



Interactive Video Player

CS3249 Project

Group 3 – 1

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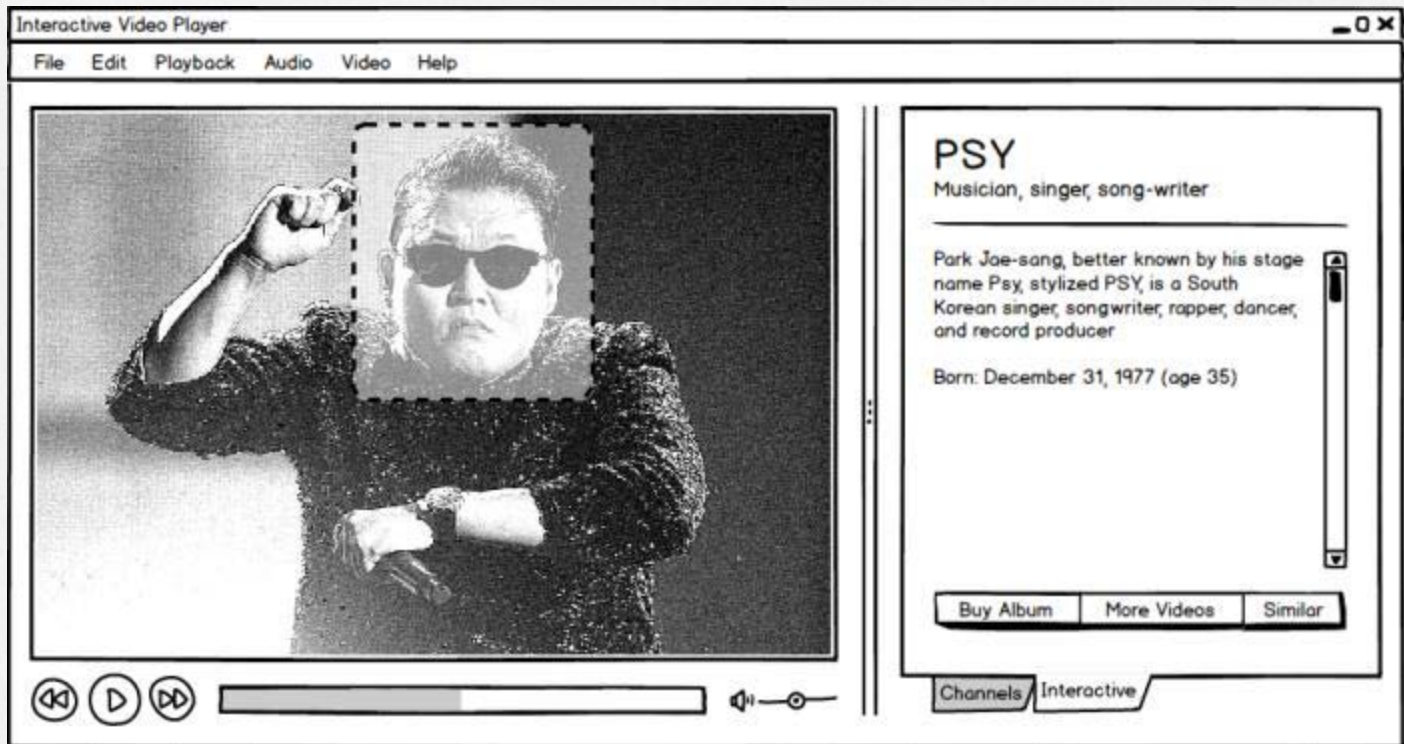
System Objectives

- o Objective:
 - o Create a simple tool to allow users to interact with what they are watching.
 - o Eliminate the one sided process of watching movies or TV shows.
- o Target Users:
 - o Individuals who watch movies or TV shows on their computer.

