

Face Modelling

My model is a realistic face with manga style facial features. First I looked at different styles from cartoony to realistic manga, and try to find out the common facial features with all manga characters. After this, I looked for a real human face as my reference that helped me with anatomy when I did modeling in 3D. Before I started modeling the face, I did some research on human facial muscles which would help me to understand how the face is structured, and how the face form expressions. When I modeled the face, I drew the topology based on the muscle groups. After I finish the model, I used translate points tool to give the face different facial expression.

Aim:

- 1.Learn the basic organic modeling techniques in XSI.**
- 2.study facial muscle anatomy and how it affects topology of the 3d model.**
- 3.study how manga artists exaggerate the proportions of facial features to create stylish characters.**
- 4.Design a realistic character in manga style.**

Step 1

Research on a variety of manga styles



Figure 01 Poster for Castlevania, a series of video games, created by Kojima Ayami , 1998



Figure 02 (on the left) Sailor-moon, created by naoko Takeuchi, published by Kodansha, 1991-1997



Figure 03 (on the right) Kaguyahime, graphic novel, created by Reiko Shimizu, published by Hakusensha, 1994-2005



After I saw manga books such as Sailor Moon, Vagabond, Kaguyahime and character designs for game Castlevania. I concluded that most manga characters have childlike faces, cuteness is a part of Japanese culture and national identity.

Figure 04 Vagabond, an ongoing manga by Takehiko Inoue, published by Kodansha, 1998—ongoing

These Facial Features are:

Big eyes

Big eyes is the most symbolic character of manga style. The eyes are not just simply big, they windows of soul. Manga artists emphasize the eyes as much as they can. Manga eyes usually have double eye lids, long eye lashes, and sparkling pupils.



Nose

Nose is kept small and pointed. The bridge of the nose is straight and smooth, from side view, it almost look like letter "L"

Mouth

Mouth is small as well, thin lips.

Face shape

Most manga characters have egg shape faces. Cheeks are rounded with small chin.

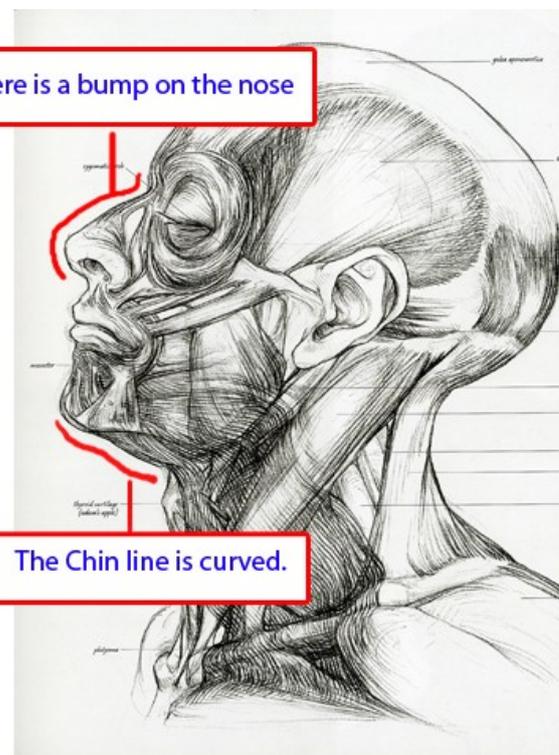
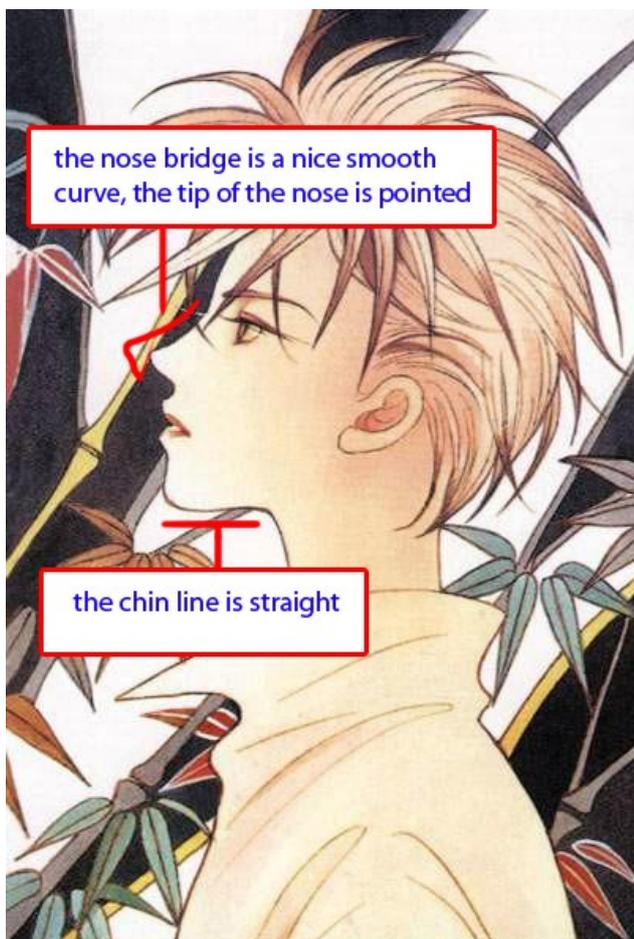


