White Table

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Team #6

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Customer

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Need and Requirement Specification

Introduction

The White Table is a collaborative, recreational, and educational tool allowing a team or an individual to interact with a responsive display, all with the simple form factor of a coffee table. With a touch sensitive display as the surface of the table, users can express their ideas visually by drawing or writing on the table. The White Table simplifies business meetings by allowing rapid contributions by many individuals with equally rapid documentation saving images to be reviewed later. The White Table allows individuals to casually doodle and sketch in the comfort of a living room. The White Table augments tabletop gaming as the tabletop can become the game itself. The White Table is just that, a table. When not in use, it retains its simple aesthetics as a table allowing its integration into nearly any setting. The White Table is the greatest evolution in table technology since Table Tennis.

Requirements

1. Physical Specification
- **1.1.** The device MUST be able to function as a regular table.
  - **1.1.1.** The device MUST have at least 4 points of contact with the ground for support.
  - **1.1.2.** The device MUST be easily movable.
    - **1.1.2.1.** The device MUST NOT weigh more than 100 pounds.
    - **1.1.2.2.** The device MUST be able to be turned on its side when transporting.
    - **1.1.2.3.** The device MAY have removable legs.
- **1.2.** The device MUST fit comfortably in a standard 16' x 20' living room.
  - **1.2.1.** The device MUST NOT be larger than 4'x4'x4'.
  - **1.2.2.** The device MUST NOT be smaller than 1'x1'x1'.
- **1.3.** The device MUST have a display as the surface of the table.
- **1.4.** The device MAY have a bezel along the edges of the display.
- **1.5.** The display MUST have a minimum 30 ppi
- **1.6.** The display MUST have a 16:9 aspect ratio
- **1.7.** The device MUST be able to receive touch input on its surface.
- **1.8.** The touch input MUST have a greater resolution than the display
- **1.9.** The device MUST have a power source.
  - **1.9.1.** The device MUST be battery powered.
  - **1.9.2.** The device MUST be chargeable through a power cord.
  - **1.9.3.** The power cord MUST be compatible with a standard U.S. 120V outlet.
  - **1.9.4.** The power cord MUST be easily manged.
    - **1.9.4.1.** The device MAY have storage for the power cord.
    - **1.9.4.2.** The power cord MAY be non-removable.
- **1.10.** The device MUST be durable.
  - **1.10.1.** The device MUST be able to support loads up to 50lbs.
  - **1.10.2.** The device MUST be able to function after a liquid is spilled on it.
    - **1.10.2.1.** The device MAY NOT properly receive input with a liquid on the surface.
    - **1.10.2.2.** The device MUST return to normal functionality immediately once liquid is removed.
  - **1.10.3.** The device MUST be resistant to scratches on the screen surface.
- **1.11.** The device MUST be aesthetically pleasing.

1.11.1. The device MUST have a design similar to a standard coffee table.
1.11.2. The device MUST be made of quality material.
1.11.2.1. The device MAY have a frame made of wood.
1.11.2.2. The device MAY have a frame made of metal.
1.11.2.3. The device MAY have a frame made of both wood and metal.
1.11.2.4. The device MAY have internal plastic components.
1.11.2.5. The device MAY have external high quality plastic components.
1.12. The device MUST be able to incline the display and touch interface.
1.12.1. The device MAY be able to incline to 30°.
1.12.2. The device MUST not be able to incline more than 120°.
1.13. The device MUST be able to change between standalone and peripheral mode.
1.13.1. The mode changing switch MAY be hardware based.
1.13.2. The mode changing switch MAY be software based.
1.14. The device MUST have a port for connecting external devices

2. Functionality
2.1. The device MUST be able to operate in a standalone mode.
2.1.1. The device MUST allow users to draw on the surface using some touch input method.
2.1.2. The device MUST allow users to save their drawings to internal storage.
2.1.3. The device MUST allow users to save their drawings to external storage.
2.1.4. The device MUST allow users to load their drawings from internal storage.
2.1.5. The device MUST allow users to load their drawings from external storage.
2.1.6. The device MUST allow users to switch to peripheral mode by some method.
2.2. The device MUST be able to operate in a peripheral mode.
2.2.1. The device MUST be able to act as display output device for an existing computer.
2.2.2. The device MUST be able to act as a touch input interface for an existing computer.
2.2.3. The device MUST be able to act as an audio output device for an existing computer.
2.2.4. The device MUST be able to switch to standalone mode by some method.

