PaperCup

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Why PaperCup?

PaperCup is designed to ease the sharing of content between people separated by distance.

Other similar products like Skype, Google Hangouts, or watch2gether are hindered by lag in the form of drop in video quality and disconnecting from other users. PaperCup is designed to avoid these pitfalls by streaming media player controls rather than the media itself.
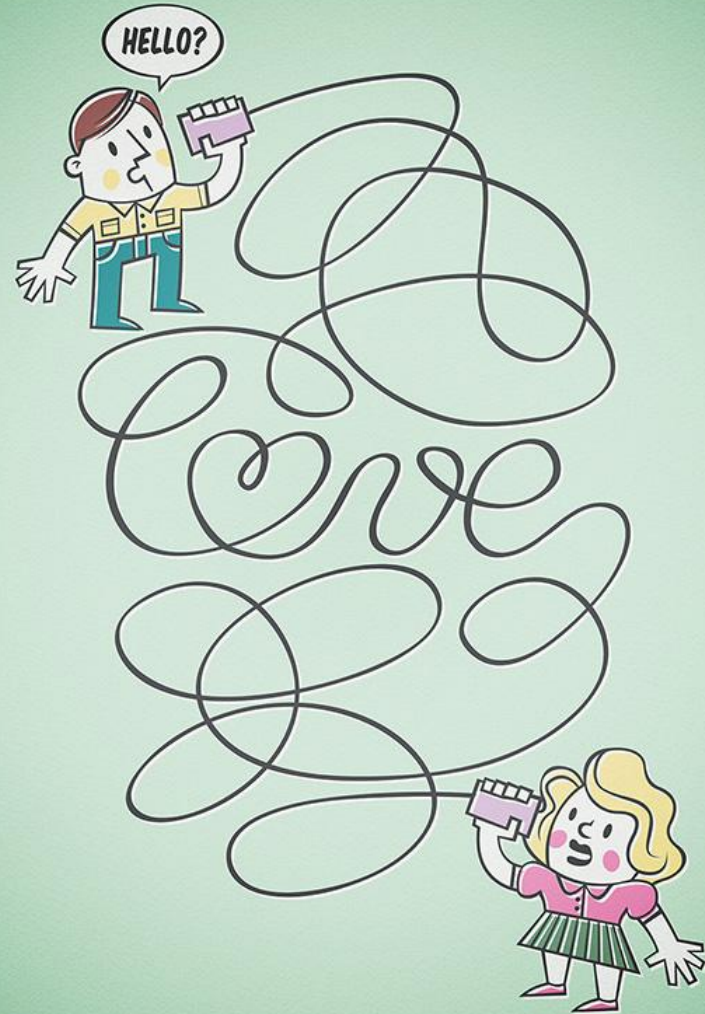
Requirement Summary

From our functional and nonfunctional requirements, we met the following:

↪ Create and join rooms
↪ Text chat with other user
↪ User Friendly
↪ Intuitive Controls
↪ Syncing video (play, pause, stop, seeking forward and backwards)
↪ Backwards compatible with Windows Operating Systems
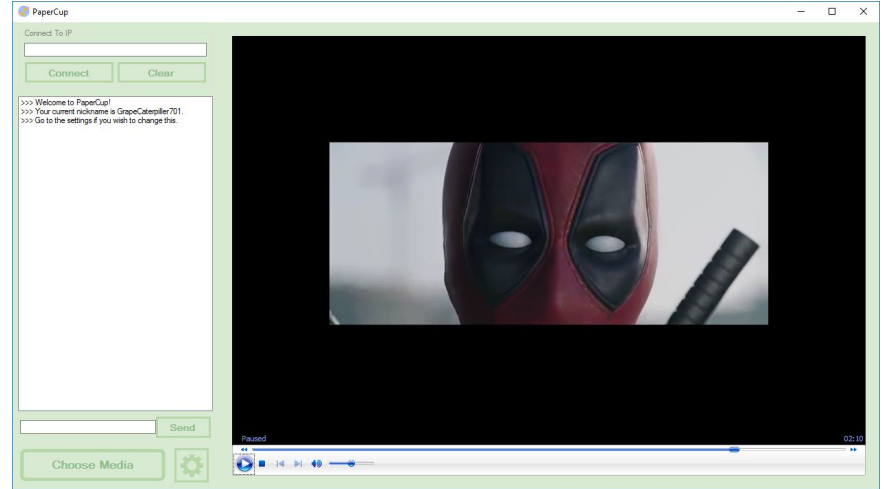
Requirement Methods

1. Error Analysis

Gathered issues and errors commonly found in competitor's products in order to identify complications to avoid during development.

