the device, neither Evan nor Laury used all the capabilities offered by their watches. Both mentioned that they could figure out how to use the additional features, but neither had the motivation to learn how to do so. Additionally, Paul and Evan both used digital watches; Evan used his as a back-up for the GPS watch, while Paul used only a digital watch to track time and pace.

Although there were many similarities between the runners' behavior, each participant also displayed some unique and interesting habits and preferences. For instance, Laury is the only participant who tracks her progress using an online system (Nike Training Log), and keeps track of such things as weekly goals, mileage on her shoes, and cross-training activities. As a young, college student who studies engineering, this comes as no surprise to us that her system would include more technology than our other participants. She also expressed more interest than the other participants in running in scenic areas, and more concern for the safety of the areas in which she chooses to run. This is likely a result of her small stature and gender. Laury also appeared to have the least awareness of where she was headed of all the participants, saying only that she was trying to head in a general direction. It is probable that

this was due to her confusion about how to make her GPS watch acquire the satellites while running.

As the most avid runner in our group of participants, Evan seemed to have the most engrained routine and was very content with his current system. Although he mentioned not being very technologically-savvy and further stated that having his running data uploaded automatically would not be helpful for him, he did mention that he would prefer a more intuitive interface on his GPS watch. Evan also seemed the least bothered by running in an unfamiliar location or losing his way, saying that if time allows, he likes to be adventurous and explore new places. A final observation about Evan's unique behavior is that he frequently runs under time constraints, as opposed to mileage. We feel that his hectic work schedule imposes this constraint, more than any other conscious consideration.

We feel that Paul exhibited different running habits due to his age and background. Since he lives in a more rural area, the routes from his home are limited. As a result, he has explored all routes near his home and is very familiar with the area. He stated that he would be more willing to drive to another location in order to vary his routes and go on longer runs. In contrast to Evan, Paul mentioned that he always runs a specific distance as opposed to a specific length of time. We think that this is because he runs more recreationally as opposed to competitively and is therefore more concerned with run completion than speed. As a specific result of this mindset, he paces himself only by means of his less-precise digital watch as opposed to the more precise GPS watches worn by the other two participants.

New and Existing Tasks

EASY: Go out on a quick run and record your statistics.

For most people, it is difficult to set aside large periods of time to go running. Quite often, people must resort to a quick run during a one-hour gap of time in their busy day-to-day routine. For example, Evan often uses his lunch break to squeeze in an extra few miles during the day. On these occasions, he chooses routes that he already knows so he can avoid spending extra time figuring out where to go. He is also very dedicated to recording his running statistics and always makes sure to leave time to update his written running log. For instance, on our day of observation he only had one free hour, so he chose to run for forty-five minutes in order to leave time to record his statistics afterward. Although this information could be recorded at a later, more convenient time, doing so may lead to losing precision in the information logged or forgetting to enter the necessary statistics altogether. Evan found that inputting his statistics directly after his run was highly favorable. When trying to fit in a run, one has to make a conscience effort to record the statistics as well or it is likely that potentially useful information will be lost. The need to get things done quickly often means that recording the statistics of a run becomes too time-consuming.

MODERATE: Planning out a weekly running schedule

For runners from every background, scheduling is an important aspect of a running routine. Specifically, when training for a race, it is important for runners to build a weekly schedule in order to have a plan beforehand of what types of runs or what mileage the week will entail. Additionally, many people find the simple act of scheduling runs to be a great motivational tool that helps them complete their weekly goals. Having a schedule proves to be very valuable in many situations.

When we asked Paul about his route, he mentioned that when he is training he likes to have a schedule of all the runs he wants to do each week. He likes to know ahead of time what he wants to accomplish each day so that he can not only plan his day accordingly, but can also feel the satisfaction that comes from adhering to his scheduled plan. He stated that "what would motivate [him] was being able to lay out [his] schedule and then sticking to it."

Other runners may find it important to diversify their weekly runs in terms of length and speed in order to fully utilize each day while not causing strain on their bodies. However, a runner's best intentions may be largely restricted by the activities of his or her busy life. For example, whether he is training or not, Evan always knows what type of run he wants to complete each day and strives to stick to this schedule. Specifically, on the day of our observation, Evan mentioned that it was his "easy day," due to the fact that he had run 18 miles the previous day. For Evan, this scheduling is necessary to allow his runs and his work schedule to coincide.

Weekly running schedules can be beneficial for many reasons, but creating such a schedule can be challenging. Scheduling runs to conform to a busy life, while providing challenging and fulfilling daily workouts, can take a large amount of time.

DIFFICULT: Plan a new running route of 7 miles, of moderate elevation change, and that passes through both Madison Park and the UW campus.

In our experience, people rarely go on runs without a goal in mind. It could be an amount of time they want to spend, a distance they want to travel, a certain terrain they would like to tackle, a particular area they want to explore, or some combination of these. Every time a runner chooses a route, it is based on some set of constraints that affects their decision of when and where to run. When creating a new run, it is also likely that people have goals like these in mind and therefore create a run designed to meet these goals.

For instance, Laury's decisions are influenced by the distance she wants to run and the fact that she enjoys running through parks and near water. When planning a new running route, she uses the Gmaps Pedometer to measure a distance in the chosen area. She chooses a point on the map and marks off distances through areas in which she wants to run. She mentioned that sometimes she makes a route that passes by some preferred landmark and then

discovers that her route is too short. To solve this problem, she deletes the last portion of her route until she gets to a point where, by altering the route, she can reach the desired distance. Once she figures out an acceptable run, she memorizes the route and then goes out to run it. She also informed us that she cannot deem a route acceptable until she knows about elevation change, traffic volume, and the safety of the area. Such characteristics can only be determined by physically running the route, since Gmaps does not provide this type of information. If the route proves to be flawed, then she must go back and start the process over again. Finally, once the new route passes all of her requirements, she can add it to her repertoire.

In short, people know what they want to get out of a run. Some of these constraints can be met by just looking at a map. But in many circumstances, the only way to know if a run meets all of one's specifications is by trial and error. Therefore, if a runner already has routes that satisfy his or her constraints, the process to make a new route is too time-consuming and error-prone to be worth the effort.

Sketches



