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I - Artist's Statement

There are countless museums throughout the world which display beautiful pieces of art. Museums such as the Louvre Museum in Paris or the Metropolitan Museum of Art in New York City are known world wide as museums portraying such pieces. There is one problem with displaying artwork in this fashion; it may not be accessible to everyone.

There are a variety of reasons why a person would be unable to visit one of these museums, the two most prominent are monetary obstacles and physical limitations. Visiting the Louvre or the Metropolitan Museum of Art are not free and especially in these economic times many people are unwilling to pay a large amount of money to see pieces of art. Alternatively, some people who are physically handicapped may have difficulty making the journey to and through the museums. These two obstacles, along with several others, limit the potential visitors of museums. This project will show a possible alternative to the traditional ways of visiting museums.

The project will create a digital museum displaying several works of art. The art in the museum will be the short studies I have completed for the class. Each exhibit in the museum will have a plaque below it describing what the visitor is seeing. The visitor will explore the museum from their computer using the keyboard to control where they walk in the museum and where they look. Digitizing museums in this manner gives many people access to museums that would not be able to see one otherwise. It is my goal to demonstrate that the experience of visiting a museum can be simulated through the use of digital technology.

II - References / Influences

- I. **Google Maps** - The ability to digitally explore an area is not a new idea. Google Maps has implemented this idea quite well and has been used as inspiration to apply the same techniques in a new setting. To see an example of Google's system please visit <http://maps.google.com/> and use their street-viewer mode.
- II. **Louvre 3D Exploration** – The Louvre has developed a system very similar to the one being developed for this project. The Louvre's version was only found after the development was underway but served as a good reference. The Louvre's system can be found here: http://www.louvre.fr/llv/dossiers/liste_ei.jsp?bmLocale=en
- III. **3D Exploration Video Games** – Games such as The Elder Scrolls IV: Oblivion allow the player to explore a 3D world from the comfort of their own home.

Video games such as oblivion are principal inspirations for this project. Details can be found here:

http://en.wikipedia.org/wiki/The_Elder_Scrolls_IV:_Oblivion

- IV. **Example of Museum Prices** – Most if not all museums are accompanied by a website which specifies how much it will cost to visit them. For instance this page from the Metropolitan Museum of Art shows how much it costs to visit a museum: http://www.metmuseum.org/visit/general_information/. While the prices are not impossibly high due to the recession most people would be unwilling to pay the given amounts to visit a museum.
- V. **Autodesk Maya Showreel** – Videos such as Autodesk’s Video Games showreel of 2008 show the potential when modeling with Maya. These showreels are a principal inspiration to model the museum in Autodesk Maya. The 2008 video game showreel can be found here: <http://www.youtube.com/watch?v=veAUvOEcUaA>

III - Technical Details / Methodology

The museum will be modeled in Autodesk Maya and programmed using the Python programming language and the Panda3D libraries. Most of the installations will be placed in the museum using Maya directly. Some pieces, such as the Stop-Motion video, will be placed in the museum manually using Python. The program will be compiled into a single executable file which will run on most Windows-based operating systems. The program will support both keyboard input and Xbox 360 Controller input. See the “Running the Program” section for more details.

IV - Installing / Running the Program

The file “BillsMuseum.exe” is the installer program for the museum. To install the program just run BillsMuseum.exe (either by double clicking on it or highlighting it in windows explorer and pressing “enter” on the keyboard). The installer will bring up an installation wizard to guide you through the rest of the installation process. It is recommended that you accept the default settings for the installer.

To run the program you will use the new menu entry which will be automatically added to your computer’s start menu after the installation completes. To run the program open the start menu and find the entry titled “BillsMuseum”. Click on this entry to open it and click on “Play Bill’s Museum”. This will launch the program automatically.

To uninstall the program use the “Uninstall Bill’s Museum” menu entry in the BillsMuseum menu mentioned above.

V - Using the Program

When you start the program (and it finishes loading) you will see a window open on your computer showing your view of the museum. The controls for the program can be found displayed at the top left and top right of the screen. There are two ways to control the program: using your computer’s keyboard and an Xbox 360 Controller

attached to your computer (instructions on how to connect the Xbox 360 controller are not described here).

To move through the museum you will use the arrow keys of the keyboard. The up arrow will move you forwards, the down arrow will move you backwards. The left and right arrows will turn you left and right respectively. The 'w' key will make you look up while the 's' key will make you look down.

To move through the museum using the Xbox 360 Controller you will use the right thumbstick. Pushing the right thumbstick in any direction will move you in that direction relative to where you are currently looking. The left thumbstick controls where you are looking, move it in a direction to turn in that direction.

The escape ('Esc') key can be used to exit the program. Should you find yourself unable to move in the museum or feel slightly lost press the spacebar to teleport back to where you started in the museum. A table describing these controls for reference can be found below.

While moving through the museum you will hear some sounds which play in a loop. These sounds are coming from the stop motion exhibit and get louder as you approach the exhibit and quieter as you get further from it.

Action	Input
Move Forward	Press Up Arrow on Keyboard or Push Right Thumbstick of Xbox 360 Controller up
Move Back	Press Down Arrow on Keyboard or Push Right Thumbstick of Xbox 360 Controller down
Turn Left	Press Left Arrow on Keyboard or Push Left Thumbstick of Xbox 360 Controller left
Turn Right	Press Right Arrow on Keyboard or Push Left Thumbstick of Xbox 360 Controller right
Look Up	Press 'w' key on Keyboard or Push Left Thumbstick of Xbox 360 Controller up
Look Down	Press 's' key on Keyboard or Push Left Thumbstick of Xbox 360 Controller down
Quit Program	Press escape ('esc') key on Keyboard
Return to center of Museum	Press spacebar on Keyboard

VI – Demo Video

There is a video demonstration of the program available in both avi and mov format. The video is called Demo.avi (or Demo.mov). The video should have been submitted with this document. It is recommended that the avi video file be played in Windows Media Player and the mov video be played in Quicktime. Note that any jerkiness or strange display errors in the video is due to the recording software and will most likely not appear in the program itself.