Final Production Report

Team 5 – FM 5.0

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Roles

Aries Li:
Story, 3D Modelling, Sound

Yuki Li:
Story, Storyboard, Visual Design, Texturing

Janice Ng:
Director, Producer, Story, Screenplay

Grace Tong:
Story, Storyboard, Visual Design, 2D parts

Zachary Wang:
Story, Rigger, Animator

Story

With an interest in combining 2D and 3D animation methods, the team's story revolves around the life changes of a character named Otis who was a round robot that encounters mischief adventures in the 2D and 3D world. On the other hand, multiple iterations were executed due to the story had too many messages to convey as well as too much production was required within the time constraint.

Originally the story started as Otis loosing his job at the oil production factory (which is known as a beer factory in our case) in the 2D world and that he decided to drink is sorrow away at a nearby bar. However, after a couple of drinks he got rowdy and that the bartender kicked him out. But then, Otis got kicked too hard where he managed to fly out of the 2D world and into the 3D world. After regaining consciousness, he was first confused about the new world, but adapted quickly and manages to find a new job as a wine connoisseur.

After extensive hours of rethinking, the team has concluded in a story of Otis getting stuck in the 2D world after fighting in a war that happened 15 years ago between the creatures from the 2D world and the 3D world. Eventually on one day, while he was looking for his compatriots, he falls into a hole. Then he wakes up and finds himself going back to his original world but because so many years have passed, everything looked different and that he becomes terrified but a surprise awaits him.

Research

In order to achieve a short animation based on the story concept and the team's minimal skill sets in Maya, we have researched various techniques and applying them to meet our goal.

The majority of researching was focused on Set Key Driven Animation based on each team member's homework assignment since it was found that this method of animation was a lot more efficient and powerful in comparison to Keyframe Animation since we have numerous movements from the characters' perspective and cameras' perspective. In the list below, it portrays a hand full of findings committed. Also, Lynda.com provided an excellent source for beginners to familiarize with the animation software Maya. Some examples of the specific resources we used for set key driven animation are listed below.

- Set Key Driven for fingers = https://www.youtube.com/watch?v=6X2DvG1Fl2E
- Set Key Driven for wheels = https://www.youtube.com/watch?v=jQT5qCP5mv8
- Set Key Driven for bouncing ball = https://www.youtube.com/watch?v=jQT5qCP5mv8
- Set Key Driven for eyes = https://www.youtube.com/watch?v=lpOG4Qz8LEo
- Set Key Driven for translation = https://www.youtube.com/watch?v=uwzlkveWexw
- Set Key Driven for visibility = http://mayaspiral.blogspot.ca/2012/05/utilities-switching-objects-visibility.html
- Set Key Driven for mouth = https://www.youtube.com/watch?feature=player_embedded&v=nRFhtmNrROI
- Set Key Driven for door = http://www.lynda.com/

Furthermore, the team has also searched up Maya texturing methods of Non-Photorealistic Renderings such that our story requires the use of toon shader, as well as imitating a portion of realistic look.

For lighting, we tried to get a deeper understanding of enhancing a cartoon animation where we found that it should map to our physical world. For instance, since the story happens over the course of a day and that by the time our character reaches the 3D world, it was getting late, hence the use of directional light to represent sunset and a point light to illuminate the streets and scene found on the street lamps.

In terms of rigging, it was necessary to understand skeleton based animation. The reason for such is that our character is a robot which only has bone-related structures in the arms, fingers antenna, but not its core body and wheel-foots. Therefore, skinning is only present to blend certain skeletal structures together so that it does not affect non-rigged components. Also, we noticed how to utilize inverse kinematic on the arms created a much more smooth movement flow for the protagonist and supporting characters. The use of inverse kinematic animation also greatly contributed towards the overall efficiency of the animating portion of the project.

Lastly, to improve on our basic components, we have watched several animation shorts to view an understanding of the 12 Principles of Animation which was then applied to our short. For instance, the animation consists of anticipation, staging, follow-through and overlapping actions, slow-in and slow-out, arc motion, secondary action, as well as exaggeration through the character's emotions and actions of gaining consciousness to running around due to his panic state and exploration segments. With our aesthetic approaches, the 12 principles help drive the realistic, yet comedic experience for the audience.

Challenges

Throughout this project we came across several major issues that we had to resolve. For one, we had difficulties with our naming conventions since each team member had their own naming style or simply did not name objects properly. This created problems down the road when our animator had to import all the different files from each group member and ended up having to rename everything. In terms of team coordination, we originally tried to have each group member work separately on their own respective parts, but we soon realized that this working style resulted in file and versioning issues (i.e. we had three different versions of the main character since some of them did not work as intended when we started texturing and rigging). To overcome this issue, we ended up meeting up as a group more often which greatly helped the efficiency of our file sharing. We also had numerous rendering issues where the Maya mental ray rendering was extremely time consuming and ended up crashing Maya. We solved this by playing around with the mental ray settings and even buying a new computer.

Reflection

We learned that in terms of naming convention, we will need to name things properly so that the project can be completed much more efficiently and quicker. We found that it is more efficient if you use rigid hierarchy animation. We also found that using the Set Key Driven was far more efficient than just keyframing each pose. Similarly, the use of inverse kinematic animation increased the efficiency and speed of animating character joint movements.

After completing this project, the team gained more insights of how an animation film production runs which allowed the team to understand the importance of teamwork and the requirement to become dedicated in their particular roles to prevent an outrage of production. Furthermore, each individual discovered various animation techniques and methods based on their respective tasks to improve the animation process. Additionally, over the course of generating an animation, we found that each component had to be created and given a life to for the display to occur which has raised our awareness. As a result of playing with the surface tools of Maya, as well as going deeper into ones that suits our project requirement, each team member also managed to familiarize themselves with the software and the domain of animation.