



# Team Reflection

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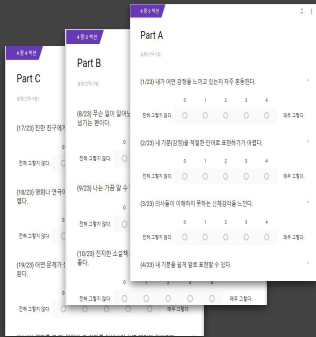
Advisor Prof. **Juho Kim**

**People who feel difficulty  
for expressing their emotion.**

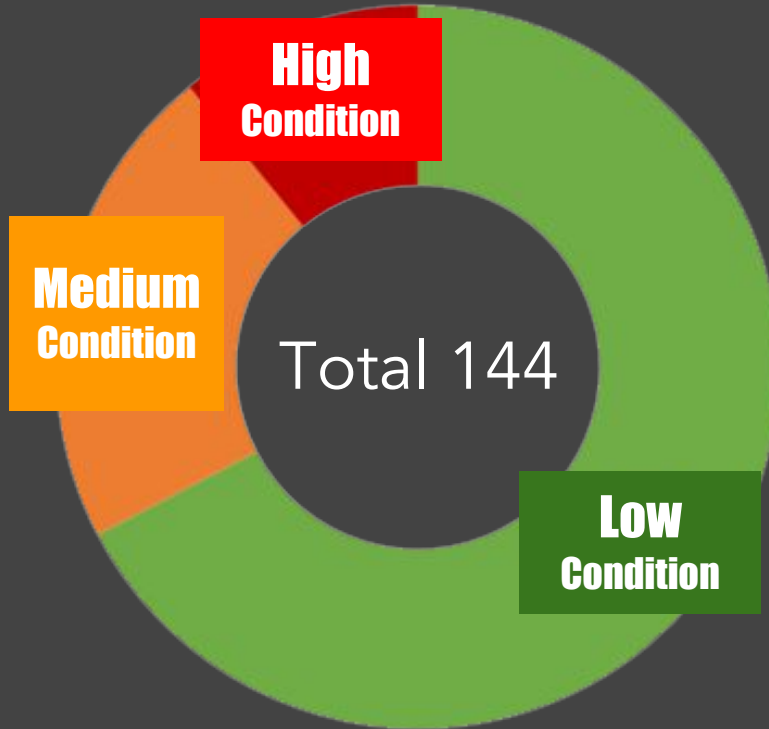




# TAS 20, Alexithymia test



TAS-20 for 144 people



Around us!

# **Our Goal**

**“Improve their emotional expression”**

# How to improve the emotional expression?

## Learning the Language of Emotions

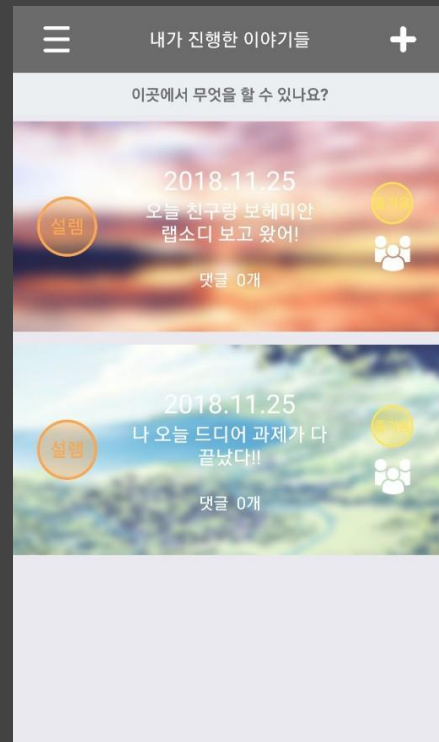
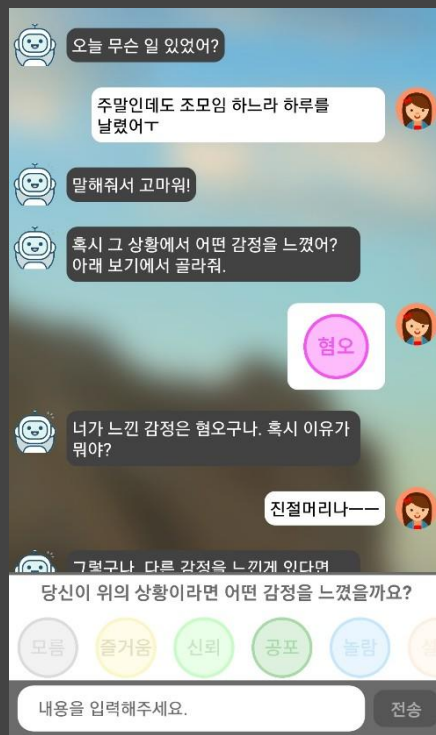
One way to expand your emotional awareness and vocabulary on your own is to question your emotions: If you think you're feeling angry, ask yourself what two other emotions you might be feeling (perhaps frustration and disappointment), then consider why you're feeling that way, David suggests. "Emotions are signposts for things we care about, so ask, 'What is this emotion trying to tell me?'" It also can help to write about your feelings in a journal and try to glean meanings from them, she adds, by using phrases such as "I have learned that..." or "The reason that..." or "I now realize..."

