INTRODUCTION

Purpose

The purpose of this project is to design and develop a video game with an original content that incorporates the principles of High Intensity Interval Training (HIIT).

We conducted a playtest to observe if the game is:

- × fun,
- × easy to use,
- × preferable
- × effective for HIIT training

HIIT?

× exertion varying levels of physical intensity
× cardiovascular exercise
× best cardio to burn fat
× alternate between anaerobic and aerobic exercise
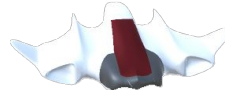
PROTOTYPE

YETI RUN

- × an **exergame** with the stationary bike

- × **HIIT implemented**
  - × customizable target speed and time duration

- × **endless run** type **chasing** game

PROTOTYPE

HIIT in YETI RUN

×   game idea origin

×   procedure/phases
  ×   **Warm-Up**
  ×   **High Intensity (Repeat)**
    ×   Work Interval
   ×   Recovery Interval
  ×   **Cool Down**

PROTOTYPE

Game Mechanics in YETI RUN

× **set target speed** and **duration** for each phase.

× **control the speed** of the spacecraft by cycling

× **adjust the speed** based on the **target speed range for each phase**

× s**paceship charges** to take off as player's **speed is within the target speed range**

× **environmental and UI changes** based on the phases
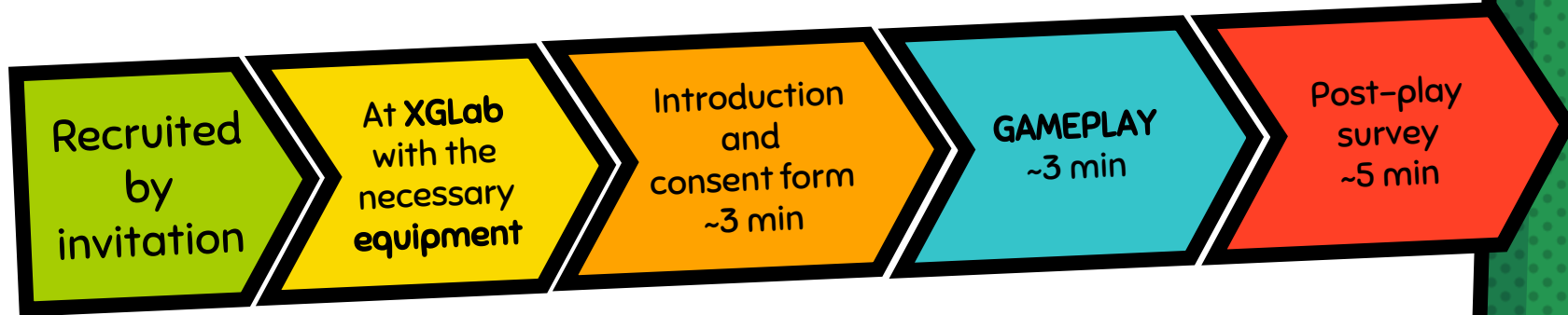
PLAY TESTING

Total of 4 participants

🚲 🚲 🚲 🚲

More clear state transitions with colors and sound tempo
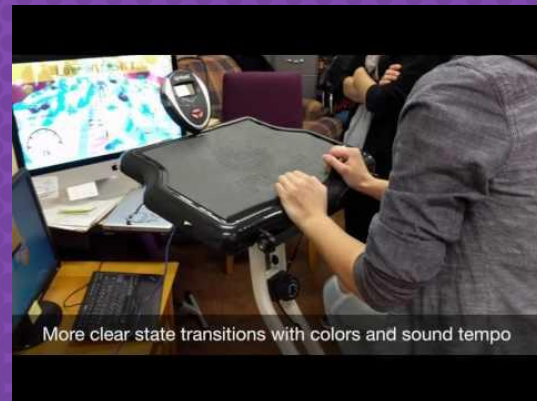
SAMPLE

Pseudonym	Age	Gender	Gameplay frequency hours/week	Chasing game experience	Do Exercise?	Prior Knowledge of HIIT
Helpful Harry	30–35	Male	3.5	No	No	No
Playful Peter	20–25	Male	5	Yes	Yes	No
Slim Sue	20–25	Female	4	No	Yes	No
Curious Casey	20–25	Female	3	Yes	No	Yes

