

Yarn: Adding Meaning to Shared Personal Data Through Structured Storytelling

Daniel A. Epstein, Mira Dontcheva, James Fogarty, Sean A. Munson

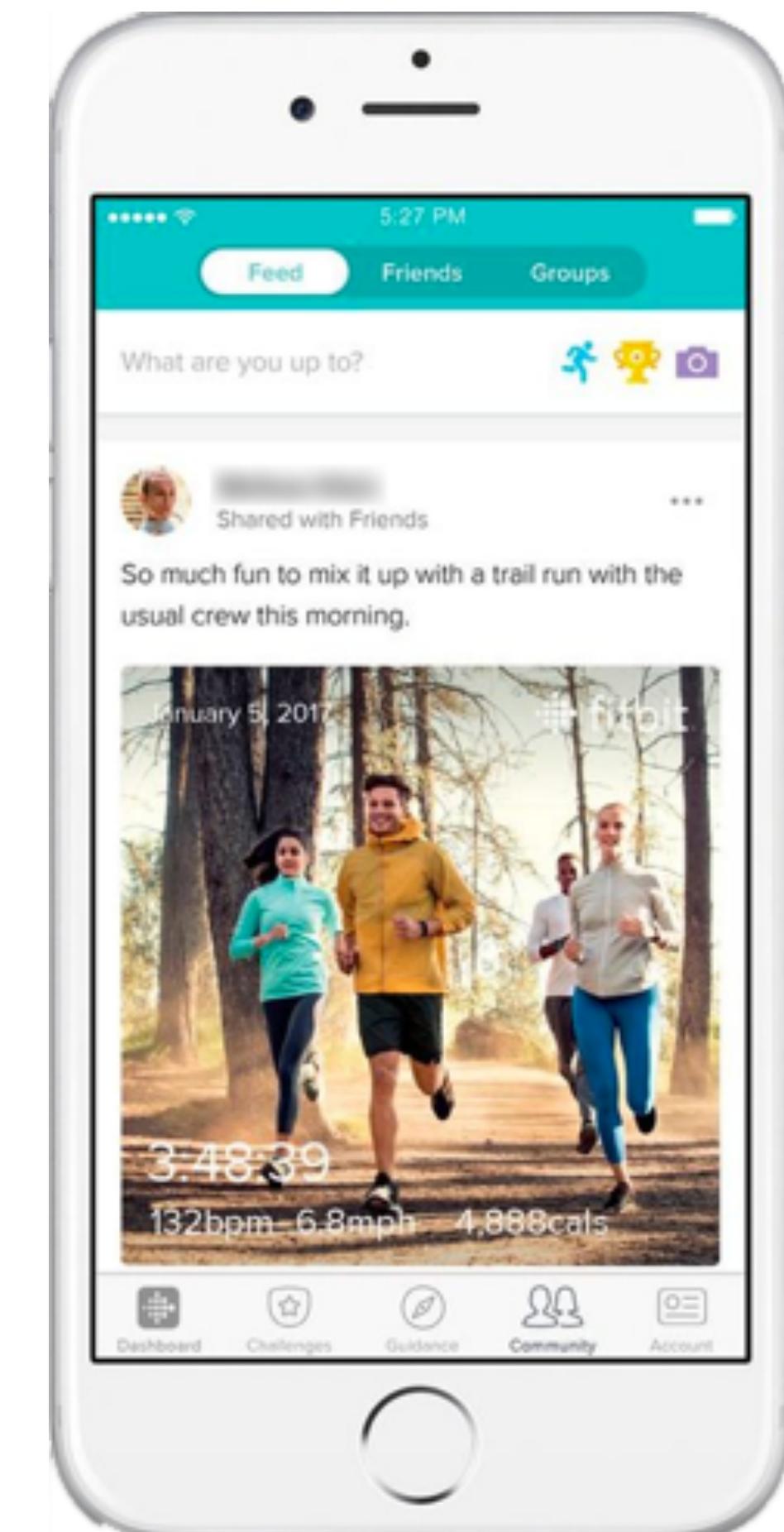
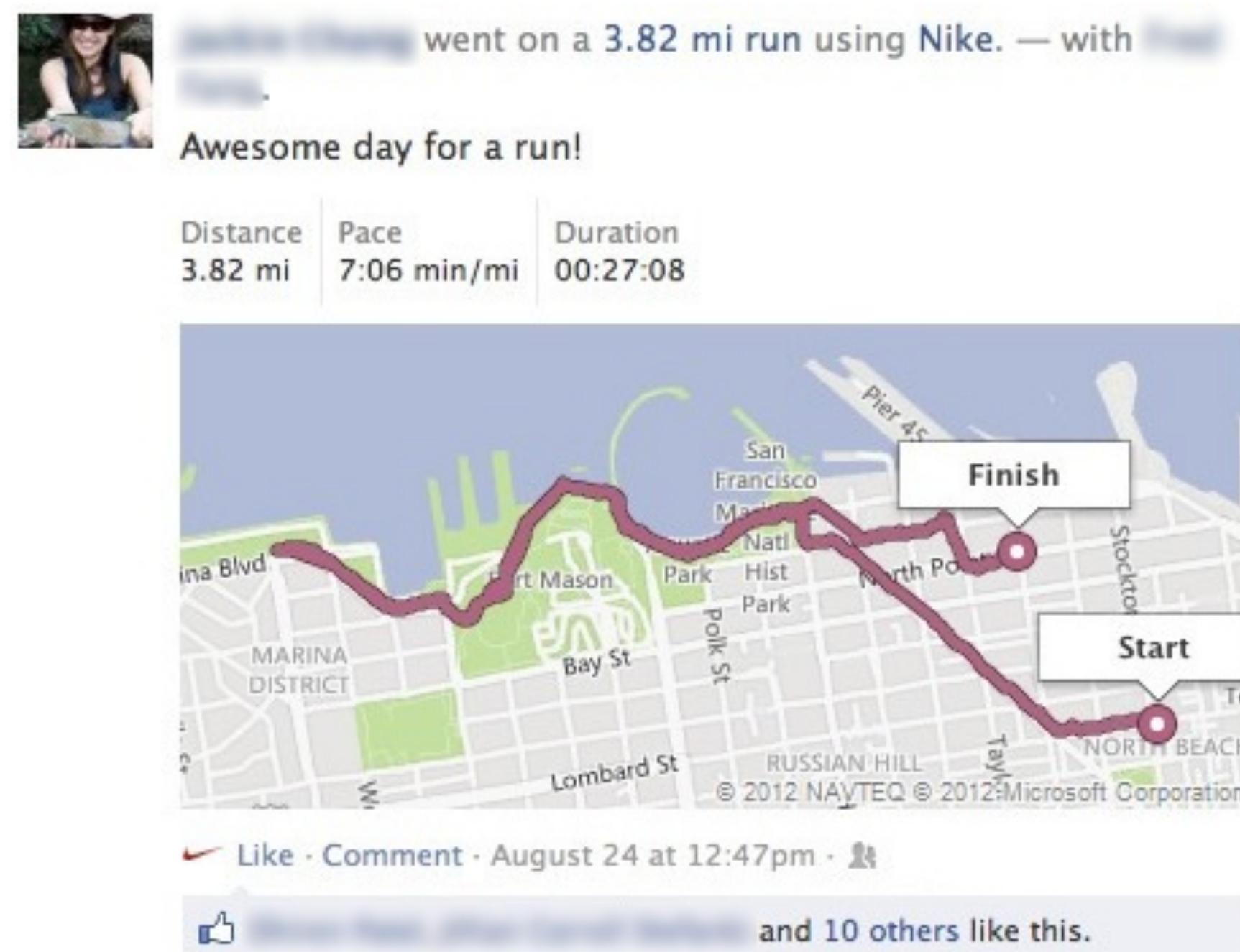
Graphics Interface 2020