Ask yourself  
about your feelings



# How to improve the emotional expression?

Ask yourself  
about your feelings



# How to improve the emotional expression?

*“Group therapy is more effective with high alexithymia traits than talk therapy alone.*

*(...)*

*because they experienced different ways to engage in the treatment process and were able to learn to express themselves more clearly.”*

## Partial Hospitalization Treatment of the Alexithymic Patient: A Case Study

Anthony S. Joyce,<sup>1</sup> Annika Nordhagen,<sup>2</sup> John S. Ogrodniczuk,<sup>3</sup> Laura E. Stovel,<sup>1</sup> and Anthony Bjorge<sup>2</sup>

<sup>1</sup>University of Alberta

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<sup>3</sup>University of British Columbia

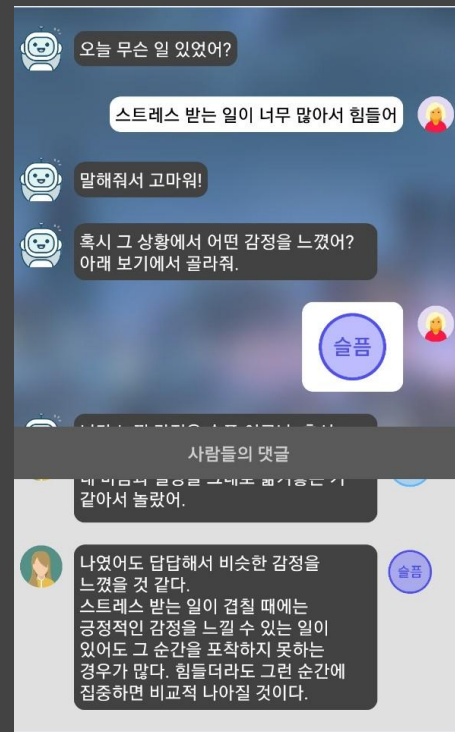
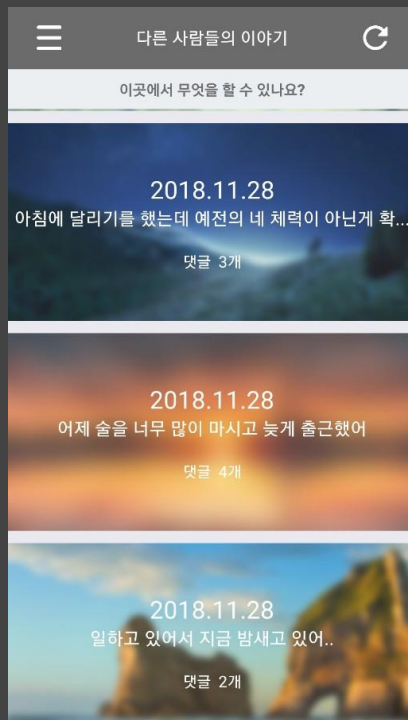
Patients with alexithymia are a challenge to engage in treatment and require a diverse range of interventions to realize benefit. A partial hospitalization treatment program, offering multiple forms of group therapy in an integrated system, may be particularly helpful for patients with alexithymia. We examine the course of treatment for one alexithymic patient who participated in an 18-week intensive group- and dynamically oriented treatment program in Edmonton. Group support and feedback emerged as important elements in the treatment approach. Other features of the approach overlap with treatment guidelines for alexithymia found in the literature. © 2015 Wiley Periodicals, Inc. *J. Clin. Psychol.*: In Session 71:167–177, 2015.

Keywords: alexithymia; partial hospitalization; group therapy; confrontation; reflective function



# How to improve the emotional expression?

Looking back at emotion  
through other's story and  
comment



**“How was your Day?”**

“Live Demo”

**bit.ly/oemotion**

“Download Link”

# **Implementation**

# Chat Structure & Scenario

Table 6.1

Counseling corpus example

## Counseling Dialog Corpus

Speaker	Utterance
System	Hello. How are you today?
User	I feel bad because I fought with my boyfriend.
System	You fought with your boyfriend. Why does it happen?
User	He didn't remember my birthday.
System	I see. You feel bad because he didn't remember your birthday.
User	That's right

