RouteMyRun

Task Analysis

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Problem and Solution Overview

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.

Tasks

Easy: *Go on a quick run and record your stats*

Michael is a French exchange student that is living in the near the UW campus. He wants to go on a short run through the U-District. He is an avid runner and he knows the route he would like to run. He keeps a running log and will record the pace and the distance of this run.

Medium: *Plan a route, insert waypoints*

Bertha is a stay-at-home mom living in Seattle. She doesn't have a lot of time and has to hire a baby-sitter when she goes on runs. As a consequence she likes to go on long runs to get the most bang for her buck. She loves to run through Madison Park, which is near her house, and she is a UW alum so she occasionally likes to run over to her alma mater. For her it is important to avoid excessive elevation change, but she doesn't mind a few hills. She is going to plan a longer run which will start at her house and take her on a loop through both places and take into account her preference for only moderate elevation change. She also want to avoid as many major roads as possible, she would rather run back on the same street than run in heavy traffic.

Difficult: *Look up past runs know past pace and run the same route faster.*

Davie is a slightly overweight 43 year-old man. At the suggestion of his doctor, and to the delight of his wife, he has begun running consistently for the first time in his life. It has been about a

month and he feels like he's ready to take it to the next level. He wants to know his best pace from his favorite route so he can try and run the same route at a faster pace in order to complete it at an overall better time. Davie knows he needs to take it slow due to his age and trick knee, so he only wants to improve his run time by a small amount.

Task analysis questions

1. Who is going to use the system?

The audience that will use our application most is joggers, from avid to new, with enough money to be able to afford a smartphone. Because of this, our target demographic is most likely young to middle aged, English-speaking adults. There is no running experience required, but only a desire to get themselves more motivated to run or to improve current performance.

2. What tasks do they now perform?

Currently, these people jog regularly, plan routes, keep track of their post-run statistics, and seek to improve upon their best running performances.

3. What tasks are desired?

Our target demographic would like the ability to have their running statistics automatically tracked and logged, an easier means to plan and store running routes, the ability to race against their personal best times for a given running route, and the ability to review their previously logged statistics.

4. How are the tasks learned?

The majority of the knowledge needed to use RouteMyRun would simply be how to operate a smartphone. Any additional knowledge of how to perform tasks using RouteMyRun would be learned through experience and time using the application. Our application will not provide a "help page"; we are aiming to make all the available operations as clear and intuitive as possible.

5. Where are the tasks performed?

The possible locations that tasks can be performed are different depending on the task being preformed. For instance, having statistics tracked will almost exclusively be done outdoors, in all sorts of conditions. But the task of creating a route or reviewing your statistics can be done anywhere. A person could decide to do these things immediately before or after a run, or while doing something completely different, like riding a bus home from work.

6. What's the relationship between customer & data?

In order to maintain a level of privacy of each runner's data, he or she will be required to enter a username and password upon starting up our application. Each runner's data will be accessible from both their smartphone and through the internet, since they will be able to sign up for an online account. The statistics are important to our customers because they provide important

information that can help them improve themselves and be motivated to work harder. In addition, some people rely on their statistics while they are training for a race, such as a marathon.

7. What other tools does the customer have?

Many runners, including all three of our contextual inquiry participants, like to keep running logs, either online or in a written notebook. To determine these statistics many runners use digital watches. Also, even though our customers own smartphones with GPS capabilities, many of them invest in products like GPS watches to help them keep track of their statistics.

8. How do customers communicate with each other?

Currently our customers communicate with each other by joining running clubs or acquiring a running buddy. Because our application is less focused on social networking, these methods of communication will not be affected. But perhaps, when our users discover awesome new running routes using our application, they will be more inclined to share these routes with others.

9. How often are the tasks performed?

Every time a customer runs, their statistics and route will be tracked and logged. The most frequent tasks that our customers will perform will be to either run a route that they have previously planned out or to go out on a quick run. Customers will plan out new routes or review statistics moderately often.

10. What are the time constraints on the tasks?

Many people don't have much time to go on a run or prepare for it, and have the desire to just "go for a run." Statistics are still important to most users, but they don't want to have to stumble through a bunch of screens to get them, when they have a limited time to go on a run. Customers also want a quick way to find a route back to their starting point when they are in a hurry. Also, runners don't want to have to fiddle with their phone if they decide to run off the planned route.

