Use Case: Object Detection

Id: UC-1

Description: User (child) is wearing an object which is used for tracking his/her finger movements. This object should be detected by system using webcam.

Level: Sub-function

Primary Actor: User

Supporting Actor: Webcam

Pre-Conditions:

- User is wearing object properly on fingers.
- Webcam is working properly.

Post Conditions:

Success end conditions:

- Object should be properly detected by system.
- User should see “Ready” message.
- Timer will start.

Failure end conditions:

- Nothing is displayed.

Normal Scenario:

- Object is detected by system successfully.
- Ready message is displayed.

Use Case: Drawing using Gestures

Id: UC-2

Description: User is able to draw what he/she wants on the display by moving finger (on which he/she wears object) in air.

Level: User Goal

Primary Actor: User

Supporting Actor: NA

Pre- Conditions:

- Object is successfully detected by system using webcam.

Post Conditions:

Success end condition:

- curve corresponding to finger movements is displayed on screen in time.
- If timer expires then screen will be cleared.

Failure end condition: curve is not displayed in time.

Normal Scenario:

- User draws anything he wants to on screen by moving finger in air.
- Corresponding curve is displayed on screen.

Alternate Scenario:

- Time window for drawing expires.
- Screen is cleared.

Use Case: Building recognizing categories

Id: UC-3

Description: Developers build recognizing categories like alphabets, numbers etc and add in system to make it wider.

Primary Actor: Developer

Supporting Actor: NA

Pre-Conditions: Developer has sufficient data and models to add on a new recognizing category.

Post Conditions: User will get a new recognizing category and able to use it.

Normal Scenario:

- Developer builds/adds a recognizing category.
- User uses it to learn/practice.

Use Case: Getting Audio And Visual Results

Id: UC-4

Use Case Purpose: Getting the correct alphabet as a result.

Description: User will able to get the correct result whatever he/she build in air(with the help of our object on the finger).

Primary Actor : User

Pre-Conditions: Our alphabet will be properly detect by the sensor .

Post-Conditions: We will get our result as the visual of alphabet and along with visual, audio will produce too.

Normal Scenario:

- User draws anything he wants to on screen by moving finger in air.
- Corresponding alpahbet is displayed and audible on screen.

Alternate Scenario:

- Time window for drawing expires.
- Screen is cleared.

Functional Requirements:

- We can use any material as our object for detecting whatever we draw in air.
- Our background will be of the particular color, So that detector will smoothly detect our alphabet without facing any difficulty.
- Our detector will work accurately so that we get our right result.

Non-Functional requirements:

- Our System will be in working condition 24/7.
- System will not stop in between the working mode.
- Power consumption will be less by our system.