Table 6.2

Example of counseling situations

## Problem & Reason

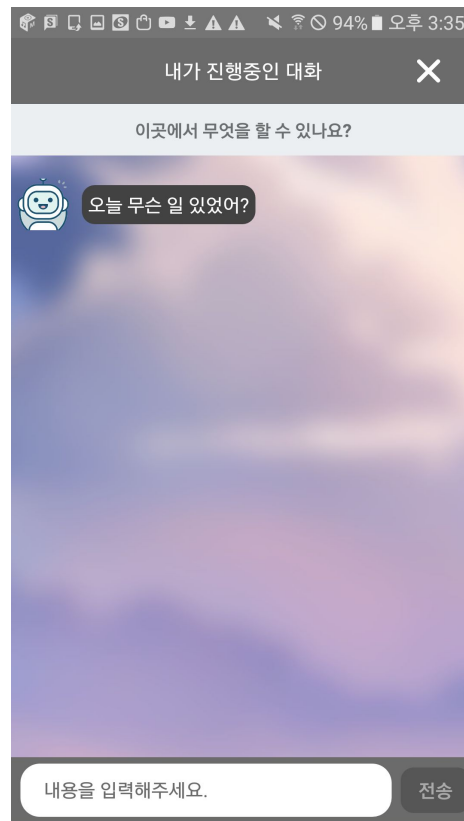
Emotion	Problem	Reason
Angry	I fought with John.	John yelled at me.
Sad	My dog died.	He fell from cliff.
Happy	My dad won the prize.	He got the best score.

1. Explain my situation
2. Choose the emotions they felt in the situation and tell about the reasons.
3. User can tell about the problem(effect) caused by that emotion.

# Chatbot-User Conversation Scenario

## 1. Explain my situation

Start from asking question: How was your day?



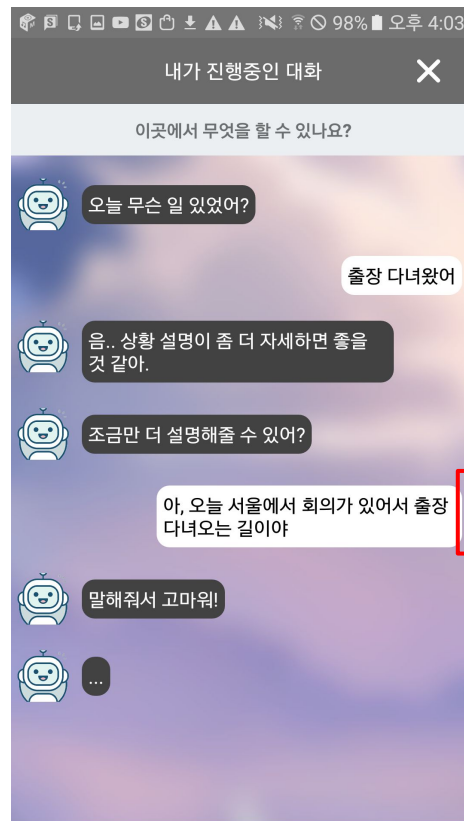
# Chatbot-User Conversation Scenario

## 1. Explain my situation

Start from asking question: How was your day?

**NLP:** If answer was insufficient, then asking again.

Thanks for telling me!



how was your day?

I went on a business trip

Could you please tell me about more details?

(More detailed answer)

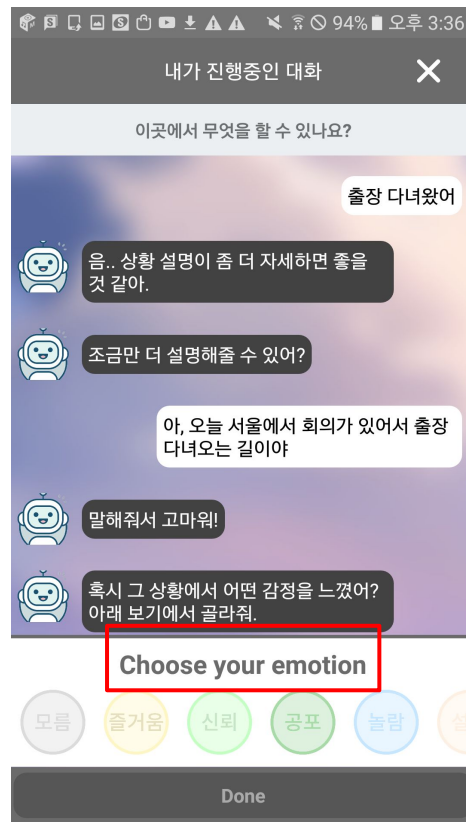
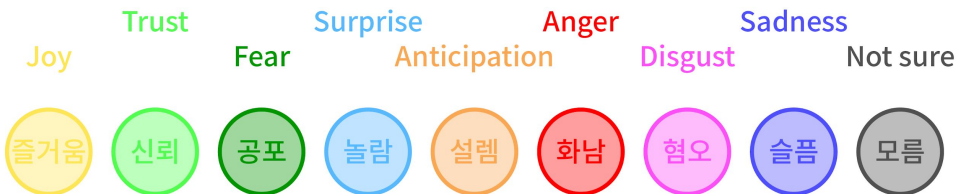
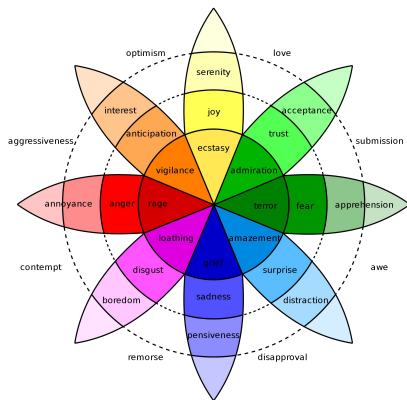