3. Standalone Views
3.1. The device MUST present a view which allows drawing and writing on the surface.
3.1.1. The view MAY allow the user to change the drawing color.
3.2. The device MUST present a view which displays a list of saved drawings.
3.2.1. The view MUST sort drawings.
3.2.1.1. The view MUST sort drawings by time last modified.
3.2.1.2. The view MAY sort drawings by time created.
3.2.1.3. The view MAY sort drawings by storage location.
3.2.2. The view MUST allow the user to select a particular drawing.
3.2.2.1. The view MUST allow the user to load a selected drawing.
3.2.2.2. The view MUST allow the user to select one drawing at a time.
3.2.2.3. The view MAY allow the user to select multiple drawings at a time.
3.2.3. The view MUST allow the user to delete selected drawing(s).
3.2.4. The view MAY allow the user to move drawings from one storage location to another.
3.3. The device MUST present a screensaver view which displays pre-selected media.
3.3.1. The device MUST be able to automatically enter screensaver mode when inactive.
3.3.1.1. The device MAY be able to let the user change how long the table will wait before entering screen saver mode.

3.3.2. The device MUST be able to automatically leave screensaver mode when input is received.

4. User Experience
- **4.1.** The device MUST have a multitouch enabled surface.
  - **4.1.1.** The device MUST accept input from a specialized pen.
    - **4.1.1.1.** The device MUST come equipped with one specialized pen.
    - **4.1.1.2.** The device MAY come equipped with multiple specialized pens.
    - **4.1.1.3.** The specialized pen MUST NOT require a separate power source.
      The specialized pen MAY NOT require power at all.
      The specialized pen MAY be charged through the table.
    - **4.1.1.4.** The device MUST have a storage location for the specialized pen(s).
    - **4.1.1.5.** The storage location MAY charge the specialized pen(s) should they require power.
  - **4.1.2.** The device MAY accept input from fingers.
  - **4.1.3.** The device MAY accept input from other arbitrary objects.
  - **4.1.4.** The device MAY be pressure sensitive.
  - **4.1.5.** The device MUST accept input from up to 10 unique objects simultaneously.
  - **4.1.6.** The device MAY NOT accept input from 40 or more unique objects simultaneously.
- **4.2.** The device MUST be simple and intuitive to use.
  - **4.2.1.** Each function of the device MUST be accessible with no more than 4 actions.
  - **4.2.2.** The device MUST be able to be configurable by a single individual.
  - **4.2.3.** The device MUST be able to be operable by a single individual.
  - **4.2.4.** The device MUST have immediate response to user interaction.

Need

Team collaboration and documentation is a major challenge in all levels of industry and business. White boards and paper leave much to be desired in terms of functionality as they do not integrate well into digital technologies. The White Table proposes to allow rapid visual collaboration and documentation in the simple form factor of a table. Multiple users could draw and write notes to share in real time, and the implementation as a table allows for ubiquitous versatility. Currently there are no products on the market that have the proposed functionality of the White Table. Collaborative touch displays exist but are likely too cost prohibitive to persuade adoption over traditional collaboration methods like white boards. Furthermore, many existing products take on the form of wall mounted boards or lack a simple aesthetic preventing integration into casual settings. Our customer desired this product as a means to easily draw and record his ideas to be easily shared. Initially the target market is small businesses and teams looking for an easy way to collaborate. The target market will hopefully be expanded to the household with the table as a recreational product.

Summary

The White Table is an interactive touch display as the surface of a table allowing collaboration and recreation in any setting.