The System

- o Major Features:
 - o Open and play any video file
 - o Identify key parts of the video and make it user clickable
 - o Provide relevant information about the selected feature from the video
- o Type of System:
 - o Stand-alone application with a database of information for multiple movies/TV shows.

Initial GUI Design



Final GUI Design



The screenshot shows a web browser window with a video player on the left and a product page for the iPhone 4S on the right. The video player contains a video of two men, one holding an iPhone 4S. The product page includes the title 'iPhone 4S', two images of the phone (front and back), a description, and the price.

Hide Sidebar

iPhone 4S



This is an iPhone 4S, which is a touchscreen-based smartphone developed by Apple Inc. It is the fifth generation of the iPhone, succeeding the iPhone 4, and was announced on October 4, 2011.

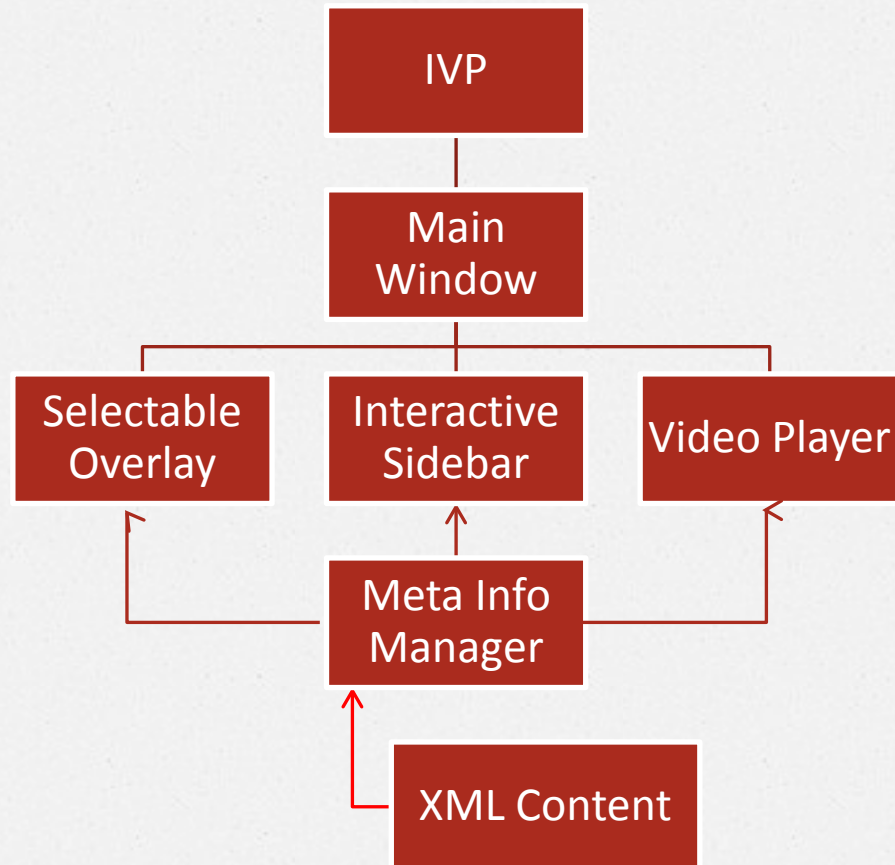
The cost of the iPhone 4S is currently sitting at S\$350.00