11. What happens when things go wrong?

If the system fails during a run, a user may have relied on the product getting them back home and can no longer do so with RouteMyRun. In this case they may end up using the map feature on their phone, but their run statistics would not be recorded. If the system fails while they are planning a route, users will not be affected as severely, but would most likely not be inclined to use our product in the future.
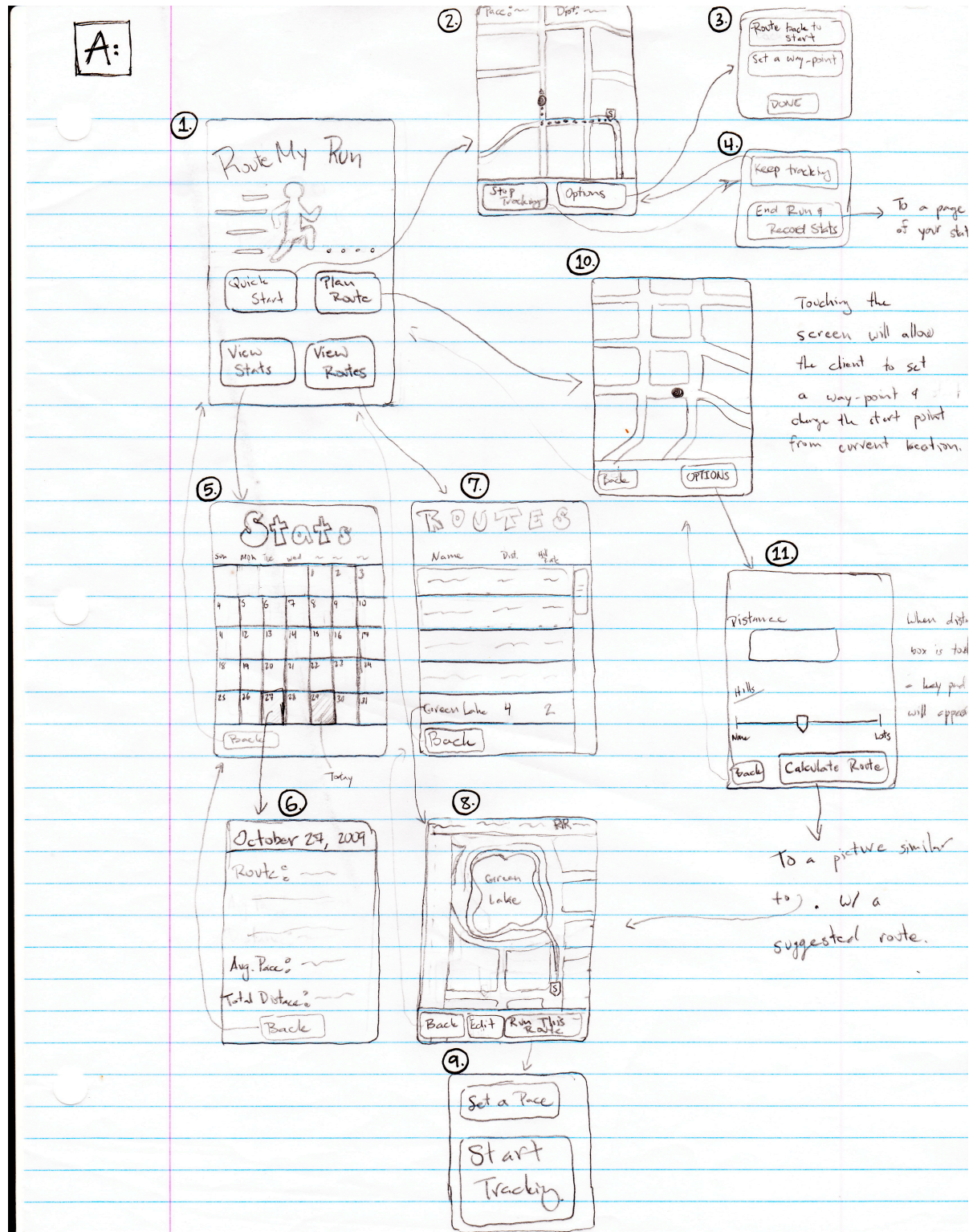
Storyboards

A:

