WOC7010 AGILE SOFTWARE DEVELOPMENT ANIMOJI PROJECT – EMOTION AND ANIMOJI ANLAYSIS

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EMOTIONS

Emotions are psychological experiences triggered by neurophysiological changes and are linked to thoughts, sensations, reactions, and a level of positive or negative valence (Cabanac,2002). Ekman is a well-known psychologist, familiar for research in emotions and facial expressions, who classified 6 types of basic emotions - happiness, surprise, disgust, anger, sadness, and fear. In this study, we stick to Ekman's basic emotion set.

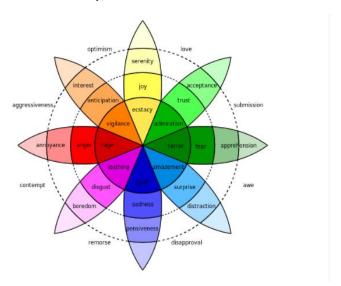


Figure 1. Robert Plutchik's wheel of emotions

SURPRISE EMOTION ANALYSIS

1. UNDERSTANDING SURPRISE

A simple definition of surprise from google search engine is, "an unexpected or astonishing event, fact, etc". Out of the basic emotions, surprise is the briefest and a neutral emotion with no valence. It is a short lived one, because the immediate state of mind when an unexpected event lasts only for very few seconds after which it could have a positive or negative valence.

Examples:

<u>Negative:</u> When you lost your purse, for a very few seconds you are surprised after which it leads to sadness.

<u>Positive:</u> When you refactored a huge complex code and the build is done without errors, you are surprised for a few seconds after which it leads to happy/joy.

In the below table there are few more descriptions of "surprise" emotions coined by emotion research (Ludden et al, 2016).

Table 1. Surprise descriptions

Index	Surprise emotion description	Approach	Researcher		
1	Arises when an unexpected or	Unique	Ekman and Friesen;		
	sudden event occurs.	manifestations	Izard and Plutchik,		

2	An emotional state high in	Two-dimensional	Russell
	activation and neutral in valence	approach with	
		arousal and	
		pleasantness	
3	Surprise has been associated with appraisals of unexpectedness, pleasantness, novelty, motive consistency, and complexity	Appraisal models	Smith and Ellsworth
4	Surprise is the <i>only emotion</i> that results from a <i>single appraisal</i> (unexpectedness)	• •	Roseman

2. SURPRISE EMOTION AND ITS EXPRESSIONS

(Harshitha, 2021) stated surprise can be expressed in wonder, amazement, astonishment, astound, and shock. To analyse more on these *expressions*, every *verb* definition of these words was searched in google.

Wonder - Curious/ feel doubt

Amazement – Surprise greatly/fill with astonishment

Astonish - Surprise greatly

Astound - Shock/greatly surprise

Shock – Feel surprised and upset

Wonder expression is representing curious/doubt which is neutral and can lead to positive/negative valence as like surprise. Most of the other expressions (amaze, astonish and astound) are the surprise emotion itself but with a greater extent. But for shock, it is surprise emotion combined with another expression upset (of sad/worried emotion). Since we stick to basic emotion set, shock is not included in this surprise Animoji design as it is another combination of sad emotion.

3. SURPRISE VS OTHER EMOTIONS

After understanding what surprise emotion is, the next analysis was to determine if it resembles closely to any other emotion set chosen which are fear/sadness/happy or joy. From the wheel of emotions and Paul Eckman's research, "Fear" is commonly confused with "Surprise" and can be distinguished with following facial expressions.

Table 2. Surprise and fear facial expression comparison

Surprise	Fear		
Eyes wide openUpper eye lids raisedLower eye lids neutral	Eyes wide openUpper eye lids raisedLower eye lids tensed		
Eyebrows raised Jaw dropped down	Eyebrows raised but pulled together Jaw dropped down		

	Lips stretched horizontal
	backwards
Surprise To focus us on new situations	Fear To protect us from danger

A basic learning on how to sketch a surprise emotion was done in internet resources like wikihow, patreon.com etc.,

ANIMOJI ANALYSIS FOR DESIGN

Now, the analysis is to choose Animoji for surprise emotion which has two options.

