Introduction:

This report will detail the planned testing procedures for our Amazon Alexa Orientation and Mobility Trivia Game.

Business Background:

The client is The American Printing House for the Blind. As stated on their website, “American Printing House for the Blind (APH) is the world’s largest nonprofit organization creating educational, workplace, and independent living products and services for people who are blind and visually impaired.” “Founded in 1858 in Louisville, Kentucky, APH is the oldest organization of its kind in the United States.

Test Objectives:

The objectives of our testing are:

* To ensure that the hardware is receiving valid input. This can be affected by speech patterns, speed, accents, etc.
* To ensure proper processing of valid input. Once input is verified as valid this will test to see if the output for the given input is valid as well.
* To ensure proper flow. This will test the games mechanics and its states.

Scope:

Inclusions

We will include a wide variety of input, both valid and invalid, for the initial; testing phase. We will test single words and sentences, with and without background noise and other interferences. For the second phase we will only include valid inputs, verified in the initial phase, to attempt to stimulate a specific response, or output. A similar testing method will be used for the third phase to test the mechanics and game states.

We will only test in groups of up to four people, since that is the maximum number of players. The only exception is for testing against background noise, where we will use the product in a noisy public environment.

Exclusions

We will exclude any non-English vocabulary since the game will only be available in English. We will also exclude any unnatural of overbearing sounds as background noise since this is intended for use in a classroom setting.

Test Types Identified:

There will be two basic test types. Each type will be run in several different environments during the different test phases.

* Valid Input: This type has testers speaking various words and sentences with the sole purpose of trying to incite any response from the devices. Since any response is acceptable for this test type, only the software’s ability to catch vocal cues is being tested.
* Valid Output: This type has testers speaking specific words and phrases with the intend of inciting a specific response. If that particular response is output the test passes. All other output, or the absence of output is a failure for the test.

Problems Perceived:

The only problems that we perceive are the complications with the hardware catching the verbal input. This is especially important when trying to catch certain words out of a full sentence, or with multiple people speaking at once.

Architecture:

This is the main architecture of the game. Test phases 2 and 3 will be using this architecture to determine success of failure.

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Environment:

We’ll have 3 basic setups:

1. The first will have a single tester speaking into a device. This setup will have the tester positioned at different distances, always speaking at a normal volume. The tester will face towards, away from, and perpendicular to the device at every distance. For this test, the environment will be as quiet as possible.
2. The second will be similar to the first, but with multiple testers. The testers will be testing at equal distances as well as non-equal distances, but will all speak at regular volumes. Their directions will change as well.
3. The third will incorporate various types of noise. These tests will probably be performed in public places, where different levels of background will be naturally produces. We may also use a lab like setting to create controlled background noise for the initial portion of this testing.

Assumptions:

Our assumption is that the first 2 environments will produce fairly predictable results. The quiet environments will allow the hardware to catch the input at a high rate. For the third environment our assumption is that the rate of success for both catching input and producing the intended output will drop significantly. How far this drops and under which conditions will be determining factors in the success of this project.

Functionality