# Bathroom Partiee!!

**TEAM 14**
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# Abstract

"Bathroom Partiee" is a short animation depicting common objects in a bathroom come alive one mysterious night. The animation is approximately 5 minutes long. We used the 3D rendering package Alias|Wavefront to create the objects as well as the animation.

# Introduction

We created this story in a form of an animation to entertain our audience. We hope viewers will be able to identify with the story's moods and themes as well as each character's personalities.

This project is an extension of assignment 3 and 4 where we experimented with object creation and scene modeling. Given a longer length of time to complete this project and having been endowed with more sophisticated tools, we aimed to create a piece that tries to capture some of the art and complexity in computer graphics animations featured in films and television commercials.

# Goals

The overall goal of this project, at an abstract level, has been to produce a smooth and interesting animation using the accessible resources and acquired knowledge. In turn, this goal is outlined by mutiple concrete objectives; the group aimed at understanding and experiencing the comprehensive process in animation-creation, becoming familiar with the software package, Alias|Wavefront, and improving our abilities to determine fair trade-offs.

In accordance with learning the process to creating a successful animation, the group faced a plethora of new challenges. The group has to create an unanimously-agreed intriguing storyboard, and must persist to implement that storyboard with little deviation. In order to effectively convey the storyboard and to attempt at achieving special effects, specific skills of motion-path definition, consistent lighting environment, and specific camera arrangements have been targetted goals. In particular, as our storyboard consisted of small animated objects in a relatively large room, the task of creating an exciting

and busy party atmosphere becomes heavily dependent on the smoothness of camera location and perspective animation. Moreover, as the proposed setting is the night-time, the overall usage of lighting is tricky, such that objects can be expressively displayed without violating the overall night enviornment. Finally, as the story required the coming-to-life of bathroom objects, the group must determine a healthful level of realness that does not conflict with animation. Conversely, the specific animations should express the personalities of the each objects, without compromising their apparances; with respect to realistic modelling, our objects will display emotion with only semantic deformation, and not contrived facial expressions or appendages.

On the other hand, our goals with Alias|Wavefront are broad and dynamic. We wish to familiarlize ourselves with the software such that animation effects are captured with minimal frustration and grief. We strived at maximizing the utility of the package by exploring various features in the package. And as we were able to further identify Alias tools and needs of our storyboard, we aimed at customized expertise in Alias's specific texture-mapping approaches, motion-path definitions, curvature and pivot management, object deformation techiniques, lighting and camera arrangements, and other animation tools.

Finally, the project inherently supplied an abundance of trade-off decision, the most frequented being that between the "coolness" and the practicalness, and between the frustration level and a highly sophisticated final result. We began by making realistic proposals and projecting practical milestones and concrete sub-goals. We also made provisions of fallback plans which, hopefully, may reduce difficulty more than quality. Lastly, and most currently, we remain in the battle to make this final project a enjoyable experience that is not hazardous to our health.

# Achievements

In the end, our group has achieved most of the goals we had at the beginning of the project. We are comfortably familiar with the Alias|Wavefront environment.

In creating our animation, we learned the following techniques that are often used in computer animation:
· boolean operations to create new objects.
· deformation to creat realitic movements for the objects.
· texture mapping to create labels for our objects.
· animation using action windows to manipulate motion paths and keyframing.
· working with camera perspectives.
· shading objects to create colors and various surfaces in the scene.
· working with lighting.

We have also achieved in making a smooth animation through the consistent lighting and camera work. Our final animation follows most of our storyboard. However, because of the time constraints and our mistake of spending a good portion of the month working on this project in a depth-first approach instead of breath-first approach as suggested by both the TA and the instructor. We realized that unless we changed our method of creating this animation, our final animation will not be able to be completed. In the end, we did resort to cutting out quite a few scenes because of the complexity of the scenes. For

example, in our original storyboard, we had a scene in which objects would jump into the bath tub filled with water and thus create a splash. At the advice of the TA, we cut out the scene because we did not have enough time to create realistic looking splash.

We succeeded in giving some personality to the objects with out the use of facial expressions. This was done by object movements in reaction to interactions with the environment and other objects. The movements of the objects are created using both traditional methods of translating and rotating the objects as well as deformation.

Our original plan was to explore inverse kinematics for the deformation; however, we learned that IK modeling was not necessary for our objects and that curve deformation would work just as well. However, we ran into quite a few Alias specific problems when we were working with grouping objects together. Alias always placed the grouped objects' pivot at the origin. This caused several difficulties when we tried to do transformations and deformations to the objects. However, after much headache and testing, we were able to create believable deformations.

