



HOP MOTION ANIMATION STUDIO STUDENT REPORT

**DIXA BAROOAH
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4th June 2016

TO WHOM IT MAY CONCERN

This is to certify that Dixa Barooah, pursuing Masters in Design in Animation from Industrial Design Centre(IDC), IIT Bombay has completed the internship at HopMotion Animation Private Limited from 2nd May, 2016 to 30th May, 2016.

We found her sincere, hardworking, technically sound and result oriented. She worked well as part of a team during her tenure.

We wish her every success in life.

Anish Patel
Director
HopMotion Animation Private Limited

Internship Certificate from Hop Motion Animation Studios
Andheri East, Mumbai

2nd May - 30th May 2016

HopMotion Animation Private Limited
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Abstract~

Hop Motion Studios is an animation Studio Located in Andheri East, Mumbai

The studio is a full-service digital 2D animation studio engaged in creating broadcast quality content for clients in India and around the world. With a 40 seater Toon Boom pipeline, HopMotion is equipped to handle even the most complex of projects. 5,000 sq feet of studio space in the heart of Mumbai houses writers, pre-production artist, storyboarders, animators and video editors.

The internship was for the duration of a month.
2nd May to 30th May 2016

During the entire Internship, I got a hands on experiences about the whole work process and the pipeline that exists in a good animation studio. It was an eye opener as to how the studios function and deliver series of animation on time while at the same time managing a large group of people into working exactly the way you want.

We got to learn softwares and business processes and on the whole, it was a very good experience.



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Introduction~

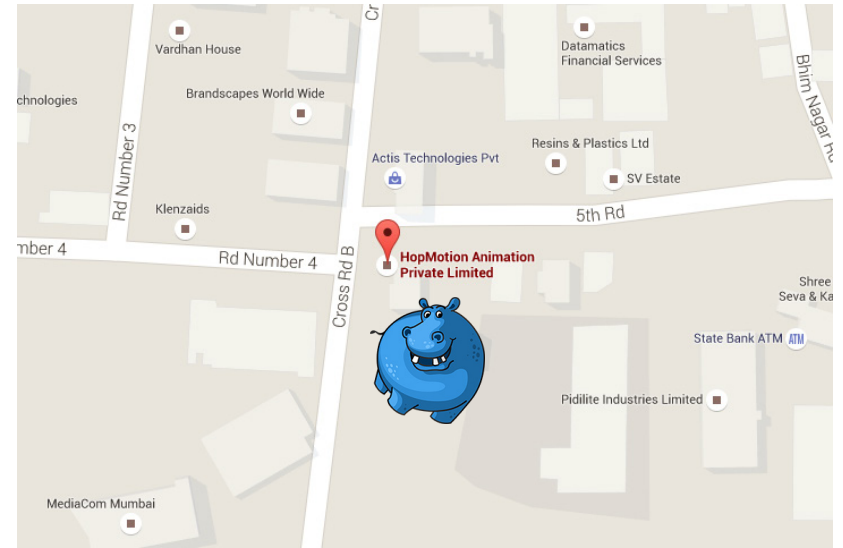
Hop Motion Studios is an efficient studio when it comes to handling projects both indian and international. In the entire duration of the one month. Over the four week period, our work was neatly divided into easy to understand sections and work was given depending on how much we had learnt.

For the time being Hop Motion was working on three Live Projects. The main one being CHOTI ANANDI for Colors TV. They were also working on WWE CAMP and their own WEB series called MODERN ACTIVITY.

We got a chance to learn the software tools used in the above animations and were also given enough time to experiment with the softwares learnt. We got to work on a few shots that has simple animation, prop making, shadows and finalizing animation shots. We were treated as an important part of the production team.

The COO made sure he conducted meetings and get together at regular intervals to monitor our progress and to assign new work and explain certain processes. He made sure we had no doubts along the way and made sure to inquire after us if there was anything else or anything extra we wanted to learn.