# Chatbot-User Conversation Scenario

1. Explain my situation

2. Choose the emotions

Based on Plutchik's theory



Could you please tell me about more details?

(More detailed answer)

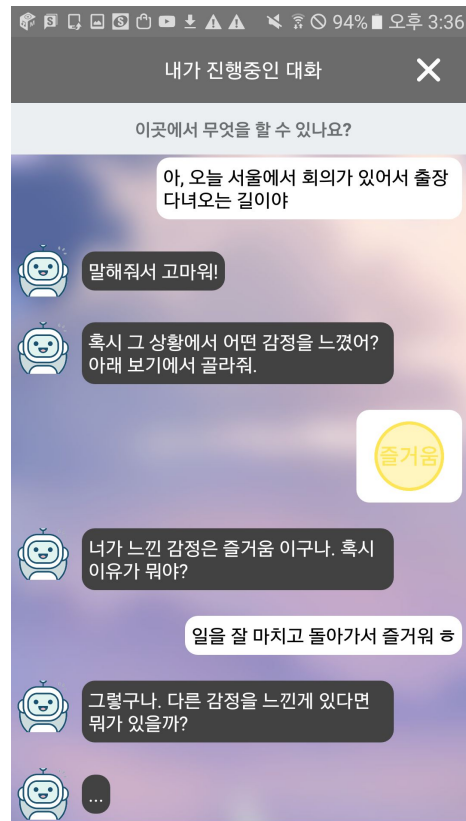
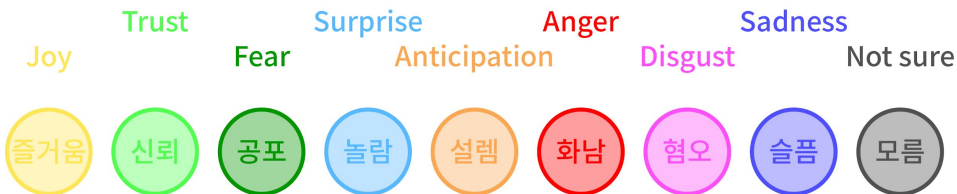
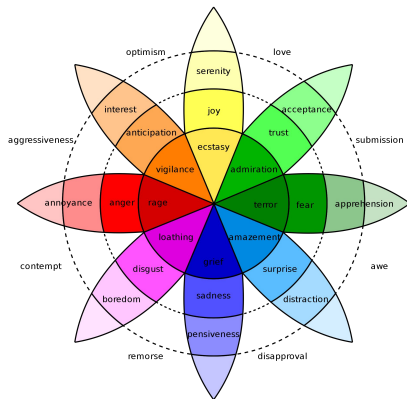
What did you feel?  
Choose one from below!

# Chatbot-User Conversation Scenario

1. Explain my situation

2. Choose the emotions

Based on Plutchik's theory



(More detailed answer)

What did you feel?  
Choose one from below!

(Joy)

Is there special reason?

I'm happy to go back  
after work well.

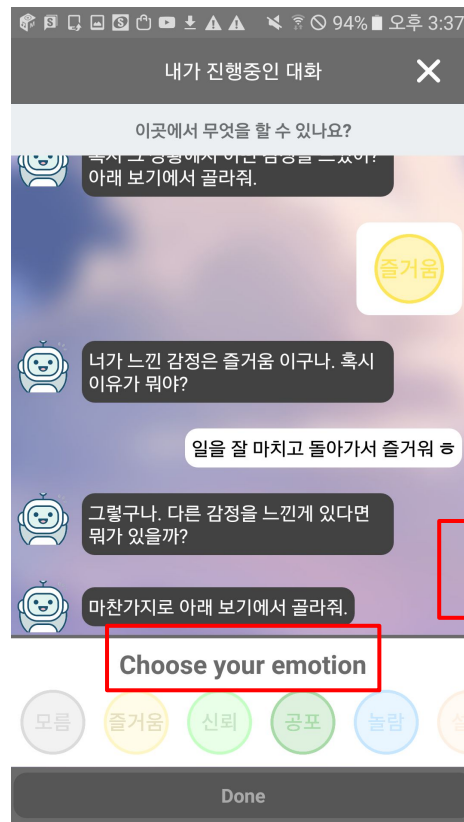
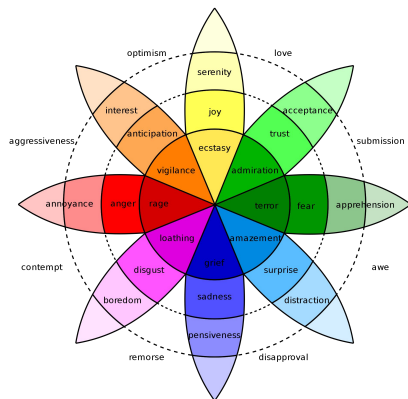
Another emotion?

