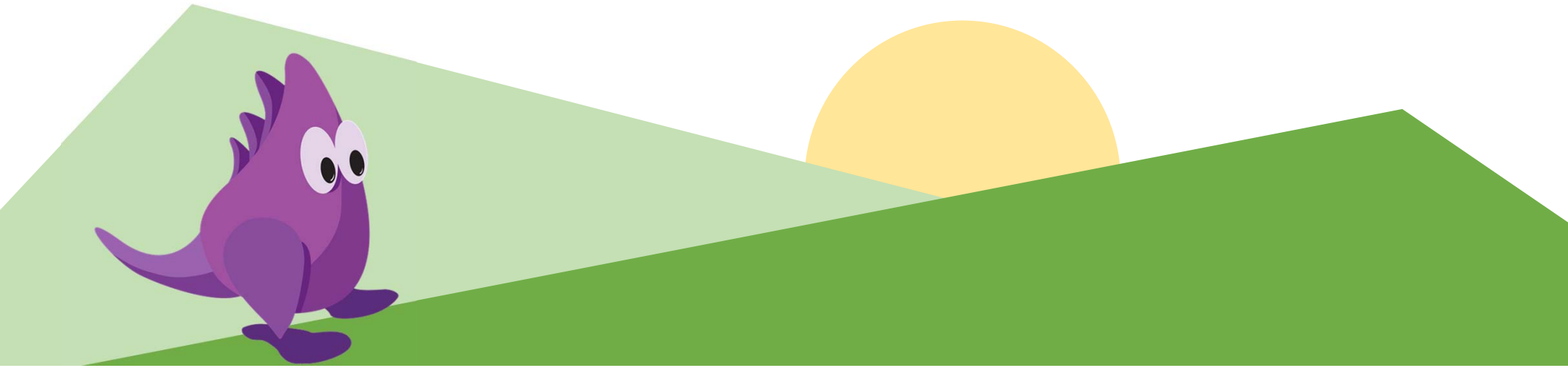
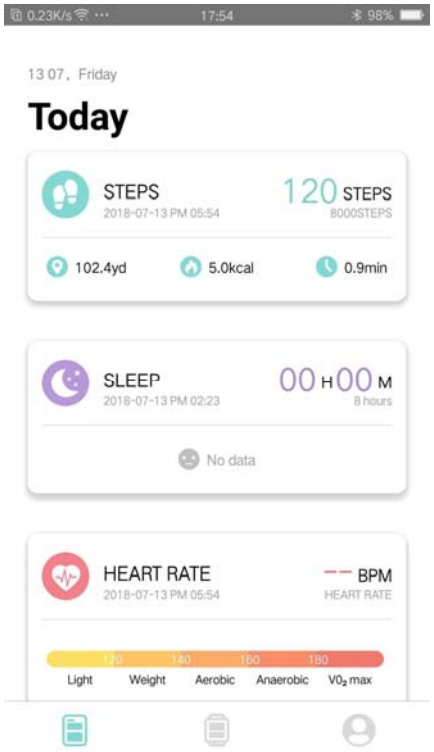
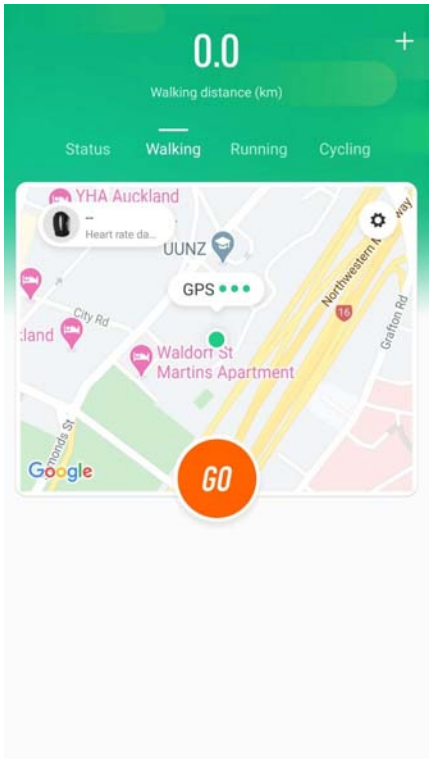
Designing Ambient Narrative-Based Interfaces to Reflect and Motivate Physical Activity