University of
California, Irvine









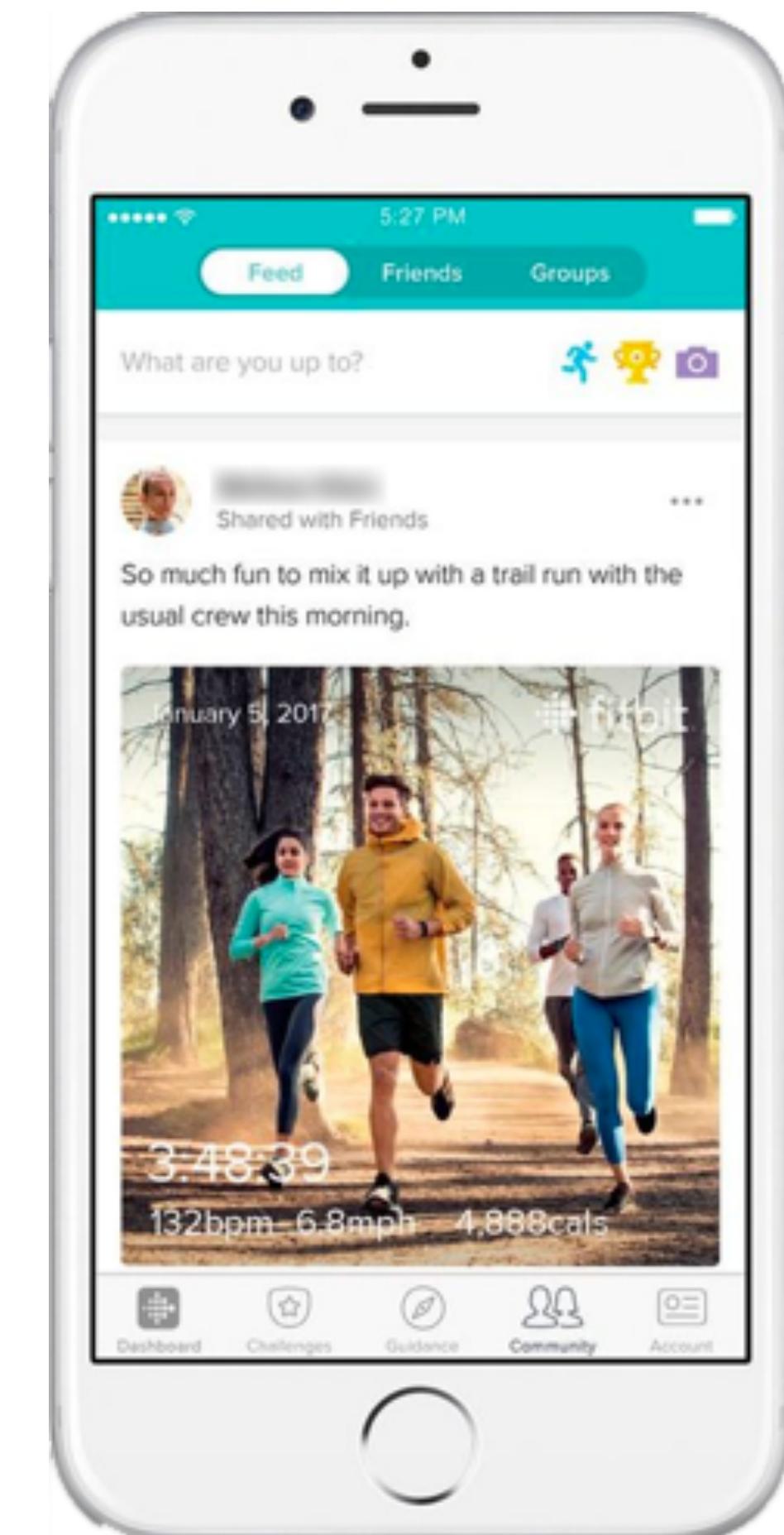
Advice



Support



Celebration





This level of support
is uncommon

“So I was kind of bummed. I was disappointed in my friends... it’d be really awesome if you could, you know, support me or help me [be more active] when I post things. Nobody cared.”



- Lin, Mamykina, Lindtner, Delajoux, Strub. Fish'n'Steps: Encouraging Physical Activity with an Interactive Computer Game. UbiComp 2006
- Munson, Consolvo. Exploring Goal-Setting, Rewards, Self-Monitoring, and Sharing to Motivate Physical Activity. PervasiveHealth 2012
- Liu, Dabbish, Kaufman. Supporting Social Interactions with Expressive Heart Rate Sharing Application. IMWUT 1, 3, 2017

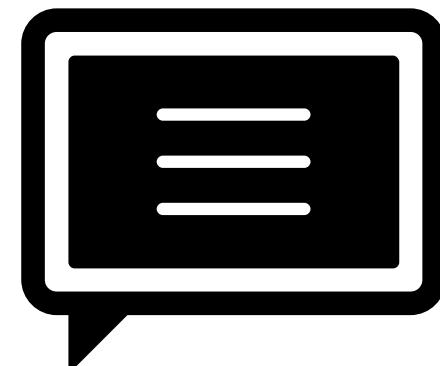
*“To move beyond impersonal,
standard messages to fostering
true connections between self-trackers
and their various audiences, [designs] need
to support those users in telling their story
and sharing experiences with their data,
their way.”*

What stories do
people want to use
personal data
to help tell?

How can a design
structure storytelling
to help people
integrate that data?

How do story authors
and their audiences
feel about
structured stories?

What stories do people want to use personal data to help tell?



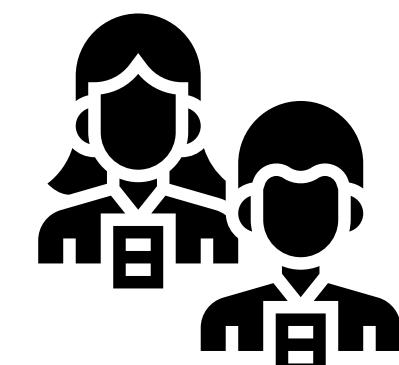
23 formative interviews

How can a design structure storytelling to help people integrate that data?



Design and development of Yarn

How do story authors and their audiences feel about structured stories?



Field study with 21 participants

What stories do
people want to use
personal data
to help tell?



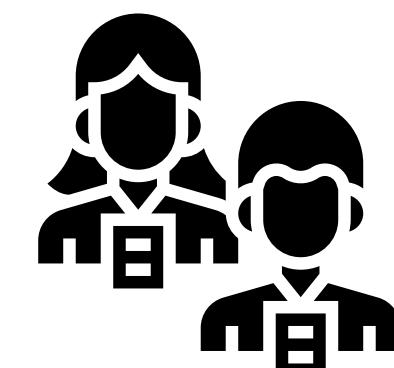
23 formative
interviews

How can a design
structure storytelling
to help people
integrate that data?



Design and development
of Yarn

How do story authors
and their audiences
feel about
structured stories?