We were explained in detail the software features , project cycles, animation flow background art and layout designs and prop designs and library making. After we were finally done with the whole internship, we were skilfully equipped enough to be absorbed into any company's production team.



Business Pipeline ~

In the first week of Hop Motion Studios , we were taught the business process that we under go in the animation studio.

Apart from the incoming work flow the sustenance of a studio largely depends on how the leaders of the studio recognize talent and fully utilize them.

We were explained that the following points were followed to ensure maximum production from the available team

Know the team and plan accordingly ~

It is necessary to understand the abilities of the people working under the studio to get maximum output without wasting any time. Knowing your team well and understanding what it is capable of...or how much it can deliver in a span of time is crucial to the successful running of the studio. So the work is assigned depending on the workforce available and the skills they posses and date of completion is planned.

Client Interaction ~

Client Interaction remains an important part of the whole animation process. interaction depends on the nature of the project. For international works, the client interaction will be more regular and systematic, so as to ensure no miscommunications. For self-produced works, the client interaction is limited to finalising each stage of work.

Client interaction is limited to till the Animatics stage. Once the animation stage begins, the interaction is kept to the finished shots.

Freelancing in the Industry ~

Based on the complexity of the project, the workforce varies. But even then it may not be sufficient. When the project demands more amount of work in less amount of time with very detailed and complex animations, the studio might have to approach freelancers to undertake the extra job.

Proper Planning and Timing ~

Every scene in an animation is divided into shots which are divided among the animators involved in the project. The number of shots to be completed per day is planned before starting animation cycle. The time d for the shot completion depends on their complexity. Some complex shots may go as slow as 1 second per day while easy ones may go up to eight seconds of animation per day.

Proper work based on skill ~

Within the project team, the skill level of the individuals varies. The efficiency of a studio depends on how the employees are properly assigned the tasks so as to get the most out of them.

Perceive and Plan for Unforeseen circumstances ~

Any successful studio requires a backup plan and foresight to come up with a project that sees through the whole process without any problems. They always have plan for unforeseen circumstances like electrical failure or workforce depletion. Less men Power requires more Buffer Time. The efficiency of a studio depends on how the employees are properly assigned the tasks so as to get the most out of them. Extra buffer time is always kept in order to ensure that the work done is perfect and no lag will affect the final delivery.

Animation Pipeline ~

The animation process of every animation studio is more or less the same, with the following major steps included.