# Chatbot-User Conversation Scenario

1. Explain my situation
2. Choose the emotions

Based on Plutchik's theory

Select twice, not once



(Joy)

Is there special reason?

I'm happy to go back after work well.

Another emotion?  
Choose again!

Choose your emotion

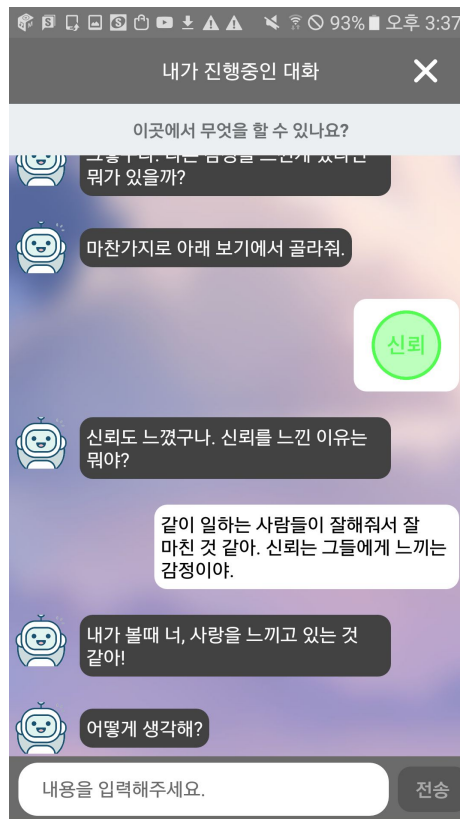
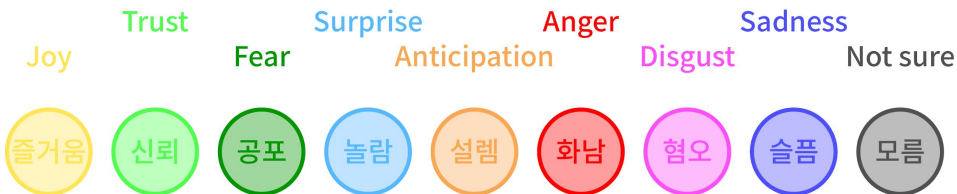
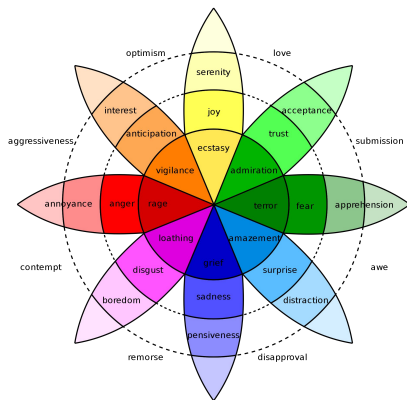
# Chatbot-User Conversation Scenario

1. Explain my situation
2. Choose the emotions

Based on Plutchik's theory

Select twice, not once

Provide analysis of both emotions



(Trust)

Is there special reason?

The people I work with were very good and I felt reliance on them.

I think you're feeling love right now!

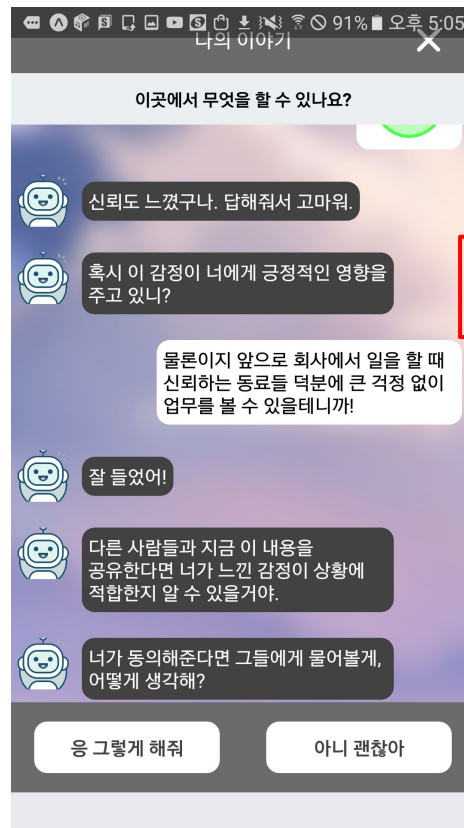
# Chatbot-User Conversation Scenario

1. Explain my situation
2. Choose the emotions
3. Tell about the effect caused by their emotions

If user selected ...

