

Phrenic Sound

a campaign to demonstrate the mental effects of various sounds

Vignesh Raja, Andrew Gomez, Sagar Vora, Vadym Budilovskyy, Jameel Al-Aziz, Adam Brenner, Sophie Gerrick, Deborah Estrin

Introduction: Inspiration and Methodology

Background

Our society is filled with loud and repetitive noises to which individuals are constantly subjected. The physical health consequences (hypertension, insomnia, etc.) have been known for many years, however, how exactly does sound affect our mental processing? Inspired by this question, Phrenic Sound hopes to analyze the direct affects of sound on our memory and reaction-time capability.

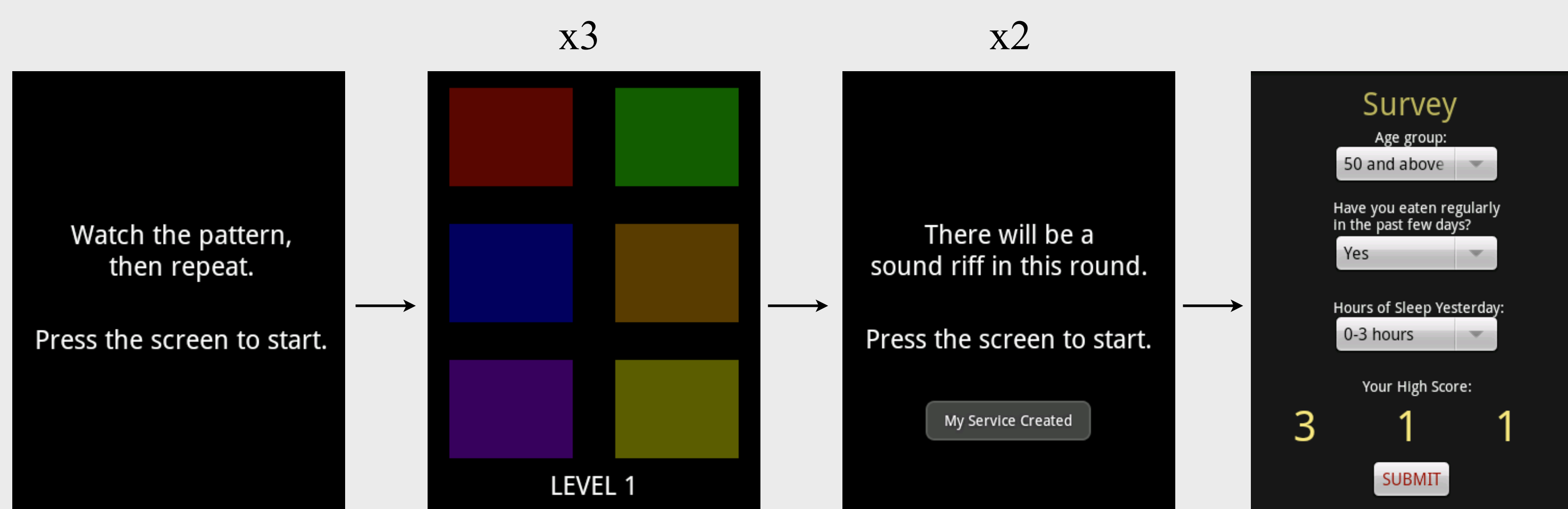
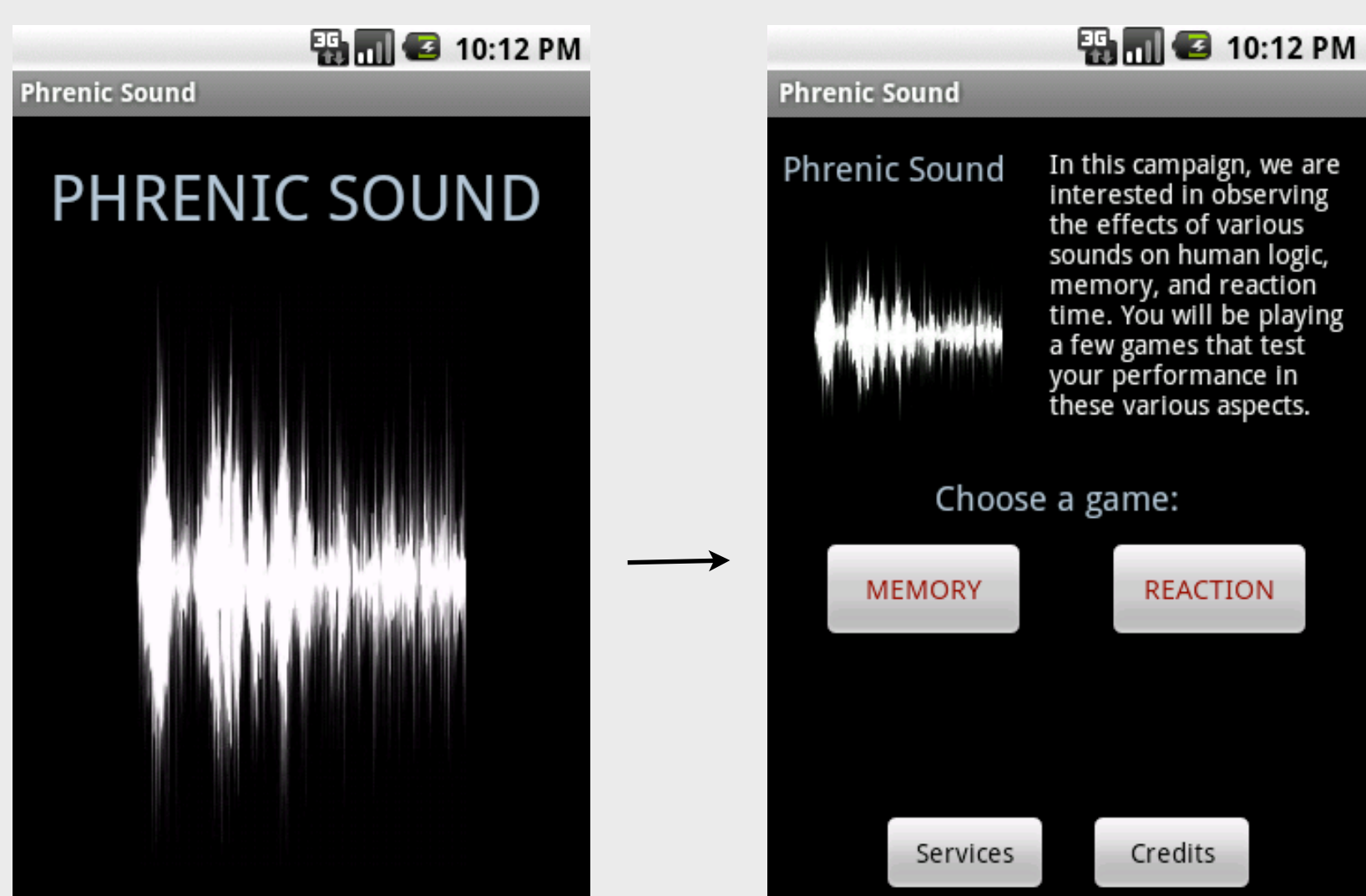
Method