Idea ~

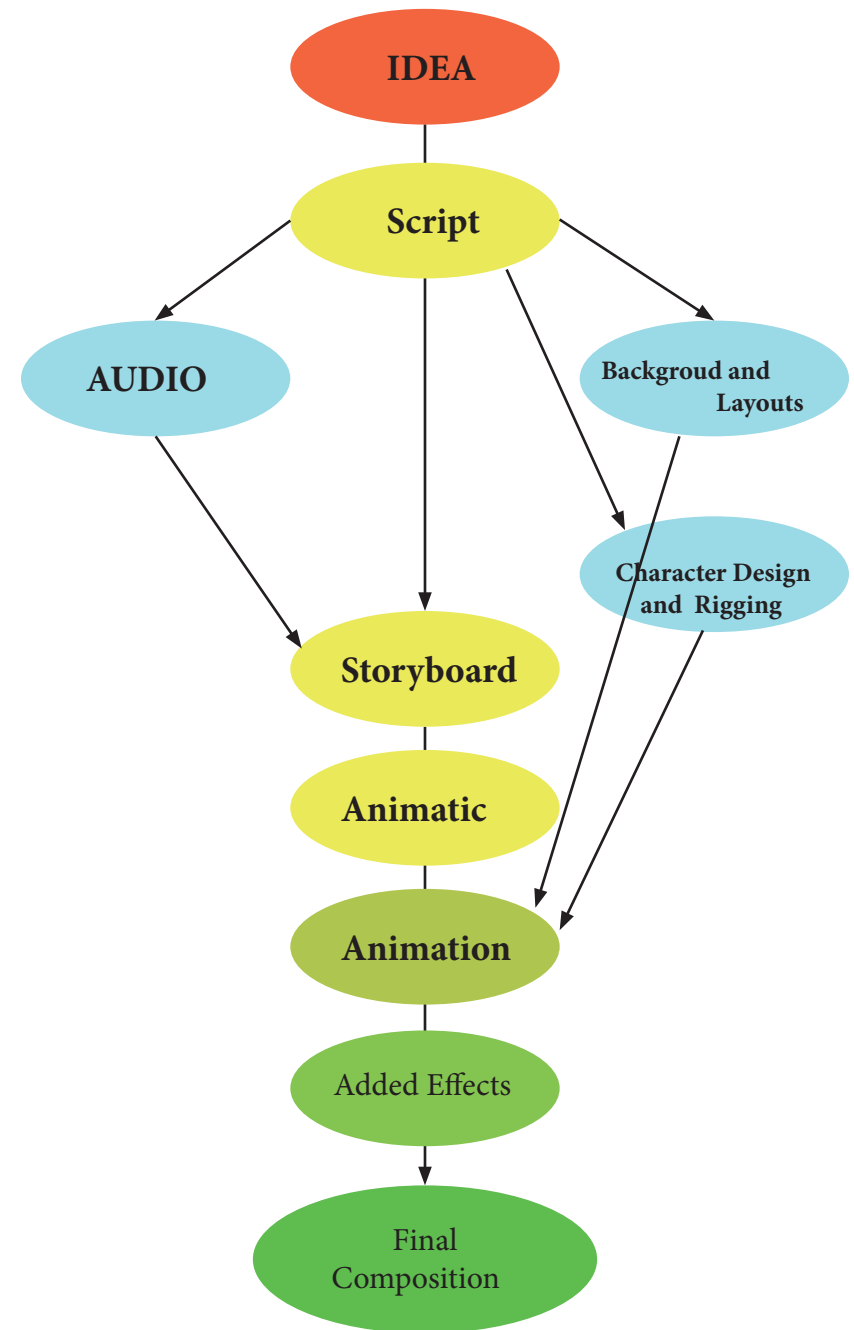
The animation project starts with an conceived idea. Studio owned and Web series have ideas that play an important role. Based on the eapproved idea, the story is created. For international works that are done in the studio, the ideation and scripting will be packaged and handed over to the team.

Script ~

In HopMotion Studios, project scripts are done by an in-house script writing team. After the story is created, the script stage works are done by the script writers, whic is viable for the background artists as well as the storyboard artists.