Negative emotion: Asking about problem

Positive emotion: Asking how it affect them

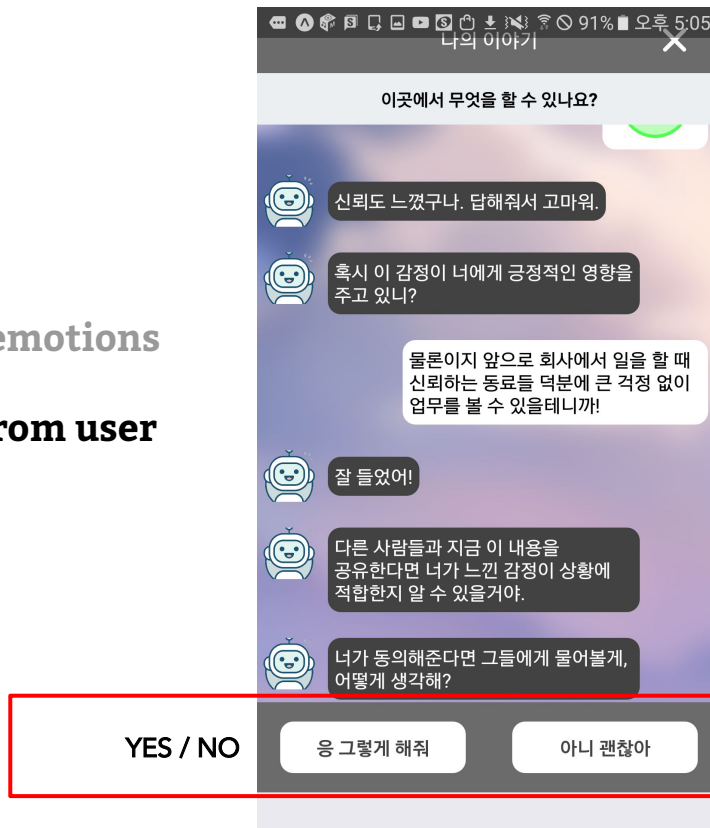


How does it affect you in positive way?

(Detailed reason)

# Chatbot-User Conversation Scenario

1. Explain my situation
2. Choose the emotions
3. Tell about the effect caused by their emotions
4. Sharing it after getting permission from user



How does it affect you in positive way?

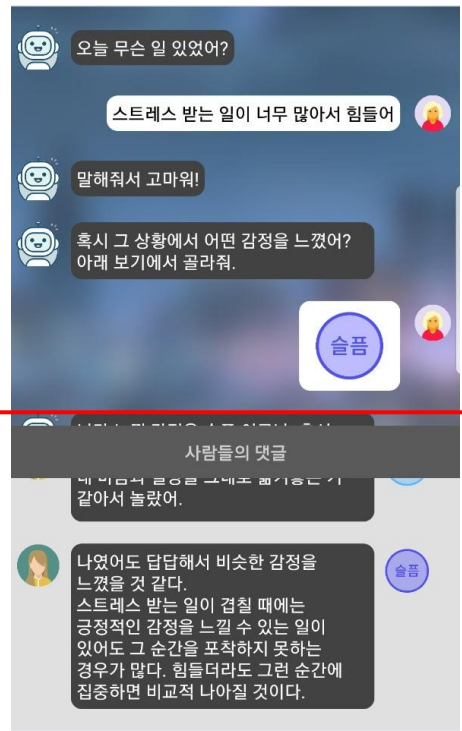
(Detailed reason)

There is great chance to share it to others for knowing their thoughts.

If you don't mind, let me share yours to other.