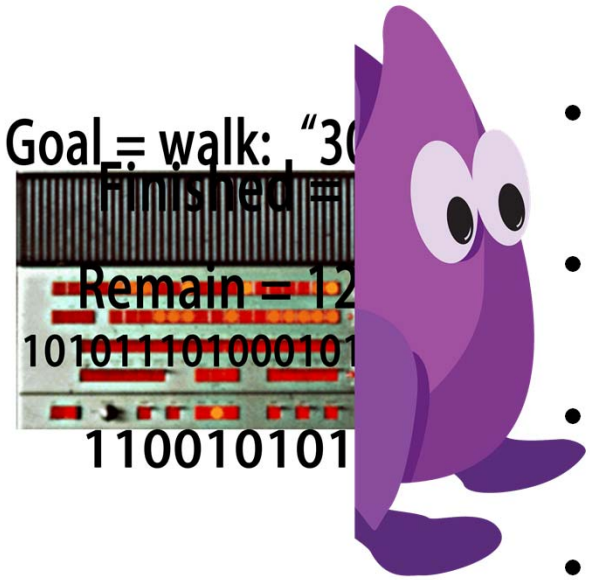


Innovation in expression





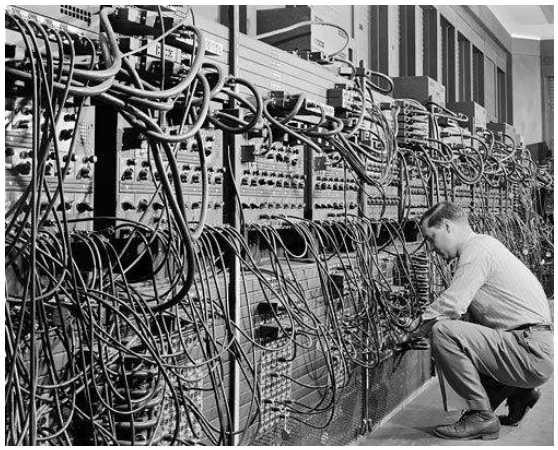
Human-computer interaction



- Make computer more friendly to people.
- Focus on Design of interface.
- Computer Science is a multifaceted field.
- Computer Science also requires artistic thinking.[1]
- Include the Study of computer design.[2]

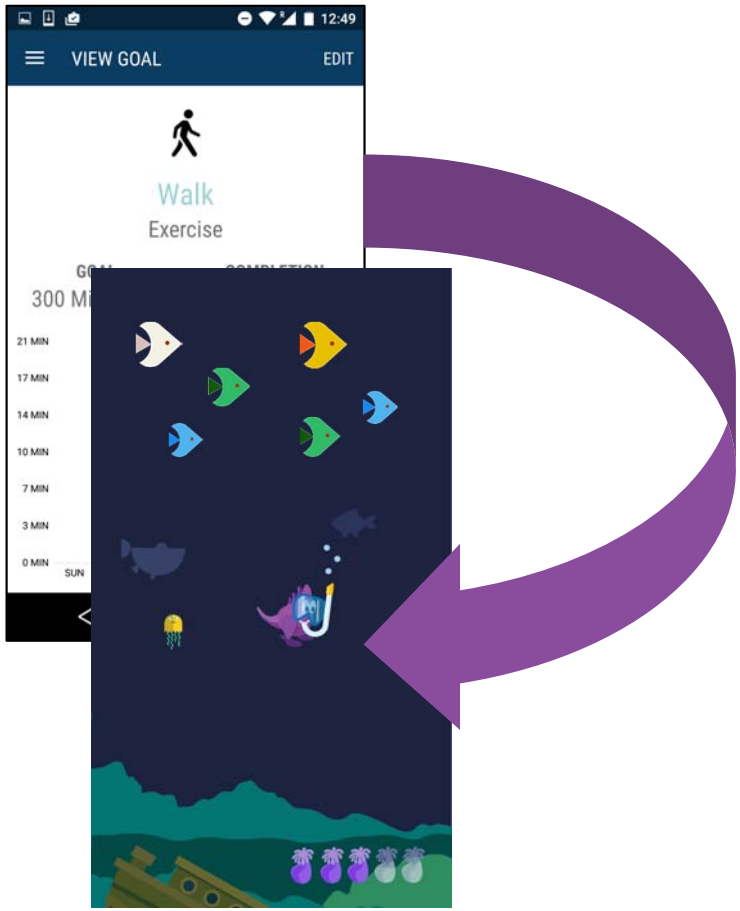
Importance of Human-Computer interaction[3]

- Not taken seriously until 1970.
- Promote the popularization of computers.
- Make computer more usable.
- Express information to user efficiently.