1. Route My Run
   - Quick Start
   - Plan Route
   - View Stats
   - View Routes

2. [map with Pace & Distance]
   - Stop Tracking
   - Options

3. Route back to start / Set a way-point / DONE

4. Keep tracking / End Run & Record Stats → To a page of your stats

5. Stats [calendar]
   - Back
   - Today

6. October 27, 2009
   - Route:
   - Avg. Pace:
   - Total Distance:
   - Back

7. ROUTES
   - Name   Dist.   Hill
   - Green Lake   4   2
   - Back

8. [map] Green Lake
   - Back   Edit   Run This Route

9. Set a Pace / Start Tracking

10. [map] Touching the screen will allow the client to set a way-point & change the start point from current location.
    - Back   OPTIONS

11. Distance [ ] When dist box is too a key pad will appear
    - Hills   None — Lots
    - Back   Calculate Route
    - To a picture similar to. w/ a suggested route.

Figure A

B:

1.
ROUTE MY RUN

Quick Run   Plan New Route   View Past Run Stats

Quick Run

View Past Run Stats

Plan New Route

2.

current

Total Time 08:37 | Distance Run 0.93 | Pace 8:37

Pause stops clock, doesn't affect pace, waits for resume

Done Button

3.

Total Time   41:23   min

Distance Traveled   4.67   mi

Average Pace   9:51   min

Review Route   View Statistics

Takes you to a map of your route, with your path highlighted

Takes you to stats main page, but with new run added

4.

1. Desired Distance   0 . 0

2. Hills
    Flat   Hills

3. Waypoints   ADD

GO!

Goes to maps page

5.
Click to add waypoint

Fremont Troll

Gasworks Park

DONE

6.

Sort by: DATE   DISTANCE   PROXIMITY

Change Run

Race Myself

Date 09-12-08 Time 35:31 Distance 4:34 Pace 8:37

Pulls up full screen map with this route outlined

Pulls up full screen map with a shadow of the route that races you as you're running

Figure B

C:

① Route My Run

Quick Start

Plan a Route   View Past Runs

Odometer: 126 miles

② Run Details:

Start: Current Location → To map

End: Current Location → To map

Distance: [6] mi

Difficulty:

0   6   10

Back   [⌂]   Next

③ Add Waypoints

Search: [🔍   ] Go

Back   [⌂]   Next

④ Quick Run

Pace:
Distance: 2.1 miles

[❚❚] [▨] Get me back

⑤ Post Run Stats:

Mileage: 4 miles

Pace: 8:30

Elevation: 400ft [〜] → To graph

Time: 30 mins

Done

Figure C

Selected Interface Design and Reasoning

The overarching goal in designing our interface was to provide users with an intuitive and interactive way to plan and execute new and existing running routes. What we imagined was a kind of route database that would allow for the storage and retrieval of various running routes, as well as the creation of a new running route based on a series of constraints. These goals were confirmed by our contextual inquiry, during which all three of our participants recounted anecdotal examples of getting lost when out on runs in unfamiliar locations. After discussing and refining the features of the product, we ultimately chose the best features from each of our three storyboards and combined them into one interface. We felt that no single storyboard was far superior to the others, but decided that a combination of the best features of all three would best suit our users' needs.

The home page for our interface will consist of three icons: Quick Run, Plan New Route, and View Past Routes (see Figure B.1). We chose to only have three buttons, and to make them visual, for ease of access to the various features. If Quick Run is selected, a map view of the current location appears, with the capability to start, pause, or stop your run at any time. The Quick Run feature was designed as an aim to get people who were unfamiliar with the product out running as quickly as possible, with a simple enough interface to guide them easily. In addition, our contextual inquiry participants stressed that they are sometimes quite pressed for time or their route is unimportant, and we felt that a way to begin a run immediately with no planning overhead would be desirable. Once the run is completed, you will see a quick view of your statistics on this run. All of our contextual inquiry participants showed interest in knowing and recording their post-run statistics, so we felt that a summary of this information should be provided.

If Plan New Route is instead selected, you will be taken to a screen where you can input desired constraints, including Starting Point, Ending Point, Distance, Hilliness, and others. Choosing a Starting Point and Ending Point can either be done by inputting an address or landmark into the input field, or by clicking on the map icon next to the input and visually choosing a point on the map. The Starting Point and Ending Point default to the user's current location since most people will be running a loop from where they are. The screen also includes two buttons: one which allows you to Search Now for routes matching your requested criteria, and another label, Add Waypoints, which allows you to insert intermediate destinations along your route (see Figure B.5). After a route has been generated, it is possible that you would not be pleased with the exact route it has given. In this situation, you can select a button called Try Again, which will generate an alternate path, still within the given constraints. Once you are satisfied with the generated route, you can either select "Start this run," which begins tracking your run, "Save this run," which stores your planned run for use at a later time, or "Make changes," which takes you back to the previous page to make further changes.