- **Testing**
 - There are *two tests* that the user can choose between, *reaction-time and memory*.
 - Each game has *three rounds*, each of which plays a *different sound* [ambient noise (not played), classical music, ambulance siren].
- **Analysis**
 - Scores and reaction-times are *internally recorded* and then uploaded onto a *SQL database*.
 - The data is then analyzed by group members directly *through the database*.

User Interface: Application Flowchart

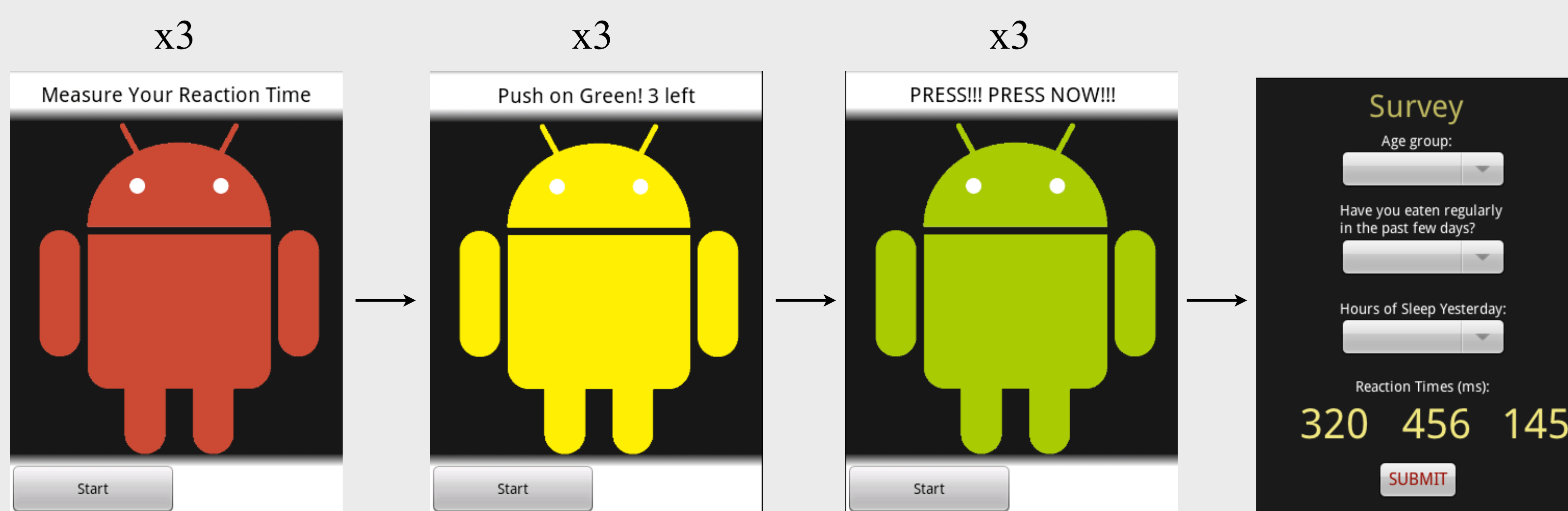
Memory Test

- After pressing the screen, a pattern is presented and the user will be asked to reproduce the sequence.
- The sequence becomes more difficult with level progression.



Reaction-Time Test

- After hitting start, the user will be prompted to click the android logo when it turns green.
- The time between the change in color and the user's tap will be recorded in milliseconds.



Data Storage and Use

Data

Survey

- Survey asks questions about *age-range*, *hours of sleep*, and *recent dietary habits*
- User remains *anonymous* throughout the entire data collection process
- User can *compare results* from each individual round of either test when taking the survey.
- Data can be viewed on the Phrenic Sound website

<http://www.phrenicsound.appspot.com>

Health Monitoring

- After enough people take the tests it will be possible to determine if *certain types of noises can affect mental performance*.
- Additionally, Phrenic Sound provides *live data* for anyone to access off of its website so that the obtained data can possibly be used for *other research ventures* in various fields including *Biology and Psychology*
- The mobile phone also provides a convenient means of tracking personal performance.