Field study
with 21 participants

Yarn: a structured storytelling experience

Yarn: a structured storytelling experience



Training for
running races



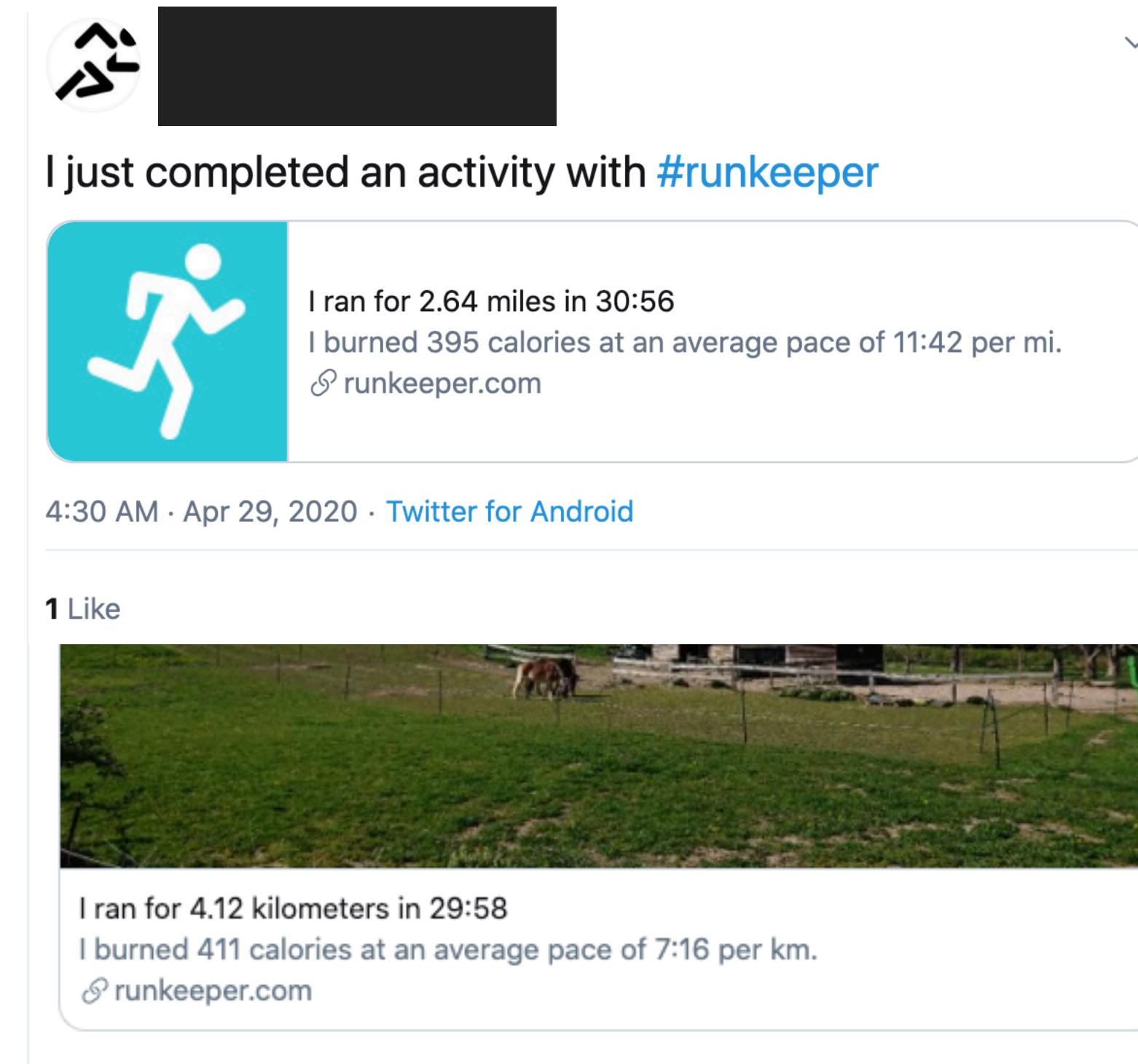
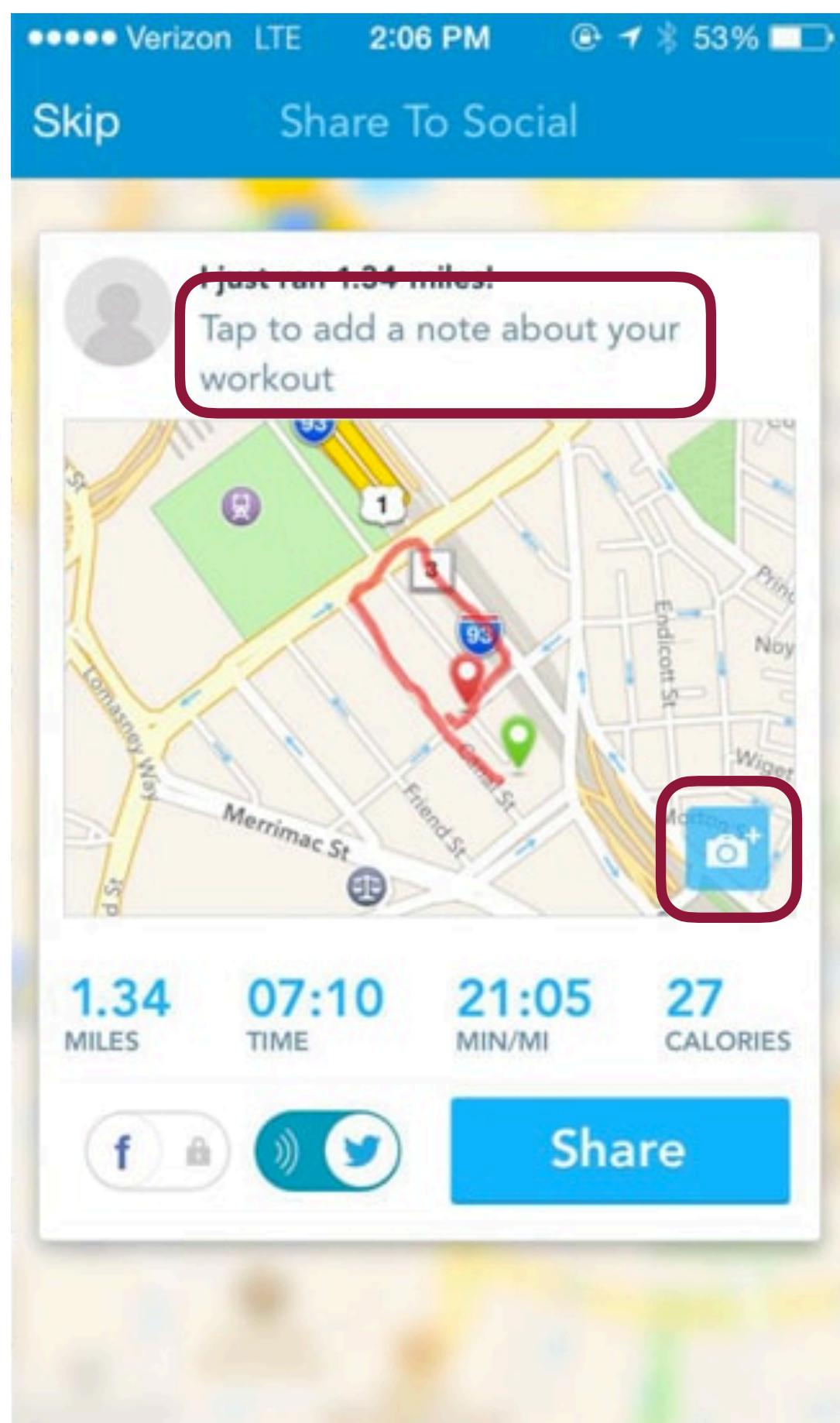
Completing
home DIY projects

Demo video:

https://cutt.ly/yarn_video



Runkeeper



Epstein, Jacobson, Bales, McDonald, Munson. From "Nobody Cares" to "Way to Go!": A Design Framework for Social Sharing in Personal Informatics. CSCW 2015

Description suggestions

Optional
and automatic
data entry



Yarn

Facebook 2:54 PM 74% ⚡

Back Write Chapter Next

Title How was your run?

Description What do you want others to know? How can others support you? What do you need advice on?