Open

GUI Design Principles

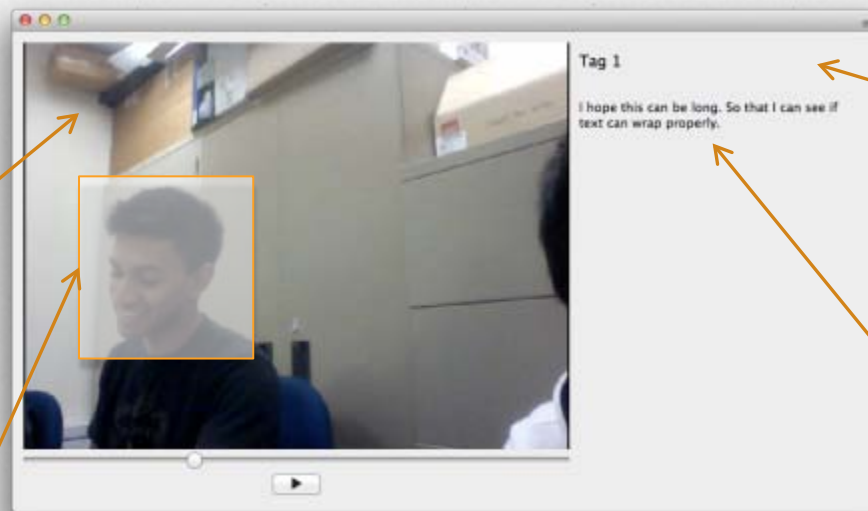
- o Uses Qt 5.0 multimedia classes
- o Simple, clean and minimalistic
- o Video playing is the focus
- o Interactivity is a feature
- o Meta content is readily accessible and readable
- o No need for extra playback buttons

System Architecture



System Architecture

Main Window (QMainWindow)



Video
(QMediaPlayer
drawn on
QGraphicsView)

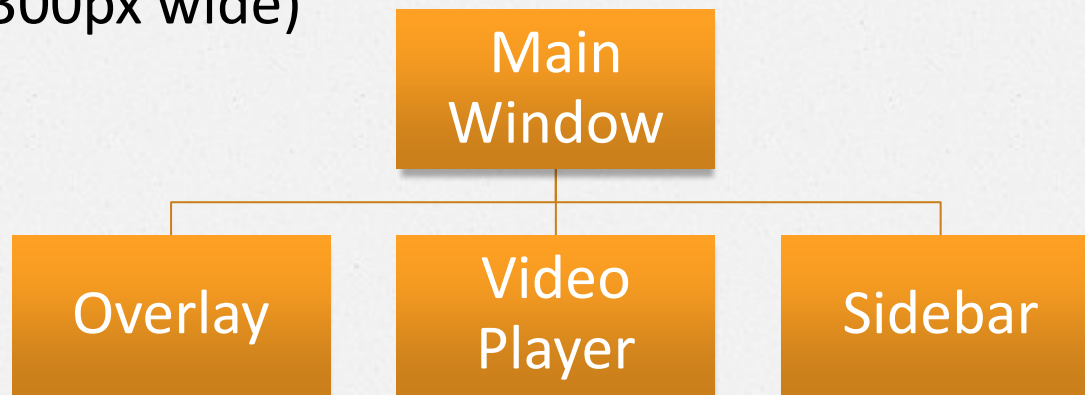
Selectable
Overlay
(QWidget)

Interactive
Sidebar
(QScrollArea)

XML
content
(QtXml)

System Architecture

- o The main window consists of the overlay, video player and sidebar.
- o The overlay and video player are stacked.
- o The sidebar is a fixed width QScrollArea.
(300px wide)



System Architecture

- o The overlay is where the clickable regions are created. It is stacked on top of the video player layer and spans the width/height of the video.
- o When a selectable region on the overlay is clicked a signal is sent to show the sidebar.
- o When a non-selectable region on the overlay is clicked the sidebar is hidden.
- o The sidebar shows all XML content

Difficulties & Issues

- o Having an overlay window on top of the video player for hover event detection (fixed by using QGraphicsView instead of QVideoWidget).
- o Having a sidebar that shows and hides while maintaining video aspect ratio
- o Parsing XML content for the sidebar
- o Progress bar for tracking time of video
- o Size of the open movie file gets reset immediately



Demo!

Future Changes & Conclusion

- Requires a large database of pre-determined information for interactivity (no image recognition)
- Moving images requires a moving selectable area.
- Possibly implement face detection for the moving selectable area.
- Image recognition will make our system more automated.