and “education” are the main ingredients in determining the character that is designed. The use of colours and accessories used also cannot be separated from deep research. In addition, the vision of how the mascot is implemented in all government-owned city branding programs must also be considered so that the design results do not stop at the media promotion.

The city government serves as the main motor in running a city branding. A clear vision and mission is needed so that the values to be achieved by Malang City can be implemented in the design of the mascot that is considered capable of representing the city. In addition, openness to creativity and technical matters in designing are also needed so that the design results do not stop at the announcement of the winner of the competition project organized by the government. In the end, it was concluded from this study, that the mascot design as part of city branding is the result of the collaboration of various parties in the city. In addition, it requires openness and commitment from various parties so that the implementation of city branding can be activated in various parts of the city because city branding is not only owned by the government, but also belongs to the entire city.

References


The 3D models in AR form (Cawood, 2007). For mobile devices, about 300 to 1500 polygons can be used to give a good quality result for the 3D model (Unity3d, n.d.). AR require tracker object as known as AR marker, which composed by some unique patterns or images and will be used as tracking object (Cawood, 2007). Aside from using markers, now we can use any surface in the physical environment as tracking object to augment the AR object, this method is known as markerless AR.

In this project, puzzle was used as tracking object to visualize the 3D models in AR form, and as educative media to introduce Ja-janan Pasar for children. As children aged 4-6 like to play and learn new things, puzzle can be used to train their patience, accuracy, visual, mathematics, and problems solving skills (Patmawati, 2016).

Method of “Jajanan Pasar”

Overview

There are 5 sets of puzzle and cards that physically available as AR markers. Each puzzle set and card has different color, illustration of Jajanan Pasar and ingredients. Total 3D assets for this project are 24, that consist of 5 Jajanan Pasar models (Klepon, Nagasari, Kue Bugis, Kue Mangkok, Kue Apek) and 19 ingredients models, that consist of Santan (coconut milk), Gula (sugar), Garam(salt), Pewarna Makanan (food coloring), Ragi (yeast), Tape Singkong (ferment-ed cassava), Kelapa (coconut), Tepung Beras (rice flour), Ketan Hitam (black glutinous rice), Telur (eggs), Tepung Ketan (sweet rice flour), Air (water), Gula Merah (palm sugar), Daun Pisang (banana leaf), Pisang (bananas), Tepung Terigu (wheat flour), Daun Pandan (screwpine) and Daun Suji (Suji leaves).

Visual Concept

Illustrations for the Jajanan Pasar and its ingredients were inspired by the real form of them that can be found in daily life, and illustrated in simple imaginative painting style. The illustrations of Jajanan Pasar as the main focus for this project, are more imaginative than the ingredients, they have mouth and eyes to give more life and appeal for them so the children can remember and learn them. As for the ingredients, the visuals are more simple and realistic.

Visualization for Augmented Reality

The 3D models are based from the illustrations in each puzzle piece and
card. They were made in 3D Studio Max and restricted to around 1500 polys (low poly). As the polycount is restricted, alpha channel texture was used to form leaf models, and for making a simple particle effect. Some modifier like mesh smooth and smooth were used to make the 3D model’s sides smoother and appealing. After all models were finished, they were exported into Unity software to combine them with markers package, and convert them into AR mobile application.

There are simple animations for each 3D models, that represent characteristic of each ingredients and Jajanan Pasar. Animation for Jajanan Pasar is more imaginative, and indicate their characteristic as chewy snacks. On contrary, animation for the ingredients are more realistic, such as animation about how to use them in daily life, or their characteristic.

Markers are used to visualize 3D models in AR form. There are 3 kinds of markers, the first one is marker for each puzzle piece that will visualize ingredient models in AR form. When all puzzle pieces in each set get together, it will be the second marker that visualize market snack model in AR form. The last is in the flashcards that will visualize all ingredients for each market snack in real comparative size. This interactivity concept can be seen in the image below.

Vuforia is a friendly AR software platform for beginner AR developer. Because its procedure is easy to understand for people who didn’t have any programming experiences. Developer just have to prepare the images that will be used as AR markers, upload them to Vuforia developer site, and the images will be automatically converted into AR markers, after that, developer can download them as Unity package. In Vuforia, developer can check the marker’s sensitivity, because a good marker will produce a stable AR.