# Chatbot-User Conversation Scenario

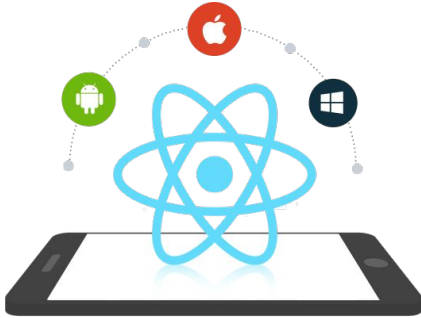
1. Explain my situation
2. Choose the emotions
3. Tell about the effect caused by their emotions
4. Sharing it after getting permission from user





# Overall Implementation

**React Native**



**Git**



**Firebase**

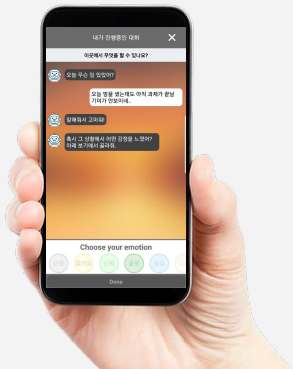


**ETRI NLP Open API**

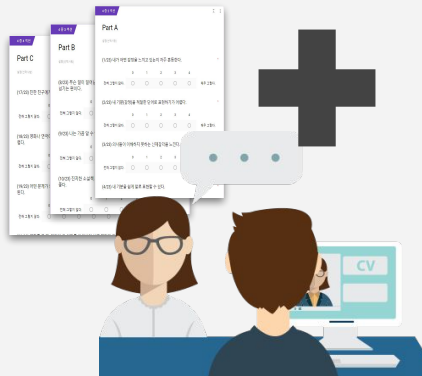


# Experiment

# Method



**User-test** : For 3 days



**Survey** : Qualitative test



**Analysis**

# Result. Quantities

Total participants	<b>15</b>
Total answered survey	<b>11</b>
Male : Female	<b>7 : 3</b>
<b>Total contents</b> (# of Dialogs)	<b>33</b>
<b>Total comments</b>	<b>95</b>