While creating the animation, we had to make some decisions for tradeoffs. Because rendering in Alias takes a long time, we had to tradeoff details on the objects for faster rendering time. This meant we had to change how close we want the audience to see the objects. The two main objects that we had to reduce the details are the toothbrush and the hairbrush. Because the bristles consist of so many objects, we had to reduce the number of bristles to reduce the rendering time. However, in the end, our camera work made the details almost inconspicuous.
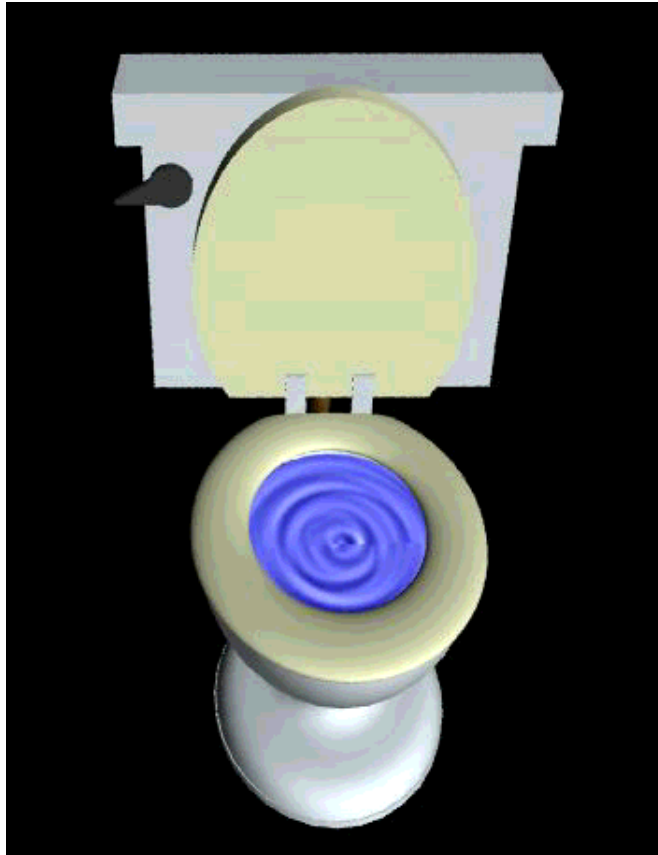
**Here are some images of our final animation scene:**

view of the bathroom
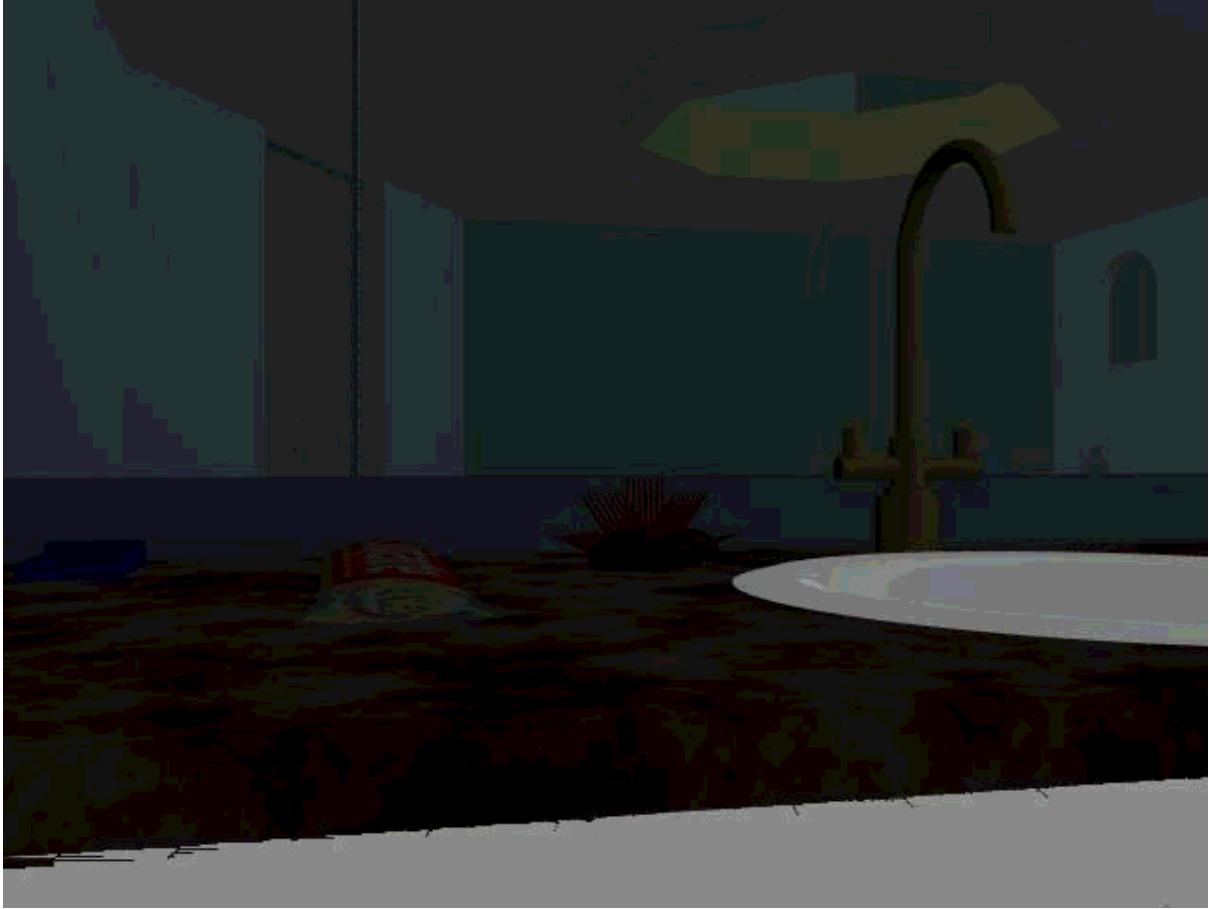
Part of the "Introduction" scene