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Analysis

Optimizing the Models and Markers

Best example for optimizing models and markers in this project can be found in Klepon models. There is some trial and error in these models. For example, the first modeling attempt for Klepon models are exceed the 1500 polys rule, about 1954 polys or 3810 tris. Klepon models are made and applicated to AR form for mobile application. The result is the AR become unstable, shaking, and the quality is reduced, so, the polys were reduced into 780 polys or 1560 tris. There were 80 looping frames of simple animation that represent the characteristic of Klepon. To optimize the models, there are 2 parts of spheres, one for the body and other for grated coconut, that the texture was made from alpha channel texture. Alpha channel texture is more efficient to reduce the grated coconut model’s polycount than using some planes and formed them.

Figure 6. 3D Assets of Jajanan Pasar

Figure 7. Interactivity concept

Figure 8. Klepon Models (First and Second Images), Klepon’s Textures (Bottom Left), and Klepon models in AR Form (Bottom Right)
There are 6 pieces of puzzle for Augmented Klepon models, that consist of the ingredient for making Klepon.

At the first attempt, the puzzle set’s colors are red and purple, but there is some object in the puzzle pieces that aren’t readable as AR marker when they converted in Vuforia. The legibility indicator is shown as small yellow cross in the marker, and it can be checked when converted a tracker object into AR marker in Vuforia. Thus, to solve this legibility problem, the set’s colors are changed into yellow and blue.

Aside from Klepon models, there are Santan (coconut milk) models that consist of a bowl, a pack of Santan, and a simple animation of Santan’s liquid. For Santan’s pack, to optimized the polycount, high detailed texture was used. This can reduce the polys into 399 or 798 tris.

There was a problem in Santan’s marker, that its legibility was low because of the illustration. The first illustration is a bowl of Santan, that isn’t legible as an AR marker, that caused by all round sides in the illustration and its color contrast with the background color was about the same. To solve this, the illustration in the marker is changed into a Santan’s package, and have a high contrast with the background color. The legibility of this new marker is higher than the old one, that indicated with yellow cross as in the images below.

3D Visualization for Augmented Reality in 'Jajanan Pasar' Puzzles

Conclusion

3D visualization for animation films and Augmented Reality are different. As AR needs real-time rendering and in this project, is used for mobile, low poly modeling is used to make the assets. Because there is polycount that will affect the AR’s performance and quality in the
mobile application. If the polycount exceed 1500 polys as Unity recommended, the heavier smartphone works that will lead to an unstable display of the AR.

To optimize the polycount, in modeling phase, alpha channel textures can be used to form the models, and used made simple particle effects. But, the alpha channel texture should be modified with shell modifier to fill the plane’s back side, because there’s a difference to apply alpha texture in unity and 3Ds Max that can affect visual appeal of the models.

Color and contrast between marker’s background layout color and the illustration can affect the legibility of the marker as an AR marker can interfere the stability and sensitivity to call the AR. Aside from that, when the mobile application was running, mobile camera’s quality and its environment’s lighting can affect marker’s legibility to call the AR.

References

COLOUR IMPLEMENTATION WITH FAUVISM STYLE TO LIMITED ANIMATION CHARACTER “WE ARE DIFFERENT YET WE ARE SAME”

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Abstract: Fauvism is an art form in the beginning of modernism art era with focusing on color implementation that doesn’t have to represent the reality, showing the strong bond of the artist with the atmosphere he drew. Fauvism color implementation will be implemented to the short animation film with limited animation technique, “We Are Different, yet We Are The Same”. In the making, the writer uses qualitative research method. Data that gathered used as a base for the writer on character designing in limited animation “We Are Different, yet We Are The Same” with fauvism style.

Key words: Character, fauvism, limited animation

Fauvism
In 1905 located in Paris, art gallery Salon d’Automme exhibits paintings from artists with a breakthrough of using bright colors, considered as flat, and adding subjects and objects that seems deviate. The name Les Fauves which means “Wild Animal” was given by Louis Vauxcelles in a review of Salon d’Automme exhibition in 1905 for a French newspaper called Gil Blas. Fauvism artists have many styles in drawing, they don’t take their creation as a part of real life. Skin colors can be painted with blue of green, grass and sky can be red, everything depends on what is meant to be delivered without having to follow the color proportion from the real object, (Hodge, 2013).

Color Wheel
Edwards (2004) wrote that Albert Munsell is made the color wheel system based on physic knowledge. The color of wheel consisted of 3 colors category are primary, secondary, and tertiary.

Figure 1. Color wheel.