Figure 05

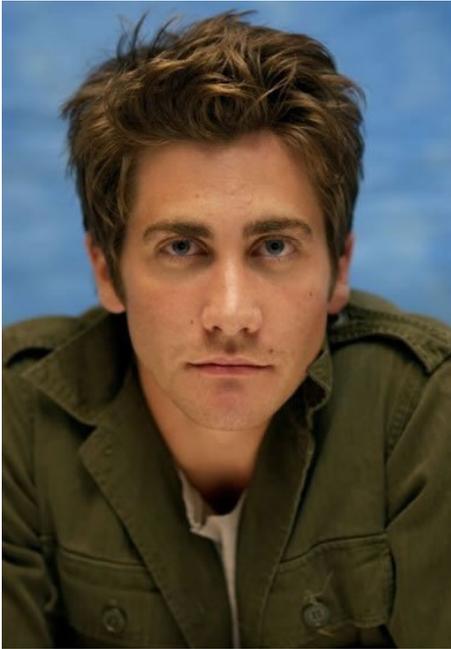
On the left: Kaguyahime

On the right: anatomy for the Artist, by Sarah Simblet

Step 2 Apply

I decided to use jake gyllenhaal as my reference for modeling the head.

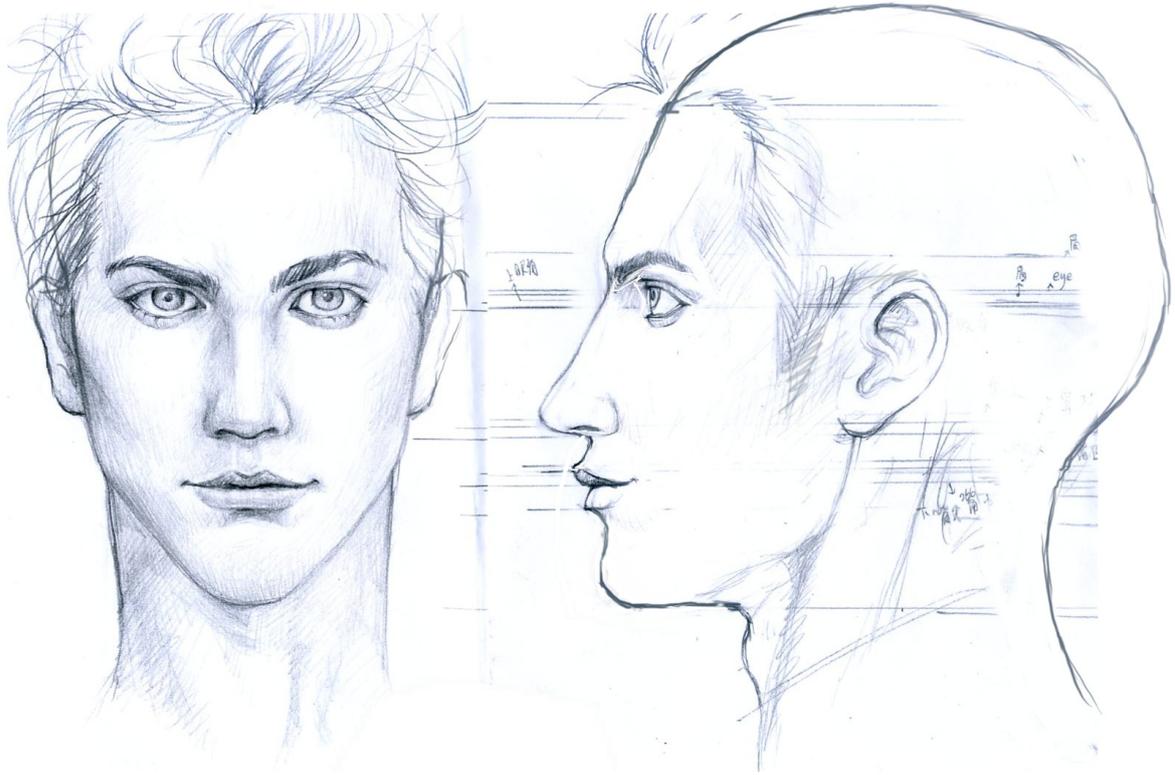
I exaggerate his face proportions.