GENERAL OBSERVATIONS

Pseudonym	# of failure	Get used to mechanics easily	Understand outcomes (when out of speed range)	Easily adapt to phase transitions
Helpful Harry	3	Yes	Yes	No
Playful Peter	0	No	No	No
Slim Sue	1	No	No	No
Curious Casey	1	No	Yes	Yes

FINDINGS

SEVERITY LEVELS

Player name input field

Sound effects & Music

COSMETIC

Effective tutorial

Meaningful placement of countdown timer

Distance between Yeti and player

MEDIUM

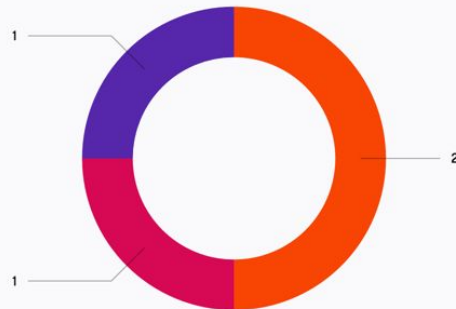Sharp phase transitions

Feedback about next phase

Information about outcomes
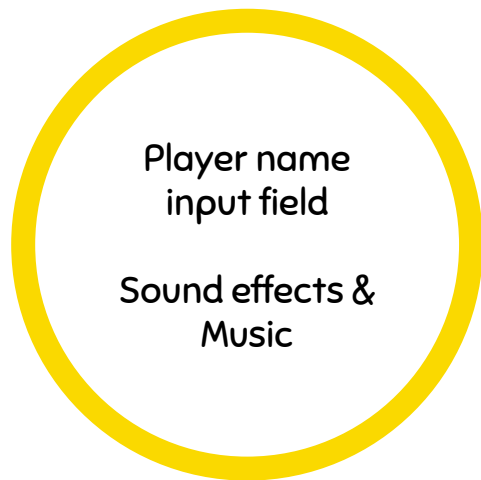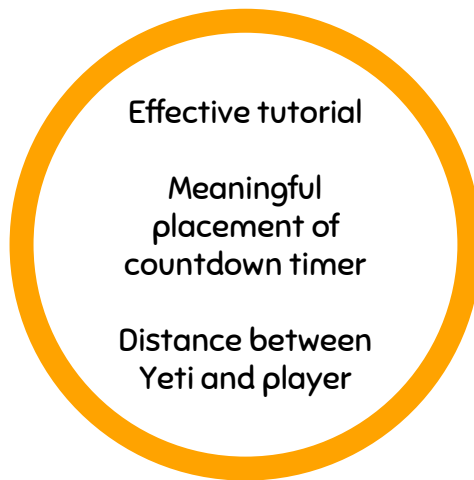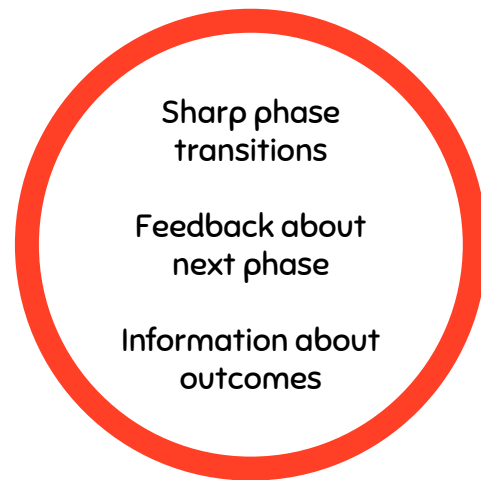
SERIOUS

SURVEY RESULTS

PERCEIVED LEVEL OF EXERTION
(BORG SCALE BETWEEN 6-20)