Run

Photos & Videos

Date Saturday, March 4

Dist (mi) 3.21 Time (min) 29

Sun ☀ Cloud ☁ Rain ☂ Snow ☃



Runkeeper

Verizon LTE 2:06 PM 53%

Skip Share To Social

I just ran 1.34 miles!
Tap to add a note about your workout

1.34 MILES 07:10 TIME 21:05 MIN/MI 27 CALORIES

f Share

Description suggestions

Optional and automatic data entry



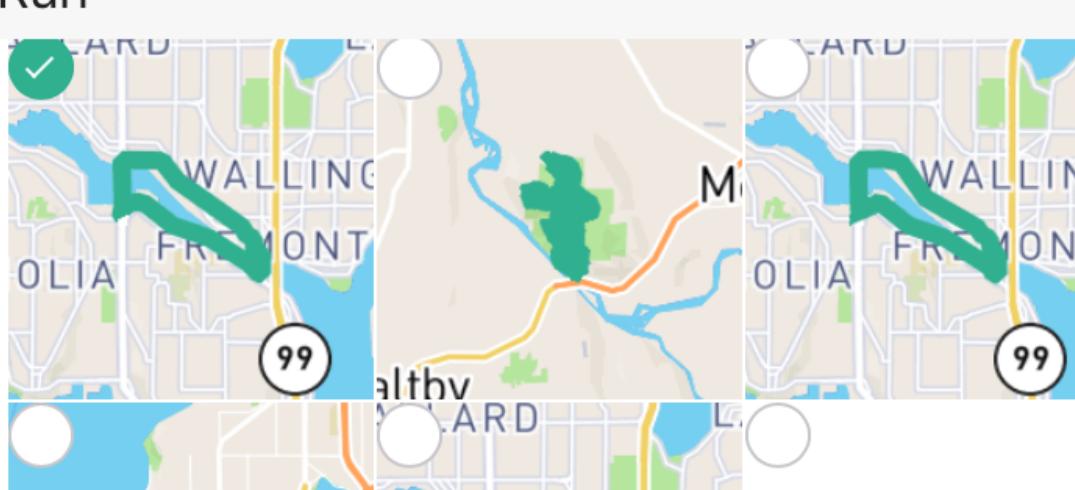
Yarn

Facebook 2:54 PM 74%

[Back](#) [Write Chapter](#) [Next](#)

Title How was your run?

Description What do you want others to know? How can others support you? What do you need advice on?

Run 

Photos & Videos 

Date Saturday, March 4

Dist (mi) 3.21 **Time (min)** 29



Facebook 2:55 PM 74%

[Back](#) [Write chapter](#) [Next](#)

Title What did you do today?

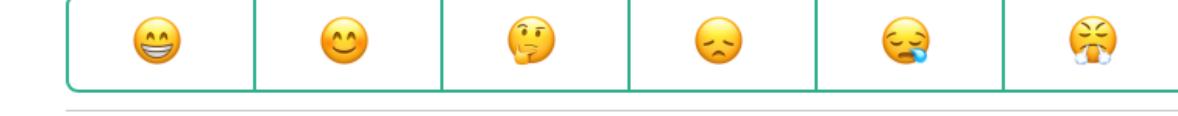
Description What problems are you encountering? What do you need advice on? How can others help you?