I made his chin smaller, and narrower , reduced the width of his mouth and nose.

I drew the front view and profile, then I imported to XSI for modelling.

Figure 06 (on the left) Jake gyllenhaal
Figure 07 (below) front and side view of my character



Step 4

Face muscles research

Because the face model is for animation purpose, Before I started modeling in 3D, I had to study face anatomy in order to create correct edgeloops which enables the face to deform well.

According to the figure of face muscles, there are 3 main muscle loops, 2 are around the eyes, one is around the mouth. I drew lines over the muscles to help me working out the basic topology.

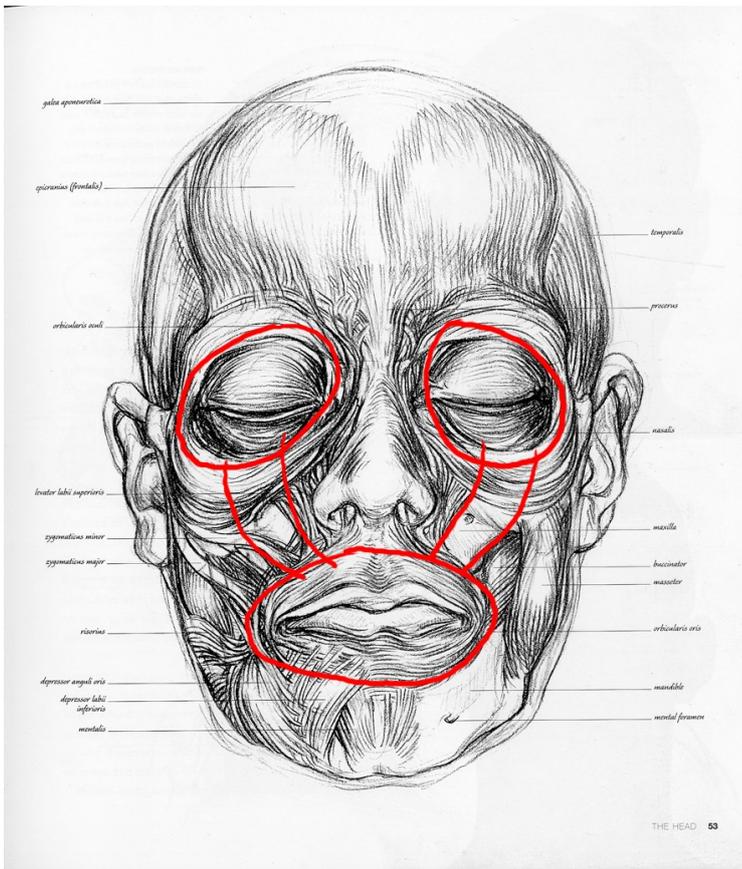
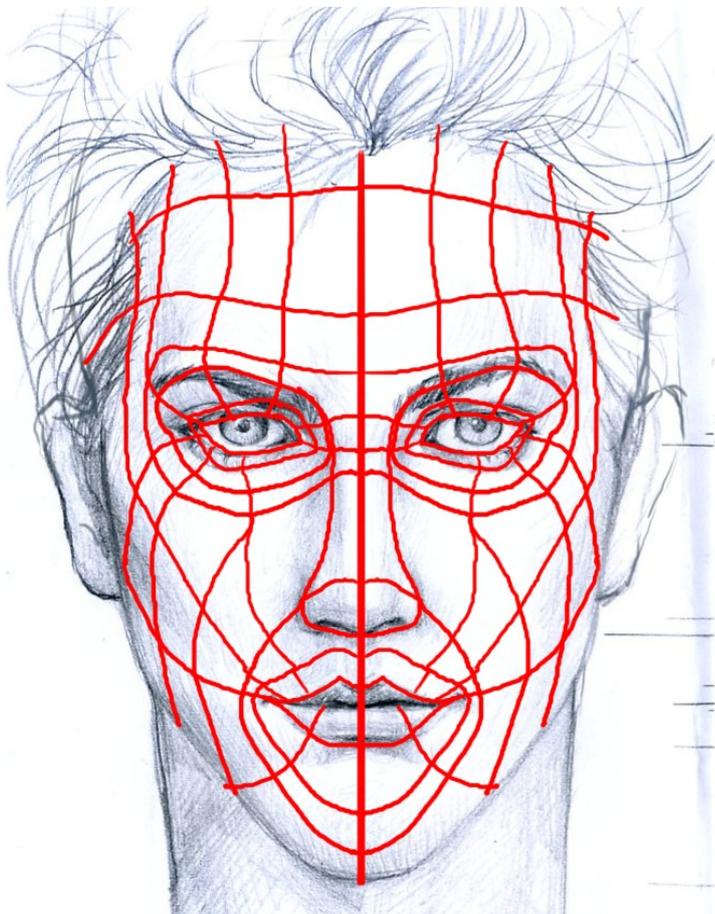