view of the toilet

view of the gladiator fight scene

# Individual Contributions

*Kae-Chy's Contributions:*

**Objects Modeled:**
·bathroom
·toilet
·toothbrush
·tub
·overall scene setup

**Technical expertise:** deformation

**Scenes animated:**

"Waking Up":
This is the scene in which we first see the objects become animated. Deformation is used quite a bit in this scene. The animation is approximately 2 minutes long.
"Limbo":
This scene involved the comb, the brush, the dental floss, and the eight medicine bottles. The medicine bottles are doing the limbo.

*Jane's Contributions:*

**Objects Modeled:**
·medicine bottles
·shampoo bottle
·conditioner bottle
·comb
·brush
·soap
·mirror cabinet
·object labels

**Technical expertise:** texture mapping

**Scenes animated:**
"Slip-'n-Slide":
In this scene, the shampoo, conditioner, and the soap are playing in the tub. The shampoo and conditioner are ready for some friendly competition, when the obnoxious soap challenges them.
"Finale":
This scene ties up the animation by first transitioning out of specific group activities and into an all-inclusive view. The q-tip flies off from the Gladiator fights on the sink, when the shampoo and conditioner bottles push the soap off the tub. The soap then inadvertently trips the Viagra bottle, and pushes the Viagra bottle out of the sacred bathroom grounds. Out of fear of secret being discovered (that they become alife), the bathroom objects leave the Viagra bottle, frozen with fear, in the dark hallway outside.

*Richard's Contributions:*

**Objects modeled:**
·sink/counter/faucet
·tub fixtures
·toothpaste
·dental floss
·toilet paper

**Scenes animated:**
"Introduction":
A flythrough of the bathroom to let the audience get a sense of what objects are in the bathroom and where they are located. At the end the sparkles/bright lights is seen through the skylight.
"Gladiator Fight":
Toothbrush and toothpaste use Q-tips as weapons. A battle takes place on the spout at the sink.

# Lessons Learned

While completing this final project, we developed a thorough understanding of the animation process. During our brainstorming and storyboarding sessions, we extended our imaginations in new ways in seeing what are the character personalities, how does each character contribute to moving the story along, and how to convey the personalities and actions in the story. We decided to preserve the shape and form of the bathroom objects and not to augment them with human-like or animal-like forms, i.e., eyes, arms, and legs. A major part of animating the story has been learning how to use movement and deformation to give the characters personality traits without the benefit of using obvious emotional indicators as eyes and mouths would provide.

We spent a significant amount of time learning the tools in Alias|Wavefront. This has included learning how to work with basic primitives like curves, how to transform and group primitives together to create realistic bathroom objects, and how to apply appropriate shading, to more complicated issues like key-framing deformations, key-framing movements of multiple objects, panning the camera view to unique perspectives, mapping textures to objects and keeping the mappings in place, and simulating a gradual rise in lighting in a scene. We have also learned tools to piece frames together in creating the final animation, i.e., SGI movie tools and Adobe Premiere.

We gained an important lesson from our TA. That lesson is to not pursue a breath-first approach in developing the animation but to use a depth-first approach so that at least one member of the group has gained some knowledge of the issues and techniques needed at later stages of the animation process. Initially we did not have any fallback planning if we were to fall behind. Our TA made us aware of this and we eventually cut a few scenes from the story and did away with having to deal with animating water motion.

Working in a group has also created many logistical problems. We partitioned the work of animating the six scenes in the story. In doing so, we learned that maintaining consistency between scenes is important in upholding the fidelity of the story: (1) lighting should be the same between scenes (2) object locations should be consistent when in one scene the camera pans into the perspective of a camera in another scene that is occurring at the same moment.

# Acknowledgements

Thanks go to Damian Isla for his guidance, support, and humor.

# Bibliography

Alias|Wavefront 8.5 Online Documentation.