Photos & Videos 

Date Saturday, May 13

Mins Worked 60

Expenses 0





Advice

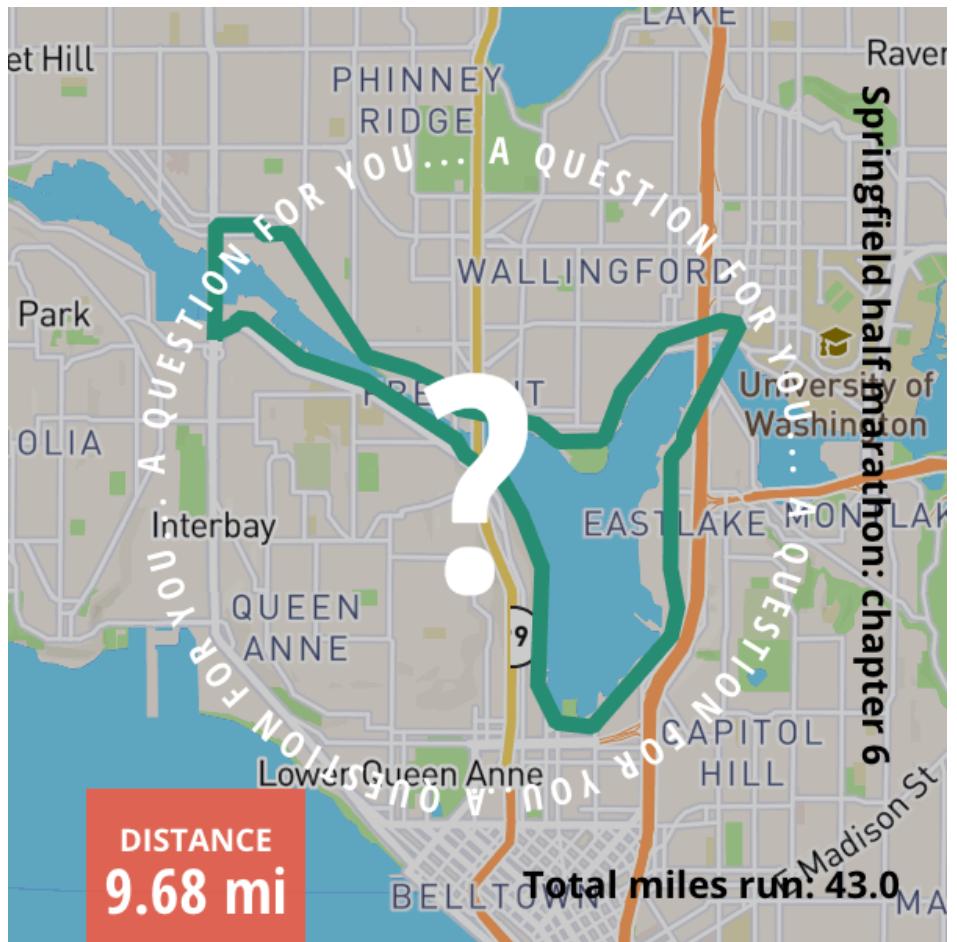


Support



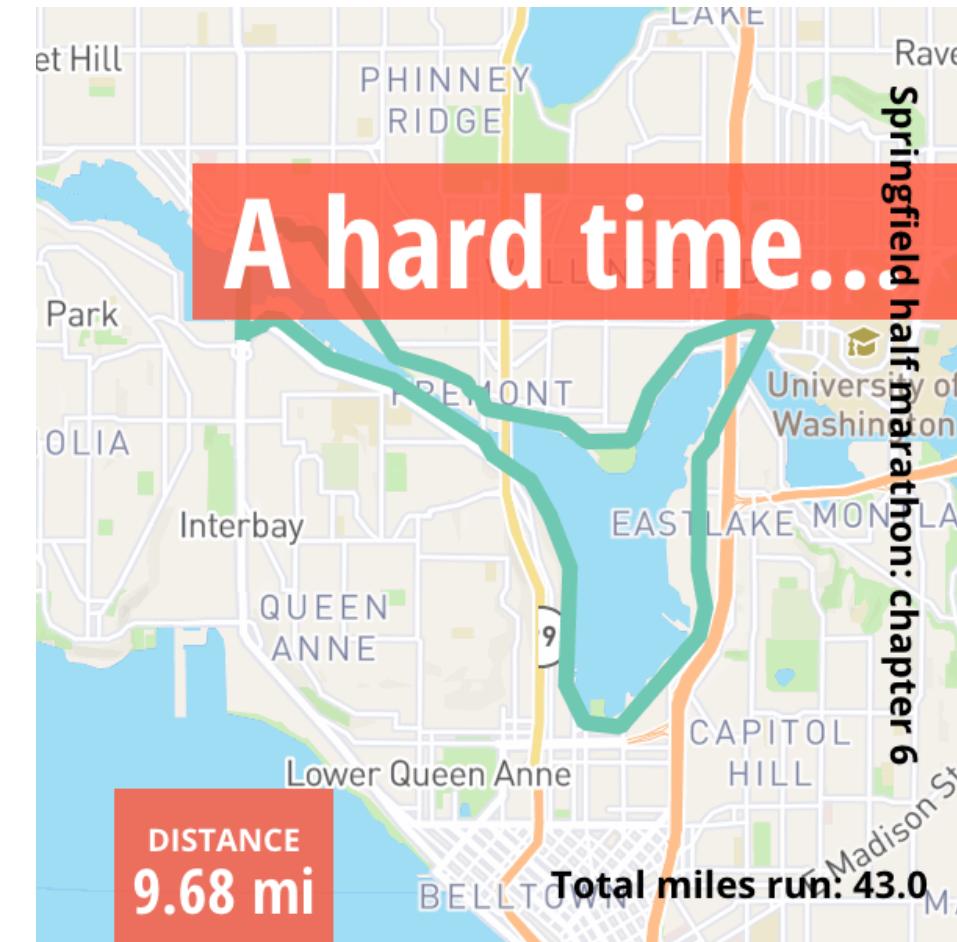
Celebration

For advice



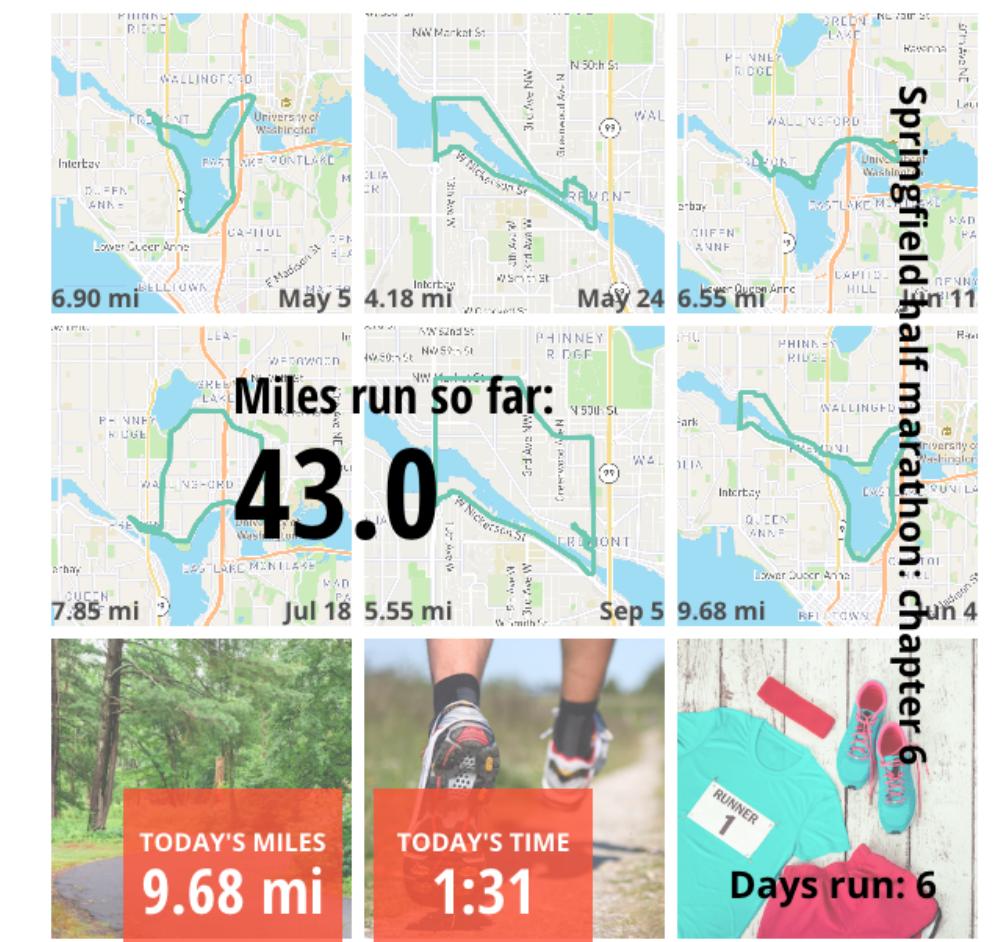
A question

For support



A hard time

To celebrate

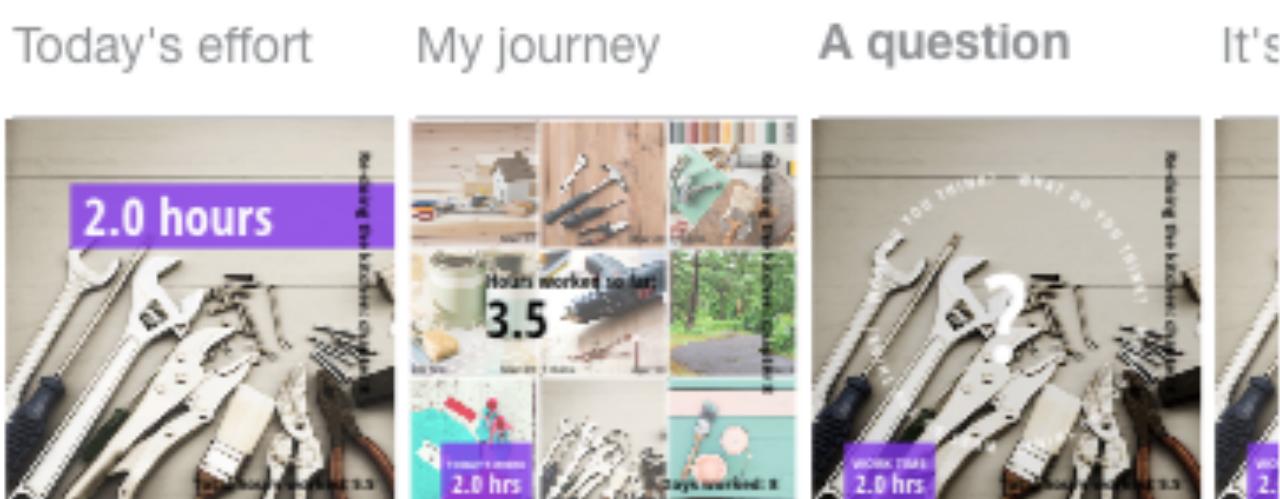


My journey



The legs ended up a bit longer than I was expecting.
I'll have to adjust everything else a little...

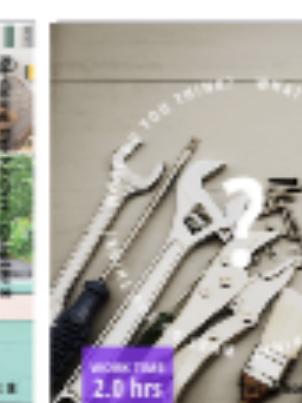
Today's effort



My journey



A question



It's

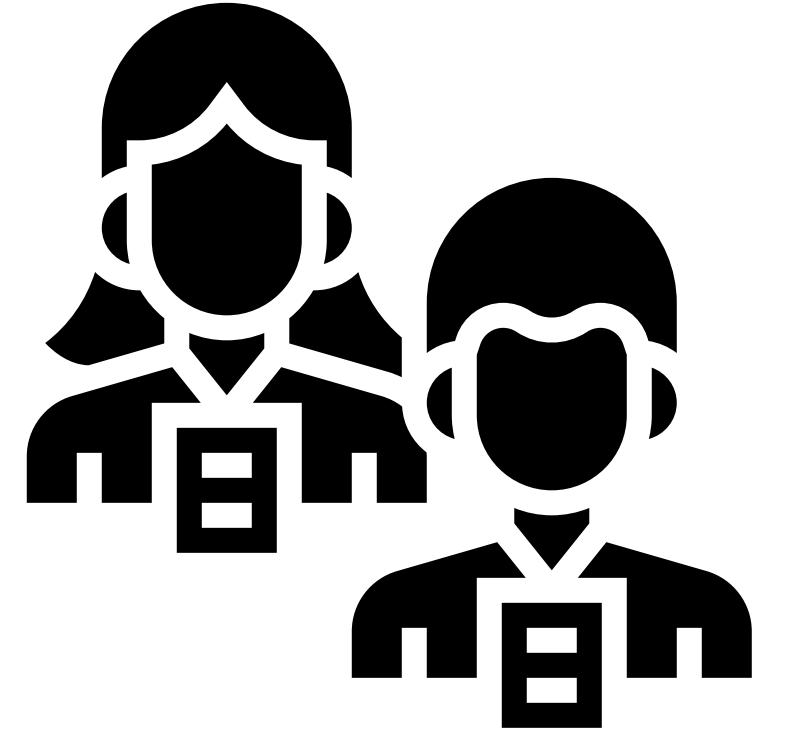


A question for you...

What do you think?

Need some advice...