Figure 07 The Head , Sarah Simblet, Anatomy For The Artist, published by Dorling Kindersley, Great Britain, 2001.

“Occipitalis (posterior) and frontalis (anterior), connected by an aponeurosis named galea aponeurotica. The frontalis portion raises the eyebrows and draws the scalp forwards; occipitalis draws the scalp backwards.

The broad elliptical fibres of orbicularis oculi surround the eye socket (or orbit) and create the sphincter muscle of the eyelid. This act involuntarily to blink or close the eye in sleep. When consciously contracted, orbicularis oculi draws skin inward upon the eye in tiny creases, as when narrowing the eyes in bright light. Beneath orbicularis oculi, a muscle lies deep along the medial portion of the eyebrow. This is the corrugators, which draws the eyebrows together and downwards, forming vertical creases at the centre of the forehead, as in a frown. Nasalis, flexed at different points, allows us to close or flare the nostrils slightly. Levator labii superioris also assists in flaring the nostrils while raising and everting the upper lip. ”

(Sarah Simblet, Anatomy For The Artist, published by Dorling Kindersley, Great Britain, 2001.)

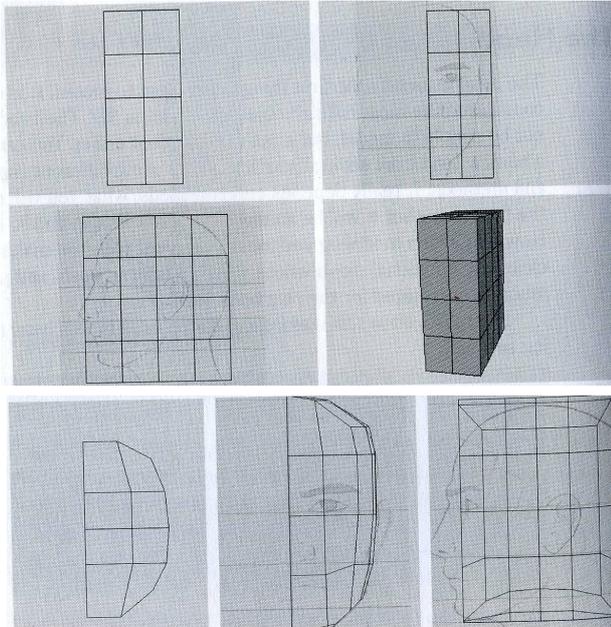


Step 5

3D modeling methods

I tried Box Modeling- start with a box, Block out the basic structure first, then adding edges to define the details.