The last option from the home screen is to View Past Routes. If this icon is chosen, you will be navigated to a list view of all the routes you have created or run, with the ability to sort by date, proximity to the current location, or distance (See Figure A.7). When you click on a specific route, you are taken to a map view, which displays along the bottom of the screen the Date on which this

run was last completed, your personal record of the Time it took to complete this route, the Distance of the route, and the average mile Pace. From this view, you can slide your finger left or right across the screen to move between routes. Along the top of the screen will be another task bar with several buttons. One will be Choose Run, which begins tracking on the currently selected route. Another will be Race Myself, which will begin the run, keeping track of how far ahead or behind you are from your best run on that route. The Race Myself feature, among others, will be accompanied by an optional voice feedback which reports your status to you in your earphones. We felt this feature added to the motivational aspect of the product by allowing you to strive to beat your personal record on a given route. Another feature, Set Pace, will allow you to input a desired pace for the currently-displayed run. Both of the previous features accomplish these tasks by displaying a "ghost view", either of your best run or a constant pace. The last button will be Show Stats, which will take to a list view of all the times you've completed the selected route, sorted from most to least-recent. This screen will also have an option to graphically display all your past runs on a given route by pace and date. This will allow a user to compare his or her performance of each run over time and strategize on how to improve.

Scenarios

Easy: *Go on a quick run and record your statistics.*

Michael is a French exchange student that is living in the near the UW campus. He wants to go on a short run through the U-District. He is an avid runner and he knows the route he would like to run. He likes to see his improvement over time, so he likes to record the pace and the distance of this run. He presses the "Quick Start" button on the home screen. A map is displayed and he presses the "Go" button to begin his run. While he's on his run, he comes to a stoplight. He does not want to include this in his time so he presses the pause button. The light turns green and Michael presses the resume button so the rest of his run is tracked. When he gets back home, he presses the done button and confirms that he is in fact done with this run. A "quick view" of his run statistics appears to inform him how he did.

Medium: *Plan a route, insert waypoints*

Bertha is a stay-at-home mom living in Seattle. She doesn't have a lot of time and has hired a baby-sitter so she can go on a run. She wants a new route so she presses the "Plan a Route" icon, which takes her to the screen, depicted in Figure C.2. Here, she sets her start and end points to her current location and checks the "avoid main streets" box. She then decides that she would like to run about 7 miles with a moderate amount of hills, so she enters 7 into the distance box and slides the hilliness slider to the center. She then presses the "set way-points" button in the lower right corner of the screen. She slides the map over to Madison Park and taps the screen to set the first waypoint. Next she taps on the search bar and enters "UW campus" into the search bar. The map moves over the UW campus and Bertha taps the screen to set another waypoint. She then taps on "Search for Route" and moments later a sample route and its statistics are displayed. She decides there are too many hills, she taps "Make Changes" and moves the slider to the left. Once again she hits "Search for Route." She is satisfied with this route so he taps "Start This Run" to begin recording her run.

Difficult: *Choose a route and race your old PR on that route.*

Davie wants to run his favorite route at a faster pace. He selects the "Stored Routes" icon, which takes him to a list of all his stored routes. He scrolls down to one of his favorite runs and taps on it to select it. This brings him to a screen that displays a map view of the selected route and some of the statistics about the route. He taps on the "Past Runs" button so he can view the statistics for all the runs he has done on this route. He notices that there has not been that much of an improvement on the time that he has been running this route in. It has been about a month since he has started running and he feels like he's ready to take it to the next level. He wants to run this route in a faster overall time. He taps on the "Back" button, which takes him back to this route's main page, and taps on the "Race Myself" button. A map is displayed with a "Go" button in the middle, he presses "Go", and he begins his run. On the map that is displayed there are now two location indicators, one indicating Davie's current location and the other indicating his location on his best run of this route. Throughout the run, Davie is able to take out his phone and quickly see if he is running ahead of his "ghost" runner. At the end of the run Davie presses the "End Run" button and confirms that he is actually done with his run. A horn sounds and the screen displays "GOOD JOB!" along with the statistics for this run.