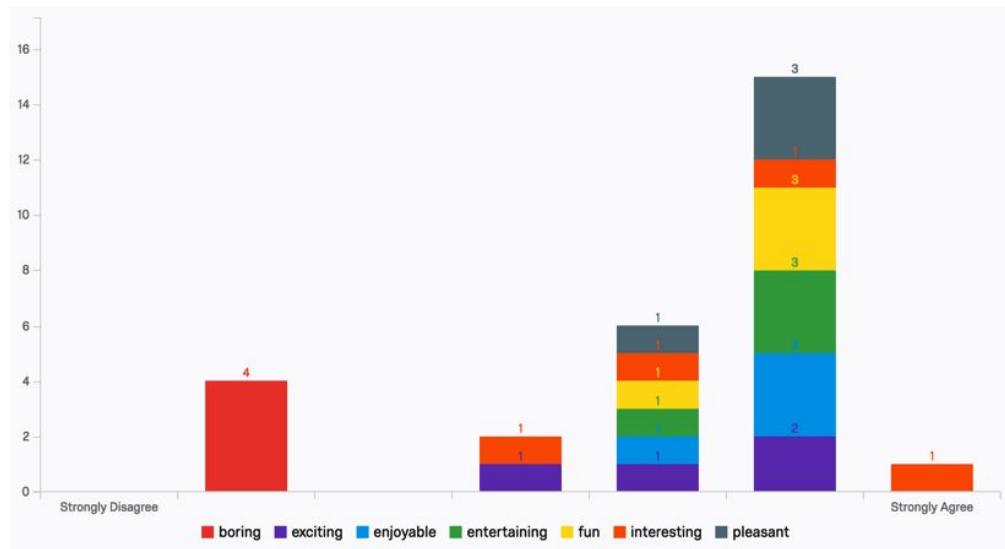## N : 4, M : 12.5

SURVEY RESULTS

GAMEPLAY EXPERIENCE

7-POINT LIKERT

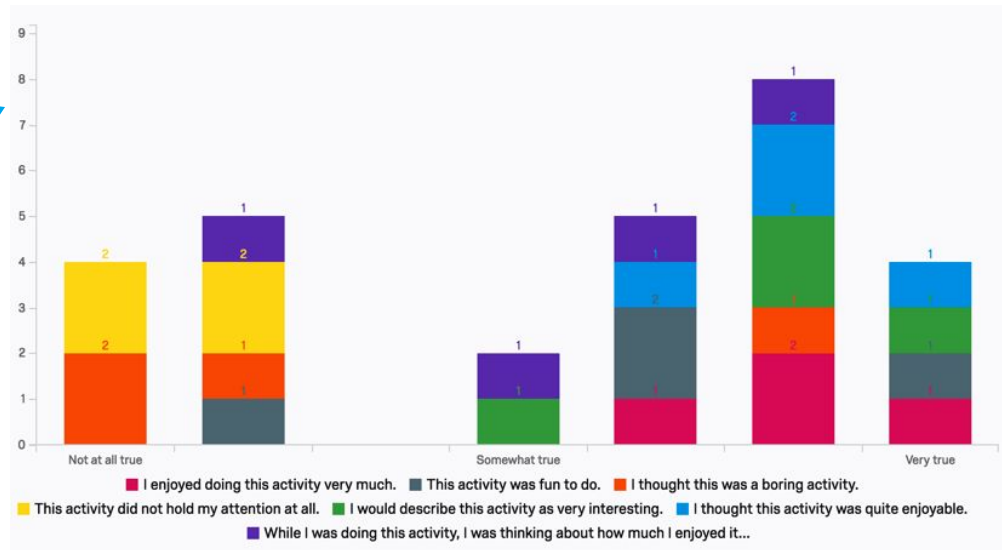## N = 4, M=5.75 FOR FUN, ENJOYABLE, ENTERTAINING, PLEASANT