[Edit]

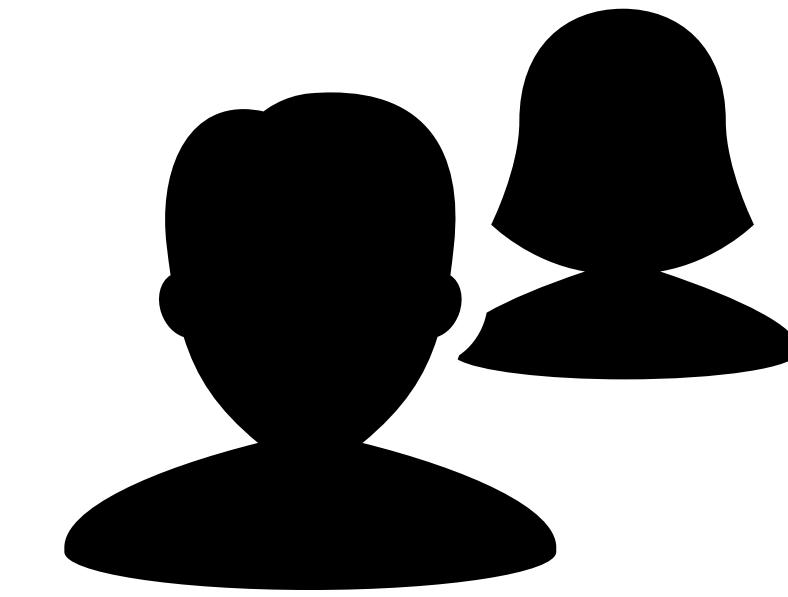


21 participants,
4 weeks

12 race training

9 DIY

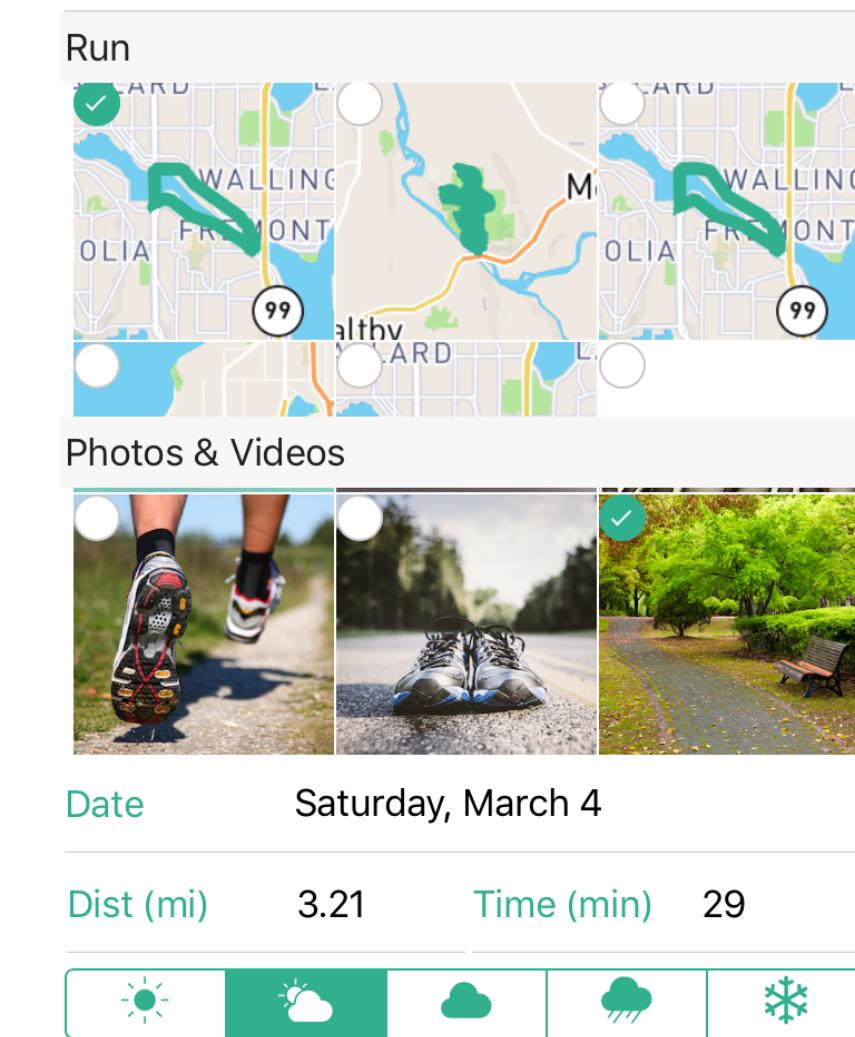
44 stories, 190 chapters



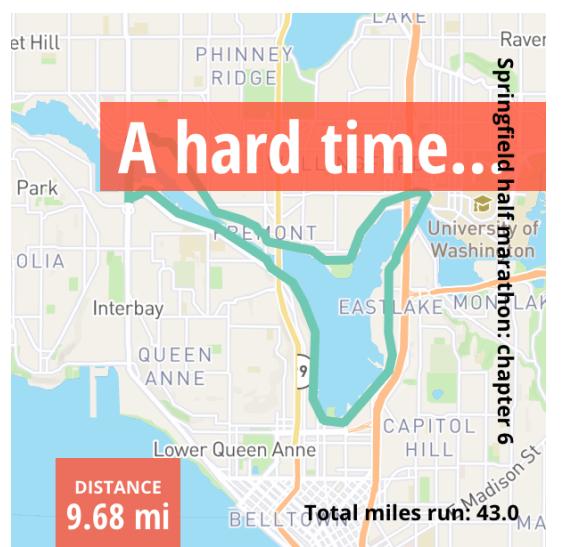
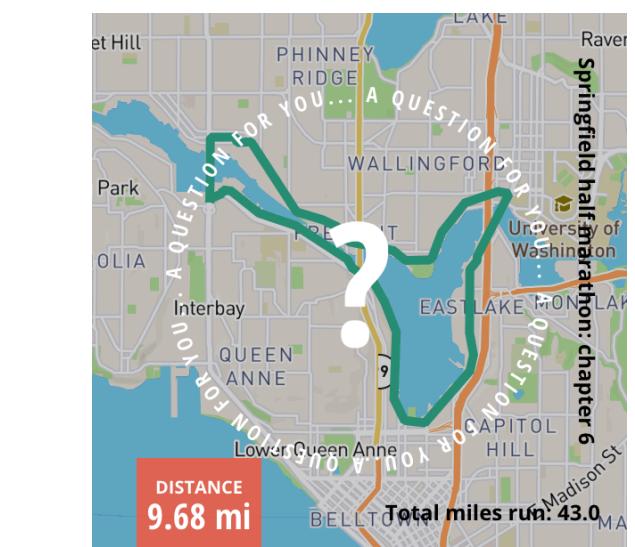
16 social
connections

Description suggestions

Title	How was your run?
Description	What do you want others to know? How can others support you? What do you need advice on?



Optional
and automatic
data entry



Visual templates

Field study findings

Field study findings

Discussion suggestions

- A sentence or less for most story chapters
(55% running, 61% DIY)
- “[*the prompts*] didn't quite match what I was trying to do... Like ‘what did I do today?’ Versus like, ‘what are you working on’ or ‘what did you just make?’ ... I don't know, it's just like, it's too, it's too big of a question.” (F19DIY)

Title	How was your run?
Description	What do you want others to know? How can others support you? What do you need advice on?

Field study findings

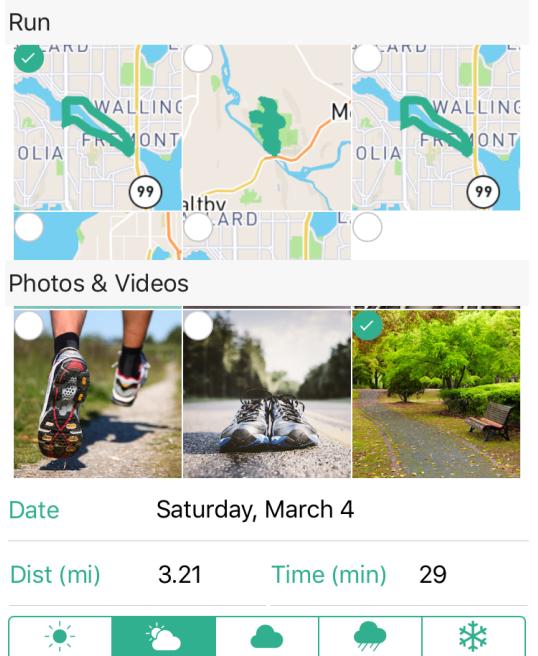
Discussion suggestions

- “*Some days, [the prompts] did help me reflect on my run, which was nice.*” (F7run)
- “*I thought [the prompts] were actually good ideas for what I might write. I didn’t always follow them, but I did usually read them.*” (F1DIY)

Title	How was your run?
Description	What do you want others to know? How can others support you? What do you need advice on?