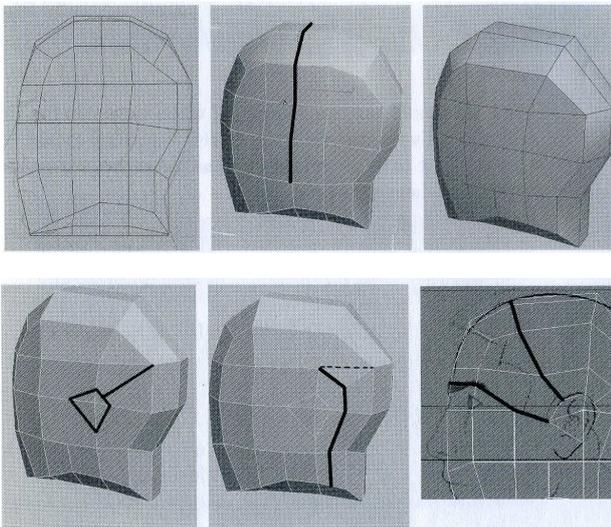
I found this method is confusing for me, I did not know where to add in the edgeloops.



"it all starts with rather broad design choices before molding on the pieces that best describe the silhouette--the kind of shape you'd see if you squinted your eyes. "

"another big advantage of this kind of modeling is the fact that you are always dealing with a complete object-a full shape. You can always get feedback for the overall look of it."

Timur Baysal 2007, character Modeling 2, p131 , second edition, Australia



I moved to a different method, I can draw the loops according to the muscle groups, it is more visual and straight forward for me.

First, I drew circles around the mouth, then loft the circles, after creating the mouth, I create the eyes in the same way. I connected the eye and the mouth. Finally I have a completed head.

Figure 08 Male Head Shape modelling tutorial, Polygonal Modeling Basic and advanced techniques, by Mario Russo, 2006, wordware Publishing, Inc.

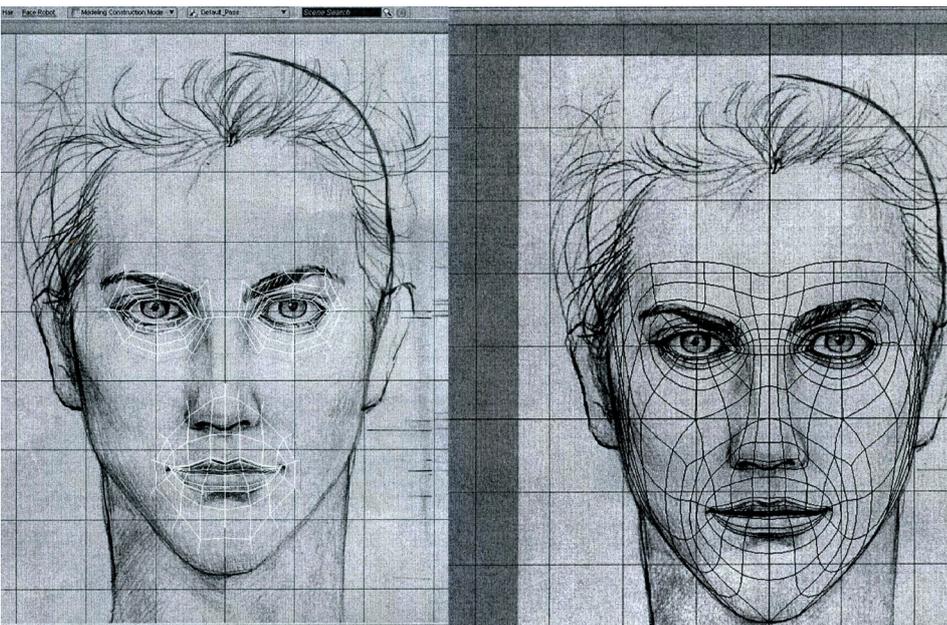
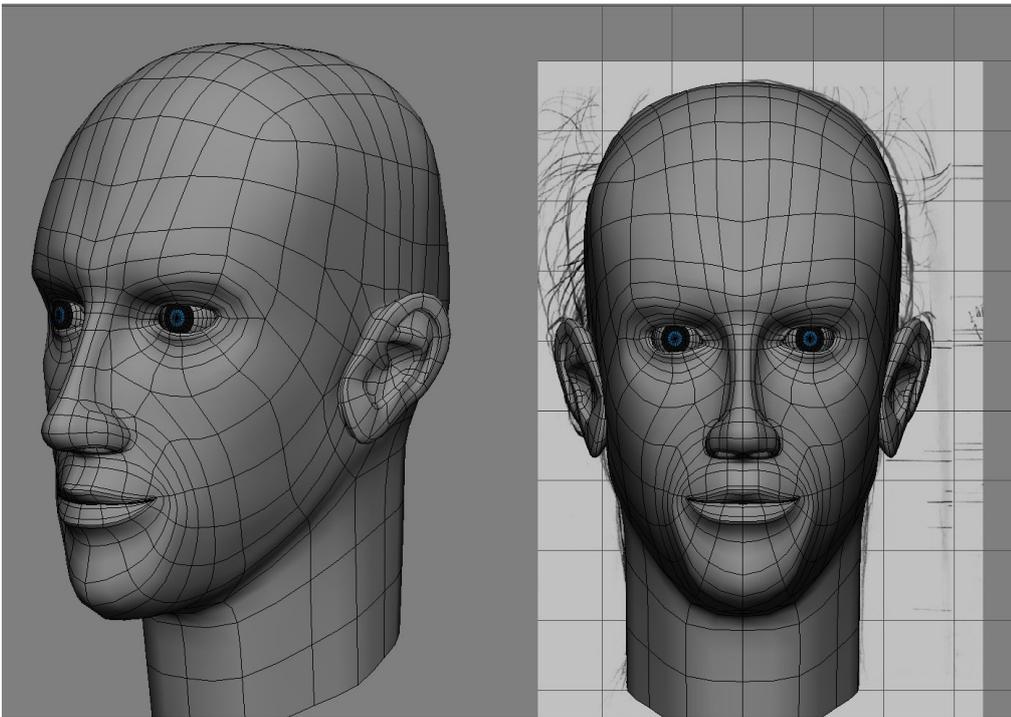