1. Choose from an existing app

2. Self-Design

Whatever the choice of option may be, human facial animojis were not chosen to avoid a representation of any specific diversity, complexion, and other sensitive factors

1. CHOOSE FROM AN EXISTING APP

Different apps were searched in play store with the keyword "Animoji maker free". Excluding human Animoji makers, EMOJI Face Recorder and VideoMoji: Make Animoji Avatar were chosen since many animals Animoji were available. Surprise animojis were recorded in both apps. But EMOJI Face Recorder app wasn't so good is reflecting the emotions. It was able to clearly record only the basic smile Animoji.

2. SELF-DESIGN

Self-design of Animoji is creating Animoji for the emotion in images and converting to GIFs without using any apps.

1. COLOR SELECTION

The article on effects of colors on psychology (Swarnakshi, 2021) was studied and listed below.

Table 3. Colour effects on emotions

Color	Positive reflection	Negative reflection				
Blue	intelligence, trust, duty, serenity	Coldness, indifference, lack of				
		emotion, aloofness				
Red	energy, courage, warmth, strength,	rage, wrath, stress, aggression				
Yellow	optimism, creativity, confidence, emotional	fear, suicide, irrationality,				
	stability, self-esteem	depression, anxiety				
Green	harmony, refreshment, balance, natural	envy, boredom, unimaginative,				
	awareness, peace	dreary				
Violet	spirituality, contentment, luxury, truth, quality	introversion, defeat, corruption				
Orange	comfort, food, passion, sensuality, fun	poverty, frustration, immaturity				

White	purity,	innocence,	sophistication,	security,	coldness,	hostile,	sup	pressi	on,
Black	neutrali	ity			menace,	depression	on,	lack	of
Grey					confidenc	е			

Out of these colors, white, black, or grey represent neutrality suiting the "Surprise" emotion which is neither positive nor negative. Since black is dark in which the expressions can be designed well easily, white/grey is chosen.

2. ANIMAL SELECTION

Animal selection focused on geographical location-Malaysia. The intent here is to identify the most loved pet animal among Malaysians so that the people can easily connect to the emoji. (Marcel, 2019) cross-sectional survey was conducted to understand the pet ownership in Malaysia. "The majority of pets identified were cats (72%), while the next popular pet was fish (14%)". Hence choice of cat Animoji would be a better option and suggested to the team. Based on expressions, team's perception on factors for implementation, following excel was uploaded in shared path to get the team's feedback to choose the final animal.

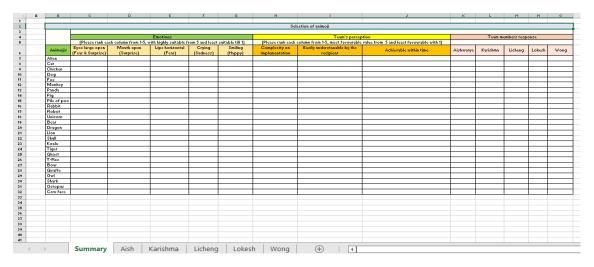


Figure 2. Selection of animal for Animoji

3. DESIGN TOOL SELECTION

Many design website/tools emoji-maker.com, Labeley.com, adobe illustrator, adobe photoshop, paint and paint 3D, were searched and tried. The websites are good to do basic emoji but not an animal Animoji. Out of the tools, paint 3D had a cat outline in 3D model. Hence, it was quite easier to design a cat Animoji in paint 3D. One Animoji was created in orange with simple round eyes and mouth as a trial. Other two Animojis (white and grey) were created using existing stickers from the tool and shared with the team.

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