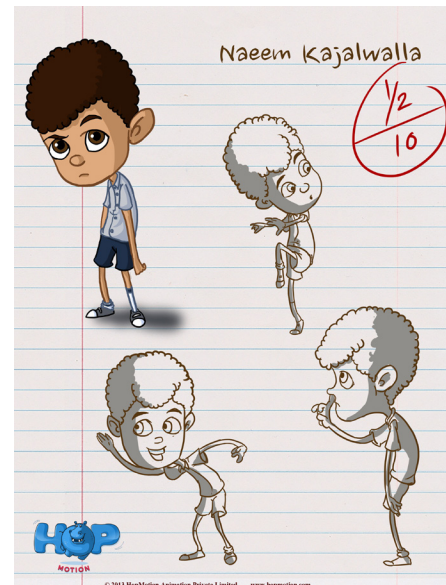
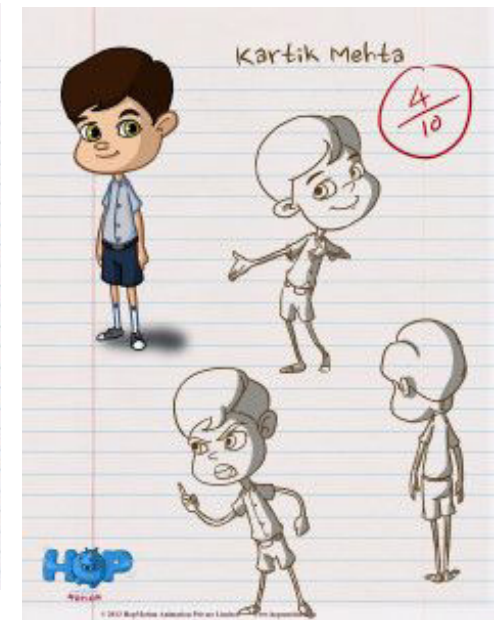
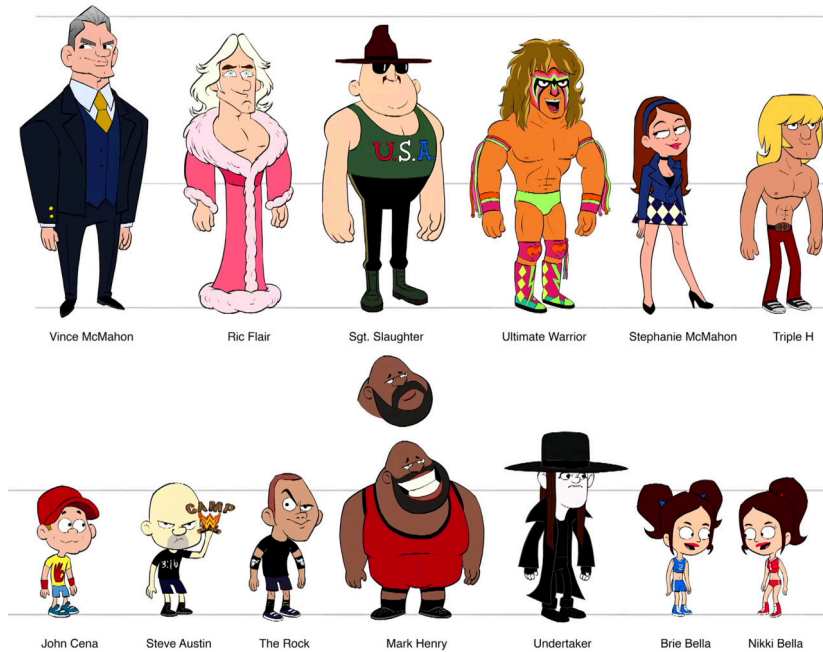
Audio ~

Audio is created before the animation in order to ensure the proper timing of the sequences and for maintaining the proper lip syncs. It is mostly out- sourced from a seperate sound studio. It is done almost immediately after the script is finalised and way before the animatic starts and animation or character design starts.



Character Design ~

The major step of designing a character sets the mood for the movie hence forth. The success of the short may directly depend on the appearance and personality of the character. Special care should be taken while designing the character such that it is loved by the audience. TV Series like Choti Anandi and Web Series like Modern Activity are studio owned works. The character design for these series are done within the studio.



Layouts and Backgrounds ~

In Hop Motion, the team used for creating the layouts and Backgrounds are the same but that may not be so everywhere. Different companies may keep different people for the separate tasks. For Backgrounds, color palette is pre decided by the client. Adobe Photoshop, and Toon Boom Storyboard Pro are used to create and compose backgrounds.

The Steps in creating Background Images ~

Napkin Sketch

The first few sketches done on paper. They don't have to be very detailed and colorful but rough lines and the basic gist of what may appear in the final form.

Rough Sketch

The objects in the image get clearer and have better form and lines. The composition of the background is done in this stage. It can consist of the entire location of the background without any particular perspective and angles.

Key Location

Based on the setting of the scene, the main location is decided.

Key Background

Based on the key location, a detailed drawing of that location is created.