Who is Zuki

- Focus on motivate physical activity.
- Innovation in expression of exercise data.
- Introduce method from literature field.
- Pass exercise data selectively to user.
- Not focus on efficiently expressing



Objective of WhoIsZuki

- Reflect working out data vividly.
- Encourage physical activity.
- Reduce the prevalence of chronic diseases.
- Prevent negative mindset when reading data.

Process of experiment

- 300 participants has involved in survey.
- Compare participants activity between different applications.
- Interview with participants to enhance quality.
- Get participants' needs by passing prototypes.

Introduce method of narratology

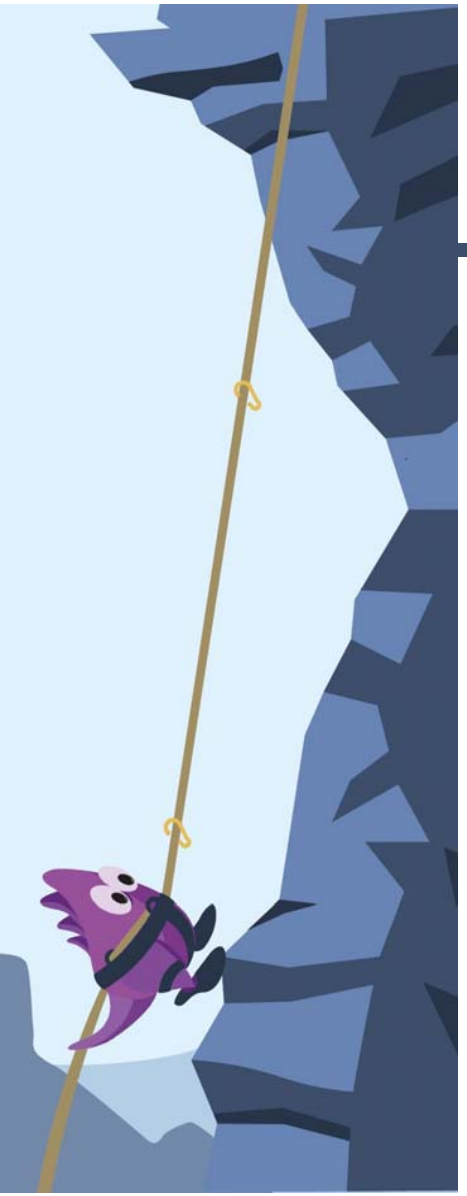
- Bring user a sense of immersive.
- Evoke user's empthy.
- Reduce cognitive resistance.
- Continuely interact with user.

Positive feedback mechanism

- Display icons to represent activities.
- Put indicator show process of story.
- Congratulations when chapter cleared.
- Individual effects for every chapter.