Field study findings

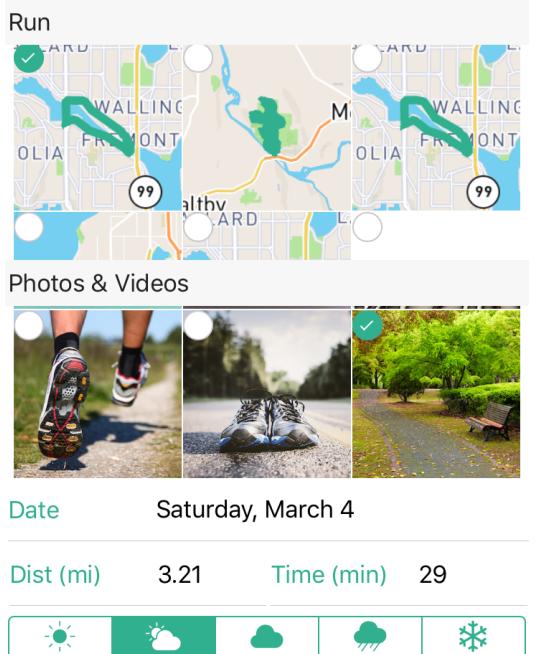
Optional and automatic data entry



- Most chapters included visual data, like pictures or running maps (82% running, 77% DIY)
- *“I just think it works so much better if you have the photos... I just think that the photos make it, otherwise it's just data.” (F18run)*
- *“I feel like not posting a picture, it's like a complete copout... like I don't want to see a picture of a paint bucket [the default visual data in the DIY version of Yarn] ‘cause that's not inspiring at all.” (F19DIY)*

Field study findings

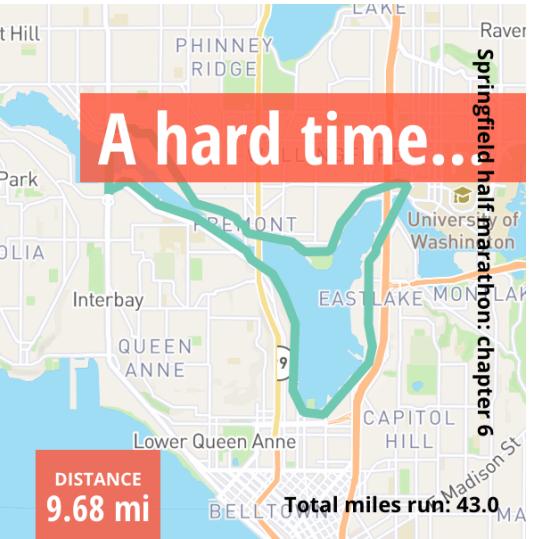
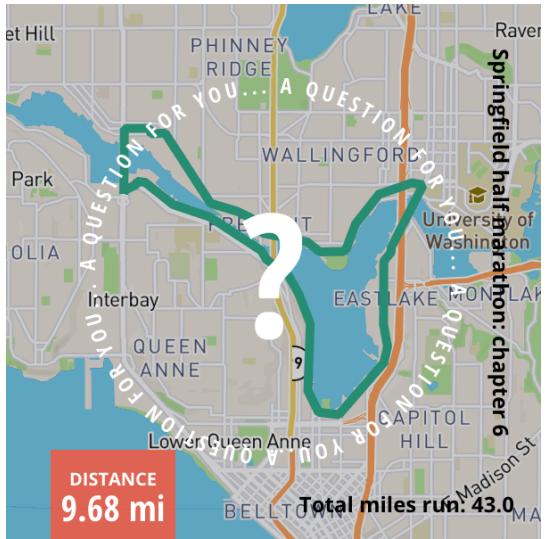
Optional and automatic data entry



- More running stories included numeric data (94%) than DIY stories (64%)
- *“I took photos of like the steps, like just like one photo per outlet... sometimes if I have it, hours or money spent or whatever.”* (F14DIY)
- *“[she] usually shared... what the weather was doing. I loved the times she was running while it tried to snow.”* (S12run)

Field study findings

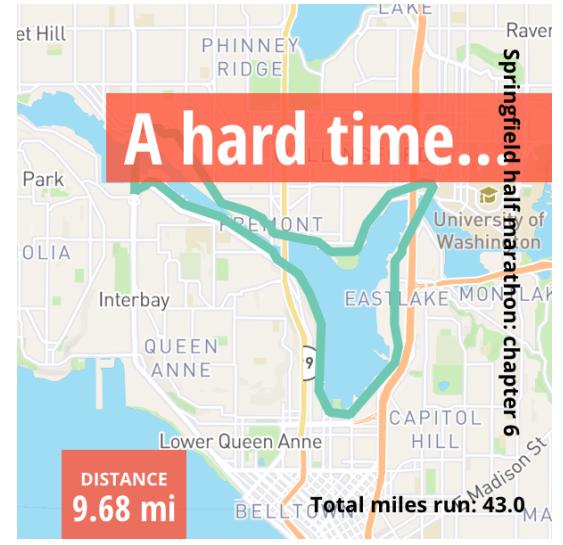
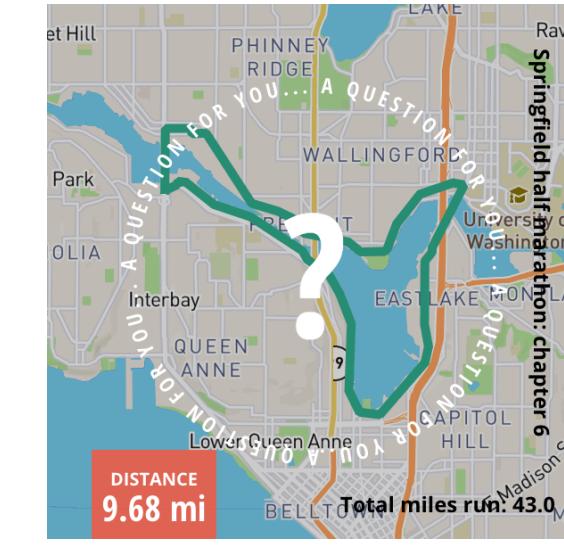
Visual templates



- “I liked... how there’s different formats on there that you could kind of highlight different things, like you could highlight how much you ran in the week... or what the weather was like.” (F15run)
- “[I] liked the variety of templates.” (S18run)

Field study findings

Visual templates



- 75% of chapters created used the two templates which covered pictures the least
- “*The templates are killing me. I really want one that doesn't touch my image content at all.*” (F4DIY)
- “*Often when I need to ask a question, there is also an image that communicates [my question] ... I wouldn't want to put so much text on top of the image because I want people to study the image to tell me an answer.*” (F1DIY)