Scene-Wise Backgrounds

After setting the scenes, the sections of the key background are split up and used for various scenes.



Practice background drawing in Toon Boom Harmony

Storyboard ~

The storyboarding stage has the shots and the scenes and the camera positions and angles used to animate the scene. Toon Boom Story Pro is used for Storyboarding purposes.

- * Close ups – 5 – 10%
- * Mid shots – 60 – 65%
- * Extreme Angle shots – 5%
- * Money Shots - One or Two

Animatic ~

After the storyboard, the animatic stage comes which finalises the timing and camera views of the animation. Any changes from the client is finished within the animatics stage.

Rigging

After the Character Design, they are rigged and joints are connected so as to ensure a smooth motion while animating. Toon Boom Harmony can rig to produce puppet like characters in the software.

Animation~

The main production process. Basically uses puppets to make the animation happen.

Effects ~

Special Effects like rain, water effects, fire etc. are added towards the end of the animation so that any changes to the animation will not affect the effects,

Final Composition ~

The video and the audio are combined together in compositing software and the animation is completed.

Production Log ~

Hop Motion Studio maintains a production log to keep a track of the work processes and percentage of completion. This keeps the progress of the work under control.

Production Log consists of the details of the shot, duration of the shot, animator, the number of frames the animator has completed and so on. Hop Motion's production log looks like this.

Hop Motion runs on deadlines, so the production log does a great job in ensuring no part of work is left undone and the workforce doesn't waste time.

Serial numbr	Slot number	Duration	Animator's name	Number of Frames	Comments

A production Log from the studio

Toon Boom Harmony ~

Hop Motion majorly uses the Toon Boom Software Harmony. The easy interface and features of this tool makes it the perfect tool to create fast and good quality animations.

Drawing

For the first week, we were made to understanding the basic functions of the software and its drawing tools. We learnt to use basic tools like the Pencil, Brush and freehand drawing tools.

The panel on the left contains the drawing tools, and the bottom tab has the layer details.

Once the drawing tools were familiarised, the next assignment undertaken was to understand the basic animation principles, like anticipation, timing, squash and stretch etc. using the software.

Few First assignments that we were asked to complete were~

BOUNCING BALL

PENDULUM

PENDULUM WITH TAIL

CRAWLING CAPSULES

ROTATING CAPSULES

WALKING

DRINKING WATER

LIFTING WEIGHT

Drawing

Image: Basic drawing of a sphere

In the image:

1 denotes the canvas on which the drawing is made

2 denotes the timeline and layering of the composition

3 denotes the colour palette used in the drawing. This can be changed at will and more palettes can be added. The advantage of Toon Boom Harmony over other animation softwares is that once the palette colour is changed, it affects the entire length of the animation and not just the single frame.

4 denotes the time ladder

5 denotes the basic tool bar with the drawing and rigging tools.

Now that the drawing of the ball is completed, in order to give motion to the ball, Pegs are created, which are basically analogous to the pegs in traditional animation that is used to move the canvas in whole.

The Network tab of Toon Boom Harmony denotes all the connections to the drawing.

Once a Peg is added, it is shown in green, and attached to the drawing layer.

Rigging ~

Modern Activity is a major projects undertaken by HopMotion Studios at present.

Choti Anandi is an animated series for Colors TV and Modern Activity is a native web series, based on real life characters.

The assignments included rigging existing characters for Modern Activity series.

The protagonist of the series is a kid named Savio, and there are many episodes already with his character appearances. However, the rigging I had done is for a different version of Savio.

All the characters and props are rigged. The details of the rig depend on the fluidity and complexity required of the final animation. Certain international projects demand high quality rigs as their characters are highly detailed and complex. The rigging of such characters takes more time in the animation workflow.

The rigs should be complete so that the animators can proceed with their work hassle free.

The hierarchy of components created determines the movability of character joints.