Issues Found	Solutions
↪ Lag in the Chat ↪ Difficulty Connecting to Friends ↪ No Backwards Compatibility	↪ Small group sizes ↪ Intuitive and user-friendly controls ↪ Connecting through I.P. Address ↪ Compatible and Universal Windows Features

2. Narration

Asking users to complete a list of tasks with competitor products and taking notes of what they did and what comments they made during the tasks. From their comments and our notes, we gathered a list of requirements that we wanted PaperCup to achieve.

| Comments Collected	Conclusions
↪ Easily accessible ↪ Low learning curve ↪ Have fun ↪ Privacy ↪ Good visual design ↪ Lag is a problem	↪ Text Chat ↪ Create and Join private rooms ↪ Watch Video together ↪ Decrease lag

Requirement Methods Pt. 2

3. **Character Profiles**

Gathering a group of users to interview and observe in order to create the ideal user profiles for PaperCup.

Types of Users found	Conclusions
↪ Film Enthusiast ↪ Music Junkie and artist ↪ Computer Scientist	↪ Program was geared very well towards film and music. ↪ On the technical side, the program needed more work. ↪ Users definitely found the experience enjoyable.

Iterative Design: Prototype to Completion

- Low-Fidelity - Paper Prototype + Wireframe
  - Switched from a feature-crowded screen to a minimalist approach
  - The chat box when from minimizable to always open in order to convey that you are watching with another user
  - Discarded video and mic chat to avoid conflicts between chat sound and media sound
- High-Fidelity Prototype
  - Opening the application takes you directly to the video player in order to easily connect with user and match our current connection system
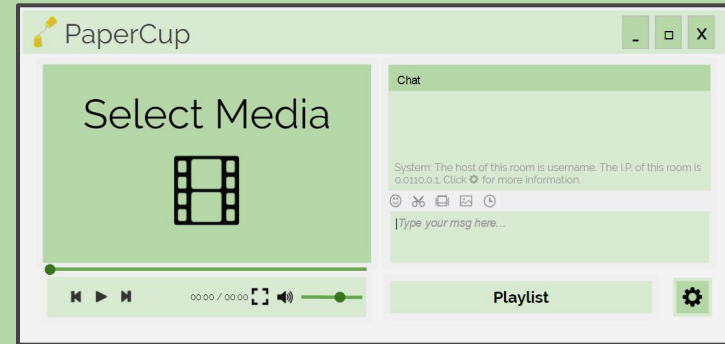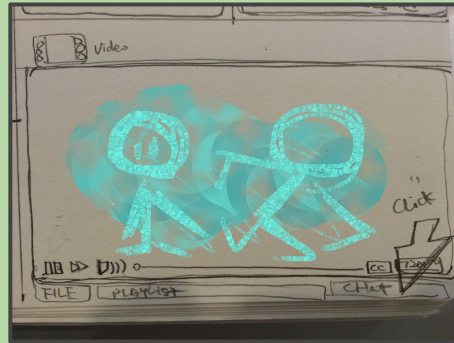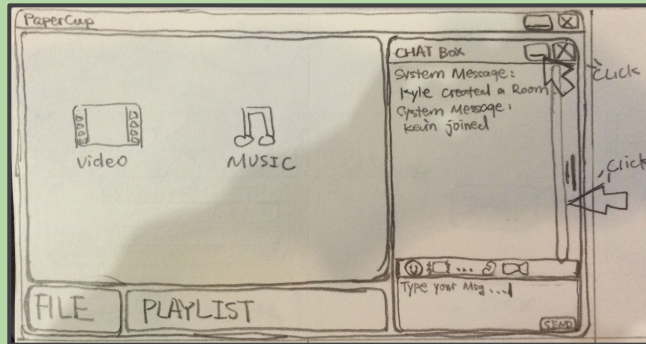
Conclusion

Our design innovates on traditional video watching applications by sending over the information of the video player instead of the video data.

What we successfully finished:
- ↪ Video Syncing
- ↪ Chat system
- ↪ Connection over LAN
- ↪ Intuitive Controls
- ↪ Good Art and Design

What we couldn't do: Networking
- ↪ We spent about half of our project time trying to get different connection types working.
- ↪ The best we could get was a LAN connection between only two people.
- ↪ We tried using the DigitalOcean server, but we couldn't get the C# DigitalOcean API to work with our program.
- ↪ Due to all the time we dedicated to networking, we were unable to implement a lot of features we were really excited about implementing such as multi-user rooms and playlists.