Figure 09
My progress of modelling the face

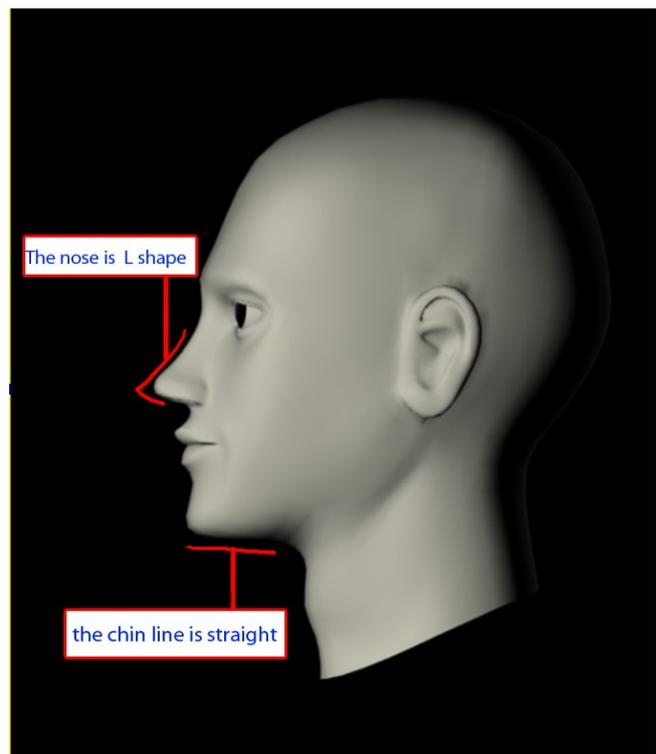
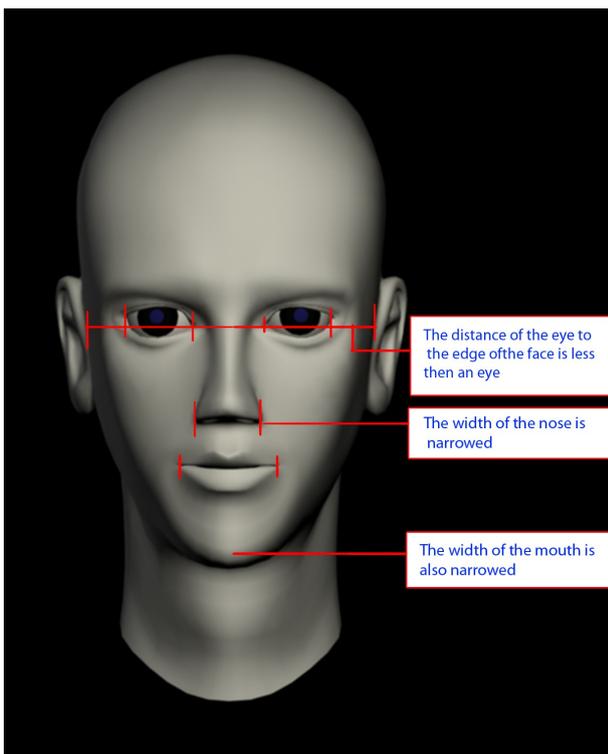