Discussion

Discussion

Balance structure with flexibility

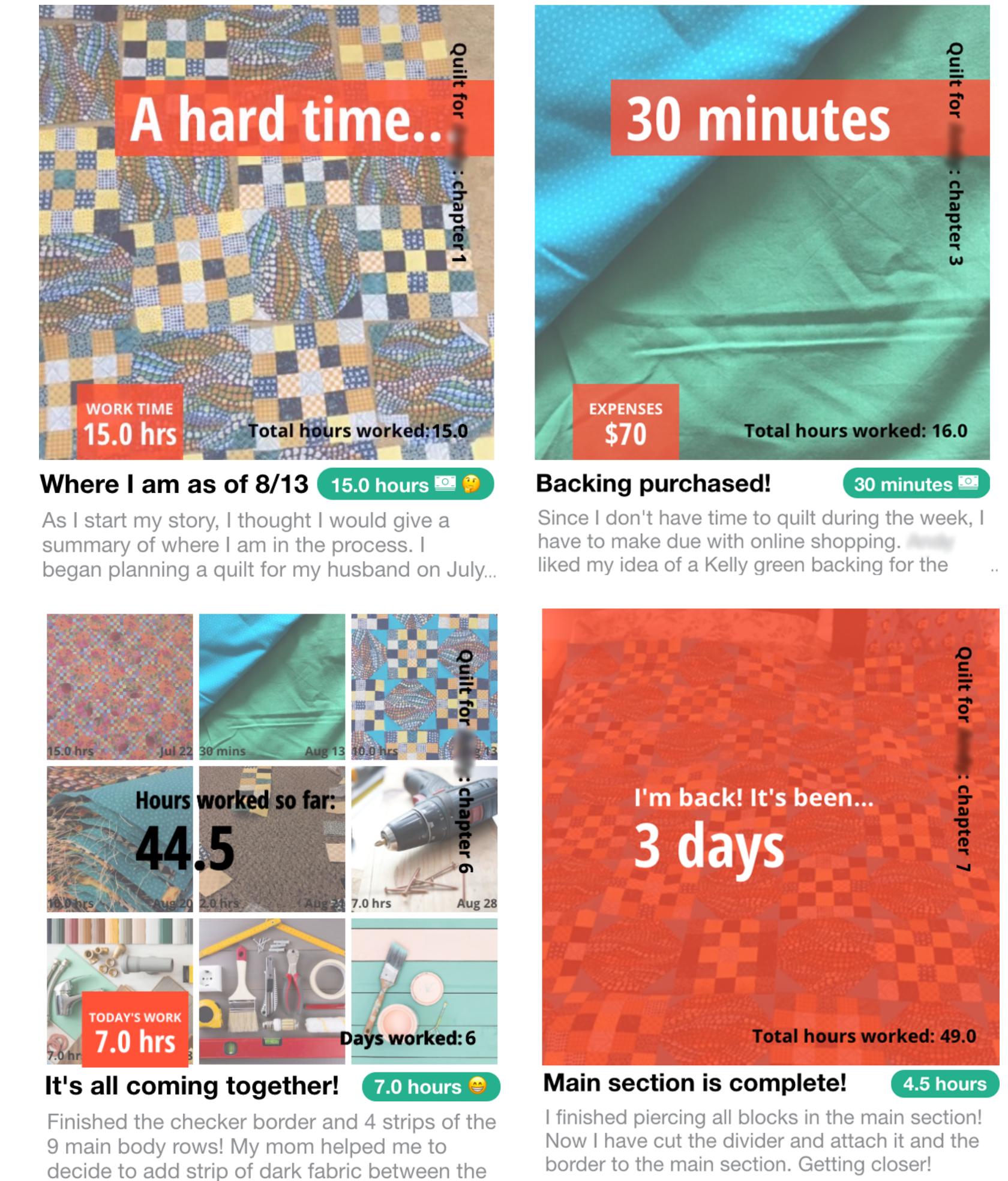
- Participants wished they had more choice in how data was formatted and styled
- Direct manipulation in ephemeral “story” features could assist, but participants appreciated showing their progress



Discussion

Facilitate documentary informatics and social support

- Participants were as interested in documenting their stories for themselves as for others
- These goals are often in tension
 - Detailed data and description can help with reminiscence, but would be overwhelming for audiences



Discussion

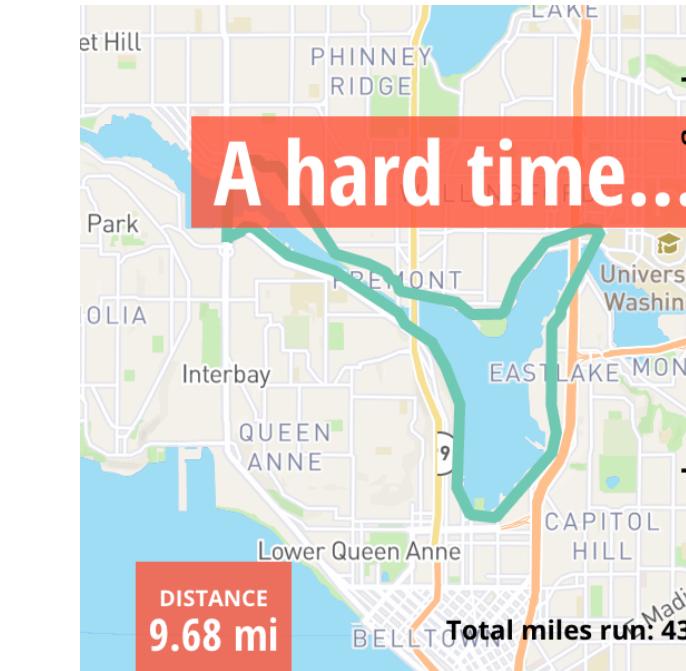
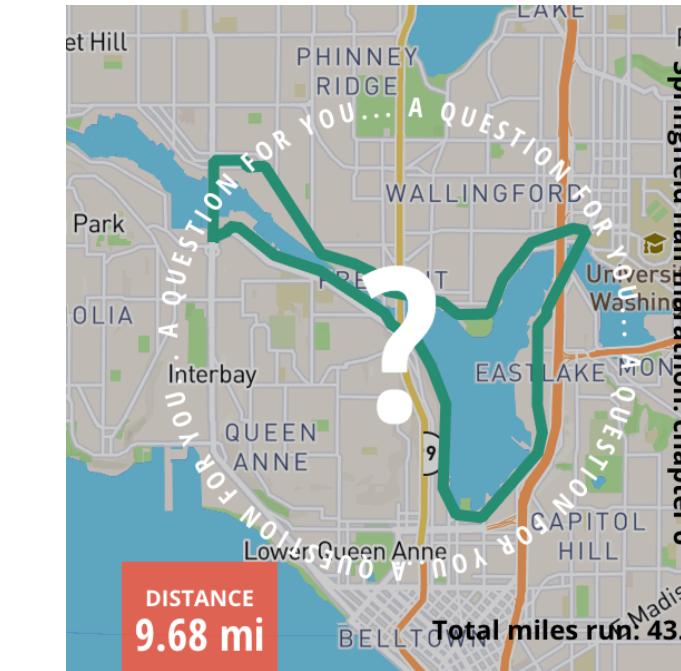
Gauge audience interest

- Participants who were far away from completing their accomplishments tended to want to wait to share them
- Tools should expect people's storytelling goals to evolve as the story evolves

Thanks!

Yarn: Adding Meaning to Shared Personal Data Through Structured Storytelling

A screenshot of a Facebook post interface. At the top, it shows 'Facebook' with signal strength, '2:54 PM', and a battery icon at 74%. Below that are 'Back', 'Write Chapter', and 'Next' buttons. The main content area has 'Title' set to 'How was your run?' and 'Description' set to 'What do you want others to know? How can others support you? What do you need advice on?'. A 'Run' section shows a map of a run route through Wallingford, Fremont, and Queen Anne neighborhoods. Below the map are three small photos: a runner's legs, a pair of running shoes, and a park scene. At the bottom, it shows 'Date' as 'Saturday, March 4', 'Dist (mi)' as '3.21', 'Time (min)' as '29', and a row of weather icons.



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We thank Sol Choi for help with interaction design, Koko Nakajima for visually designing the templates, Ailie Fraser for piloting Yarn, Jessica Hullman, Karrie Karahalios, and Joy Kim for their feedback on the design and evaluation, and Madisen Arurang, Peter Cutler, Maya Klitsner, and Tre Paolini for managing the second deployment study. This work was funded by in part by Adobe Research, the National Science Foundation under awards IIS-1553167, IIS-1813675, IIS-1850389 and a gift from Facebook.

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