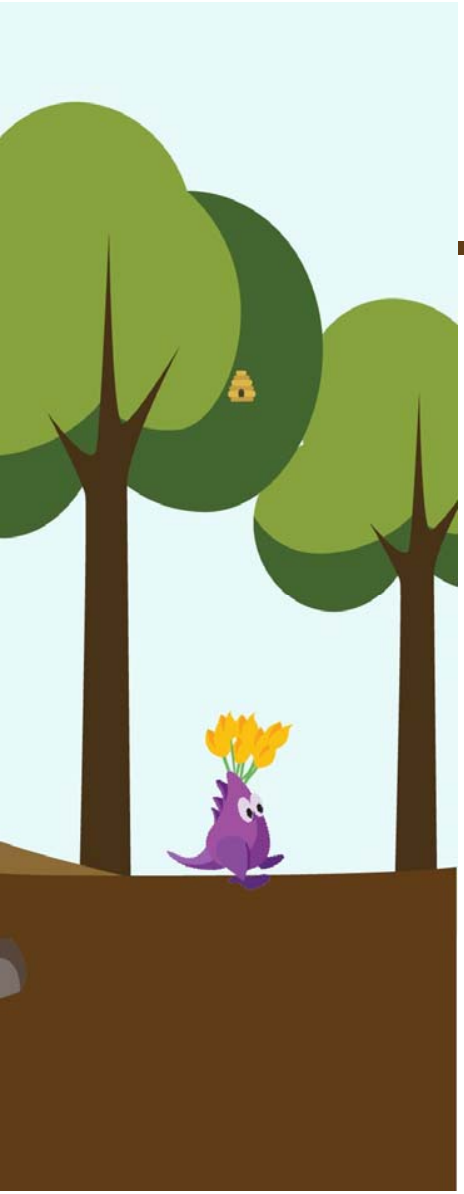
Emotional attachment

- Empathy-building backstory.
- Excitement and suspense.
- Cooperators and antagonist.
- Keep logical relation in the story.



Multi-chapter designing

- More physical activity observed in multi-chapter.
- Half of multi-chapter paticipants' behavior improved.
- Get user's needs by passing prototypes.
- Transferred paticipants to data driven users.
- Multi-chapter paticipants check smartphone more frequently.

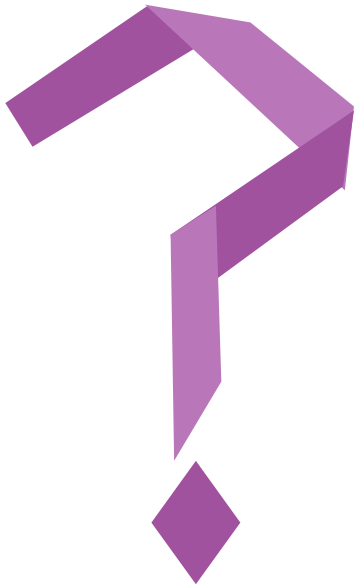


Engagement with the narrative

- More narrative engagement observed.
- Keep attract participants by fresh chapter.
- Use story to cultivate user stickiness.
- Give participants a sense of surprise.
- Introduce the ability of cross-cultural communication

Pros and Cons:

- Introduce methods from narratology to physical activity.
- Transferred some participants to data diveren users.
- Create an immersive environment for working out application.
- Compare with single-chapter only.
- Get response from small group.
- Participants from single cultural background.[4]
- Too childish for some participants.[5]



What future work can be done?

- Compare with traditional sport software.
- Get more response from variant of participants.
- Undertake experiment in different culture background.
- Try a serious story background.

Conclusion

- Introduced mature method from other field.
- Use wallpaper as interface.
- Story will call, but sport won't.

References:

[1] O. Hazzan, T. Lapidot and N. Ragonis, “Overview of the Discipline of Computer Science” in *Guide to Teaching Computer Science*, London, UK: Springer, 2014, pp. 21-46.

[2]”Computer Science” Auckland.ac.nz. https://www.auckland.ac.nz/en/study/study-options/find-a-study-option/computer-science.html (accessed Aug. 18, 2020).

[3] J. Carroll “Human Computer Interaction - brief intro” Interaction-design.org. https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/human-computer-interaction-brief-intro (accessed Aug 20, 2020).

[4]S. Consolvo, D. McDonald, T. Toscos, M. Chen, J. Froehlich, B. Harrison, P. Klasnja, A. LaMarca, L. LeGrand, R. Libby, I. Smith, and J. Landay. “Activity sensing in the wild: a field trial of ubifit garden,” in *Conf. Proceedings of the SIGCHI conference on human factors in computing systems.* ACM, 1797–1806.

[5]E, Murnane. X, Jiang. A, Kong. M, Park. W, Shi. C, Soohoo. L, Vink. I, Xia. Y, Xin. J, Yang-Sammataro. G, Young. J, Zhi. P, Moya. J, Landay. “Designing Ambient Narrative-Based Interfaces to Reflect and Motivate Physical Activity” in *Conf. CHI '20: Proceedings of the 2020 CHI Conference on Human Factors in Computing System.* Apr. 2020 pp,1-14.