SURVEY RESULTS

INTRINSIC MOTIVATION/ ENJOYMENT

7-POINT LIKERT

N : 4, M:5.25

SURVEY RESULTS

PERCEIVED EFFORT

7-POINT LIKERT

N : 4, M:4.35
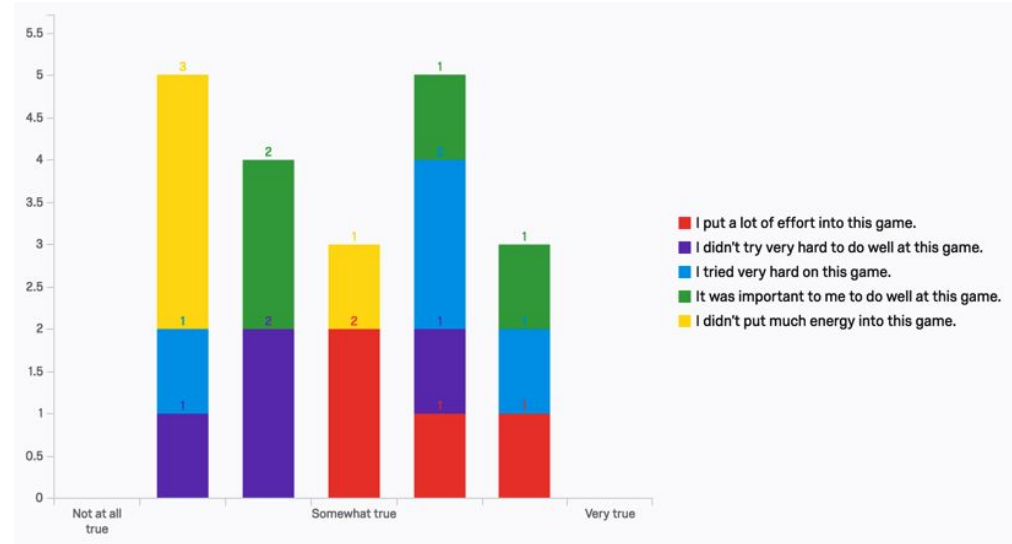
SURVEY RESULTS

FLOW

7-POINT LIKERT

N : 4, M:5.28

Flow survey results chart (7-point Likert scale from Strongly Disagree to Strongly Agree):
- I forgot about time passing while playing the game.
- I became unaware of my surroundings while playing the game.
- I temporarily forgot worries about everyday life while playing the game.
- I experienced an altered sense of time.
- I could become involved in the game.
- I felt emotionally involved in the game.
- I felt viscerally involved in the game.
- I enjoyed the game without feeling bored or anxious.
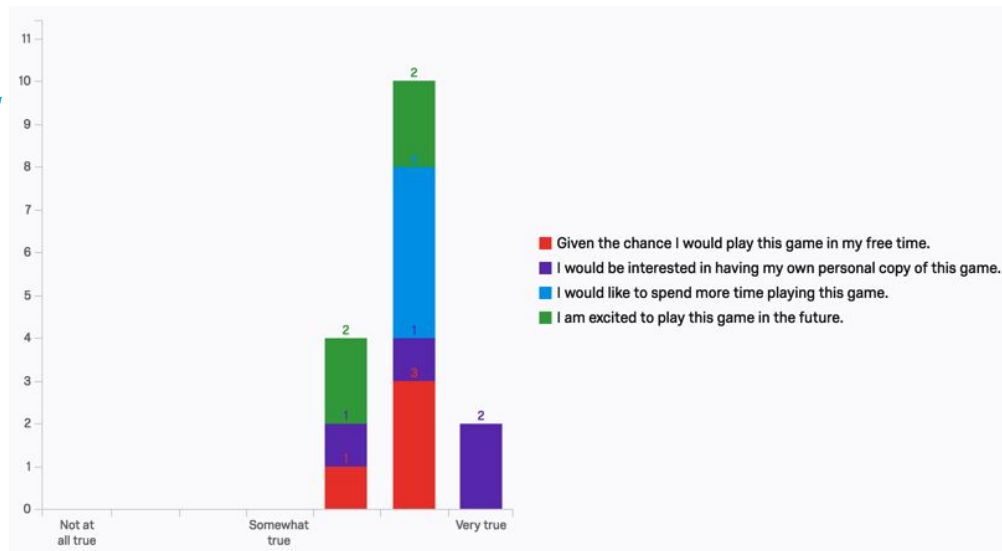- The challenge was adequate, neither too difficult nor too easy.

SURVEY RESULTS

FUTURE PLAY PREFERENCE

7-POINT LIKERT

N : 4, M:5.86

DESIGN RECOMMENDATIONS

Autonomy 🙂

× More clear and smooth phase transitions
× Customizable
  × characters
  × background music
× Provide more effective tutorial

Competence 🏆

× Leaderboard
× Power ups
× Data visualizations
  × Calories burned
  × Speed over time graph
  × Heart rate

Relatedness

× Multiplayer support
× Yeti as the other player?
× More interactions between players

If the duration of HIIT workout is longer, additional interactive design elements are needed

Integrating HIIT in exergame could be challenging, chasing type may be effective!

In HIIT, speed is important, make it prominent on UI