Eg: The order of hierarchy of a typical character's hand is as shown below:

Fingers > Hand > Lower arm > Upper arm > Shoulder

Auto Patch and Cutter ~

During rigging, one drawing overlaps the other and affects its look. They end up looking like per cutouts which is not desirable.

For problems like these, AUTOPATCH is added in order to avoid that abnormality automatically.

The process is analogous to manually adding a patch layer over the image with the same colour.

In this case, another filter called CUTTER is added so that the layer which is above cuts the patch and applies it to the layer below.

Note: The thing to be noted while adding AutoPatch is that the line drawing and colour layers have to be separated before doing it, which means, the outline of the leg should be made in the LINE ART layer and the colouring should be done in the COLOUR ART layer.

Layering ~

Within Toon Boom, the individual body parts are created Drawing layers and each layer is attached to a PEG layer which takes care of the motion of the respective layer.

Upon collapsing that layer, we get the body peg, under which the body Drawing layer exists and so on.

Shadows ~

Shadows are added to each drawing layer towards the end of the rigging cycle.

Cutter is used for adding shadows. It can also be added by manually drawing the shadows on the OVERLAY layer of the character.

In the image, Cutter is used to add shadows.

A drawing layer is made above the Head layer with a basic shadow layer, and the shape is cut depending on the boundaries of the head by using the Cutter filter.

While using Overlay layer, the shadow is directly drawn onto the layer so that it is automatically attached to the layer without the addition of any Peg or cutter.

Animation

The animation in Toon Boom Harmony is done using Pegs, which part of the various drawing layers. Its not done directly using the cutouts or drawings. The Animate button is to give auto key frames depending on the movement of the peg.

Shots ~

Shots were the final tasks that I did as part of the internship.

The shots that I worked on were for Modern Activity web series.

The task included addition of Shadows, cleaning up the shots, and ensuring that the animation was proper and fluid.

In this stage, several shots require multiple corrections and rectifications to ensure completely perfect animation. I also worked on animating several parts of the shots.

The final numbered shots are uploaded onto the server, where it is combined with the rest of the shots of the scene and is merged to create the final scene.

Props ~

Towards the final week of the project, I was given the opportunity to work on certain props for an international project. Props are anything other than characters that are present in an animation.

For the said project, props included various objects varying from clothes to cars.

The props are created in the following manner:

- The storyboard image of the Prop is added to a layer as reference.
- A new drawing layer is added above it.
- The Prop is traced over with the exact line widths on the Line art layer.
- The colouring is given in the Colour Art layer.
- The parts of the prop are divided in such a way that the parts which is closer to the viewer is done in the Overlay layer and the parts behind is done in the Underlay layer.
- If the Prop has multiple movable parts, each of those parts are drawn onto different drawing layers and combined under a single peg or multiple pegs as necessary.
- In the end, the prop is used in the animation by removing the reference layer.

Conclusion ~

The project enabled me to get hands on experience on the software Toon Boom Harmony, experiment and learn the various methods of character rigging and animation using the tool.

The internship tenure equipped me with the understanding of the animation studio's business processes, work divisions, time allocations for the projects and client interaction.

The various stages of the character development, background creation, storyboard setting and animation were touched upon during the course of four weeks.

I thank Hop Motion Studios and IDC for making this internship fruitful.

Acknowledgements~

I would like to thank Hop Motion Studios for letting be come and be a part of them for the one month Period, taking time to painstakingly explain things to me whenever I had a doubt and making the whole Internship a very valuable learning experience for me.

I I would like to also thank Mr. Neel Lukkani, the Founding Member and COO of HopMotion Studios, for his guidance and valuable help provided during the internship.

I would Also like to thank All my Professors and IDC IITB for the opportunity to go work ther for the month. I would not have had a good internship without their guidance and encouragement.

I would also like to thank my new friends from the Hop Motion studio who helped me through the internship while answering all my doubts with patience.

~Thank You~