After I modeled the head, I cleaned up the topology, by reducing unnecessary edges and deleting 5 point stars. I also fixed the ears which looked unnatural.

Figure 10 my first head model

Step 6 Exaggeration

I was too happy with the look of the head, because the face did not look like a manga character. I used translate points tool with proportion modelling mode turned on, made some adjustments on the structure of the skull and proportions of the facial features.





Step 7

I gave the face some expressions by using translate points tool with proportion modelling mode turned on.

Conclusion :

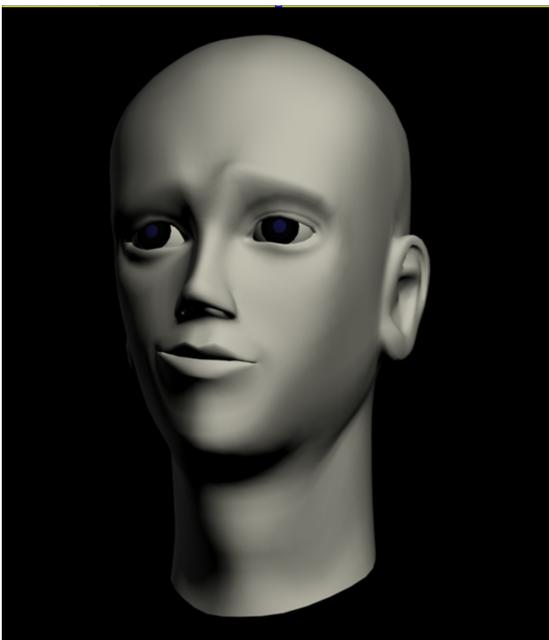
Understanding the face anatomy and muscle movements before modelling the head is vital, the edgeloops must follow the muscle groups to achieve natural facial expressions.

For modelling the body, I will use the same method as modelling the head, I will study body anatomy first, understand how muscles deform, then model it in 3D.



I have found some really useful modelling tools such as proportional modelling tool, M tool and Split Edge tool.

I found it very interesting to design a realistic manga looking character, I have learnt to what extent I could exaggerate the proportions, which would make the character stylish but still realistic, it will help me to design other characters in a more creative way in future projects.



**By
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References

Sarah Simblet, Anatomy For The Artist, published by Dorling Kindersley, Great Britain, 2001, P56.

I studied face anatomy from this book.

Timur Baysal 2007, character Modeling 2, p131 , second edition, Australia

Head Modelling tutorial by hatice Bayramoglu

Available from: <http://www.3dtotal.com/>

I followed this tutorial to model the head

Male Head Shape modelling tutorial,

Polygonal Modeling Basic and advanced techniques, by Mario Russo, 2006, wordware Publishing, Inc.

Box modelling tutorial I followed

Castlevania, video games, produced by Konami, character design by Kojima Ayami , 1998

Sailormoon, created by naoko Takeuchi, published by Kodansha, 1991-1997

Kaguyahime,graphic novel, created by Reiko shimizu, published by Hakusen-sha, 1994-2005

Vagabond, manga by Takehiko Inoue, published by kodansha, 1998—ongoing