PaperCup in Use
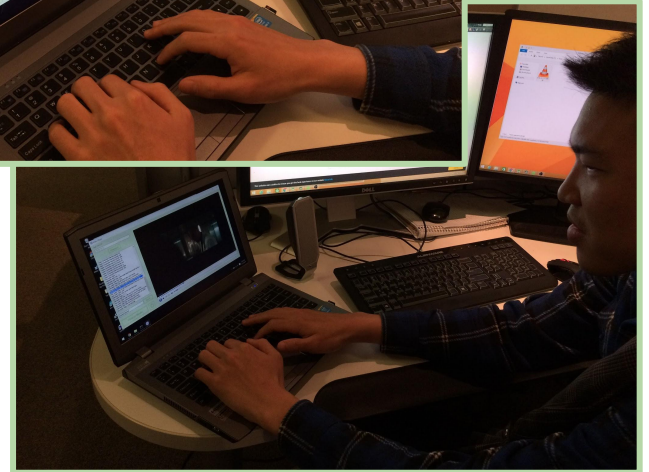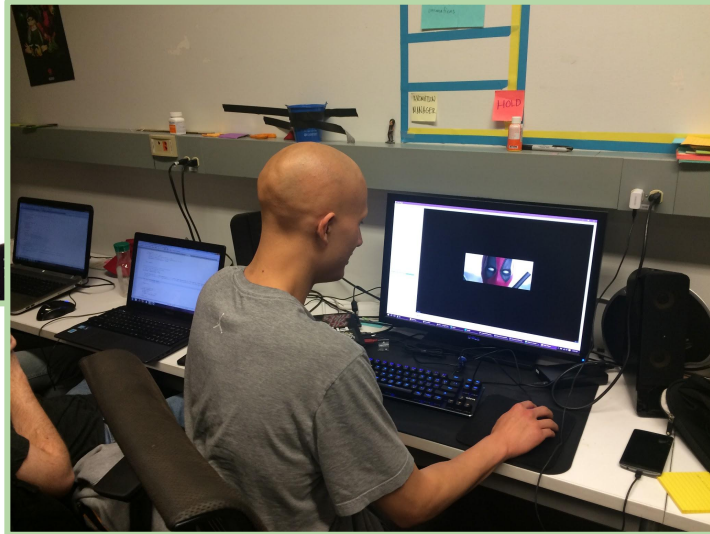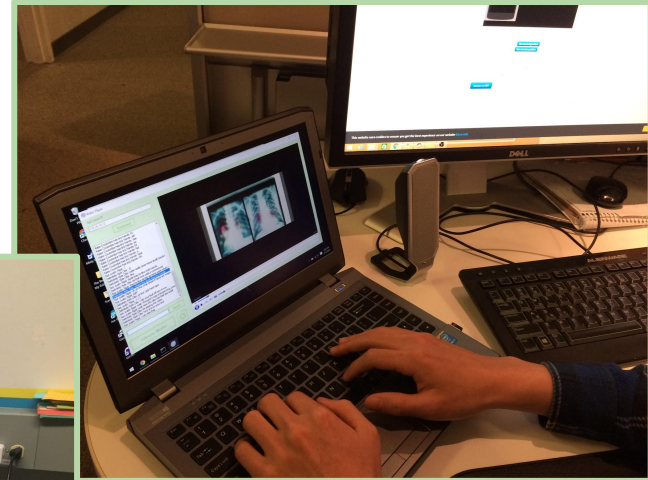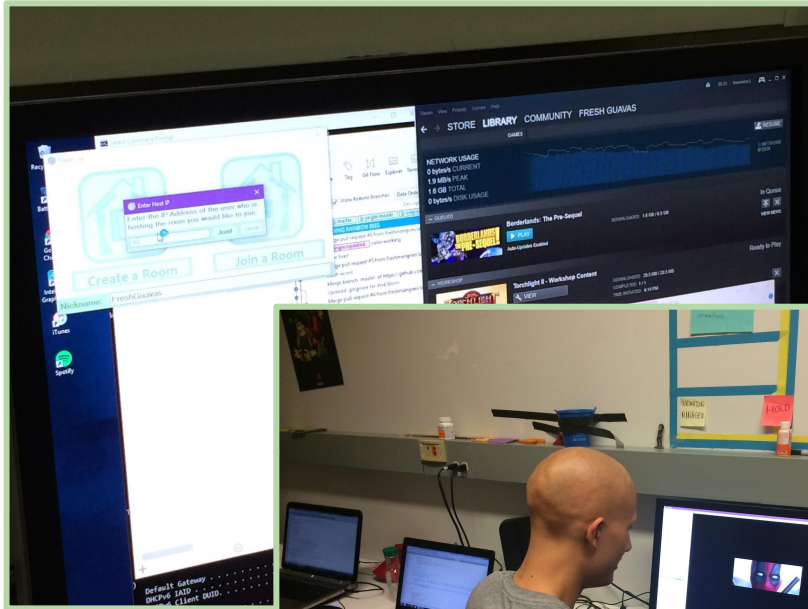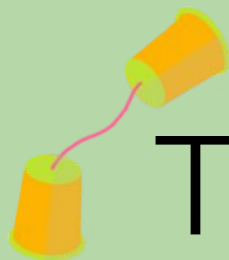
Thank you!

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