**For 3 days**

# **Result. Checking in 4 Aspects**

**Accessibility**

**Expressibility**

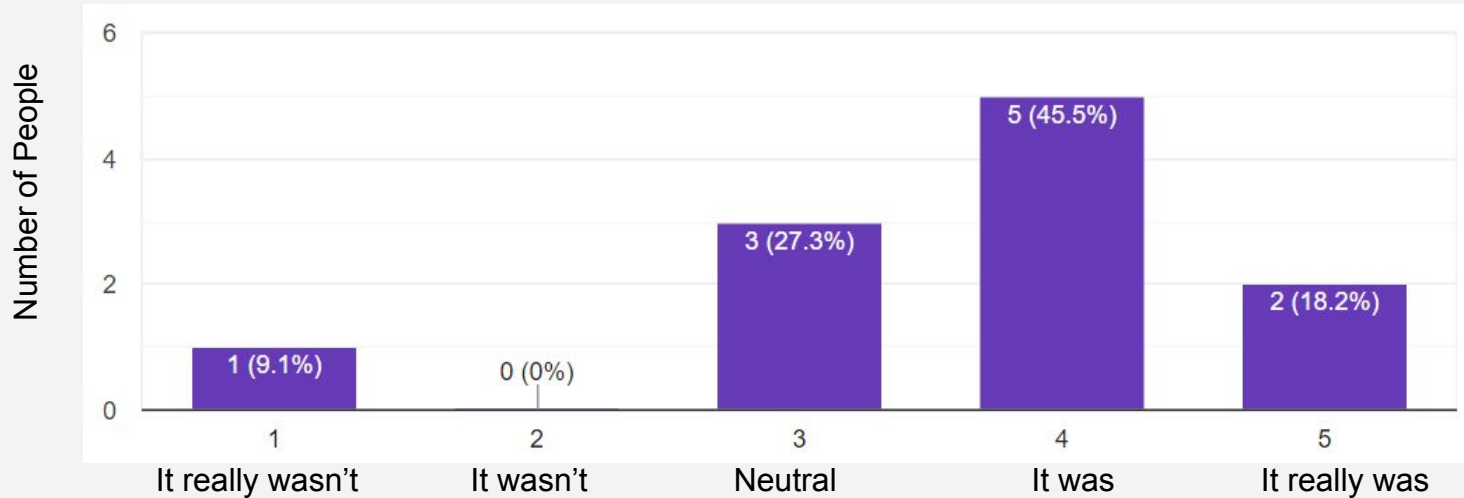
**Improvement**

**Usability**

# Result. Accessibility

**Q. Emotional expression through conversation with chatbot was easier than a way that I express in daily life.**

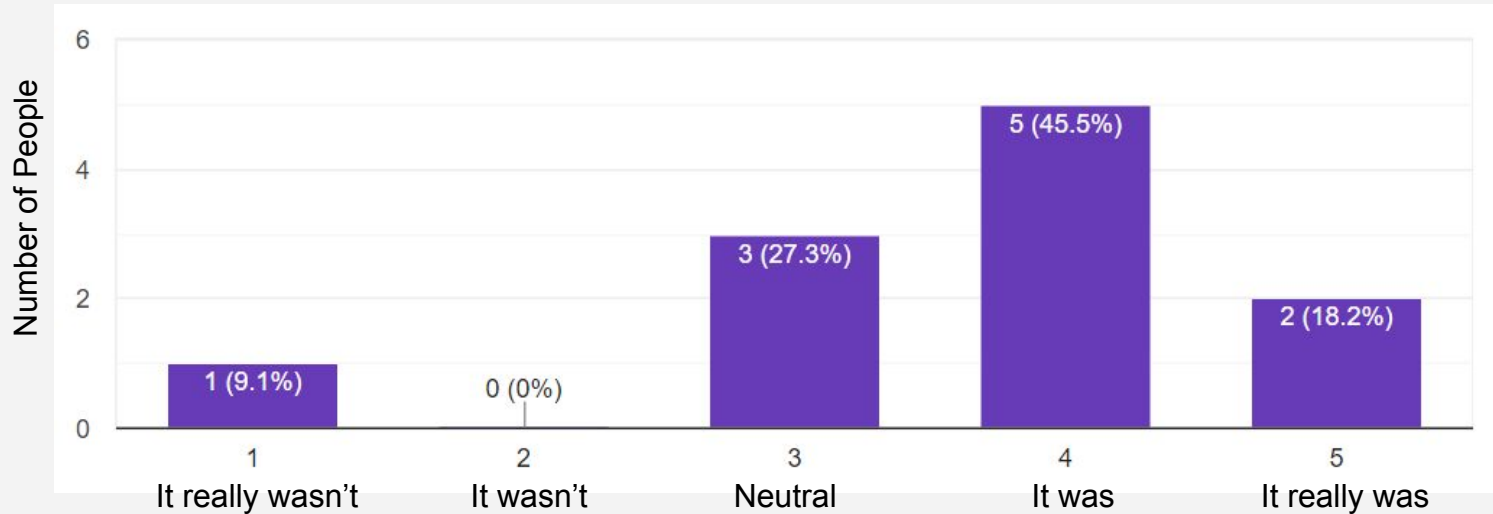
**A.**



# Result. Accessibility

**Q. Emotional expression through conversation with chatbot was easier than expressing to others.**

**A.**





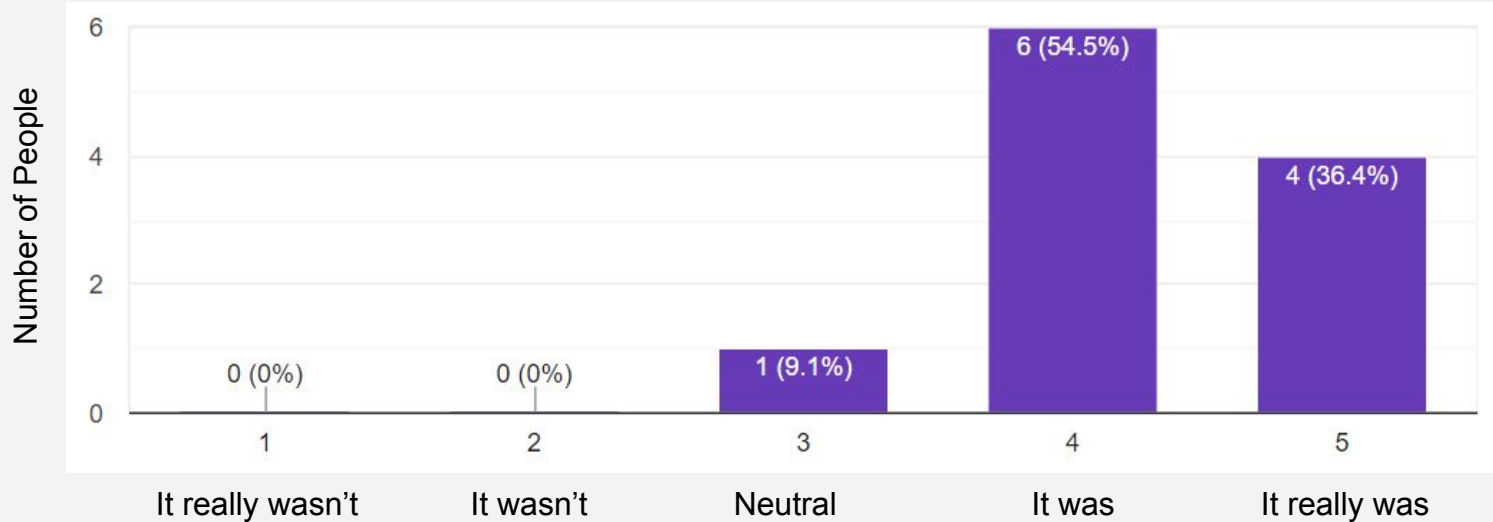
## Result. Accessibility

“ The Chatbot is **easier than**  
the usual way of expressing emotion. ”

# Result. Expressibility

**Q. In conversation with Chatbot, I was able to be honest with my feelings.**

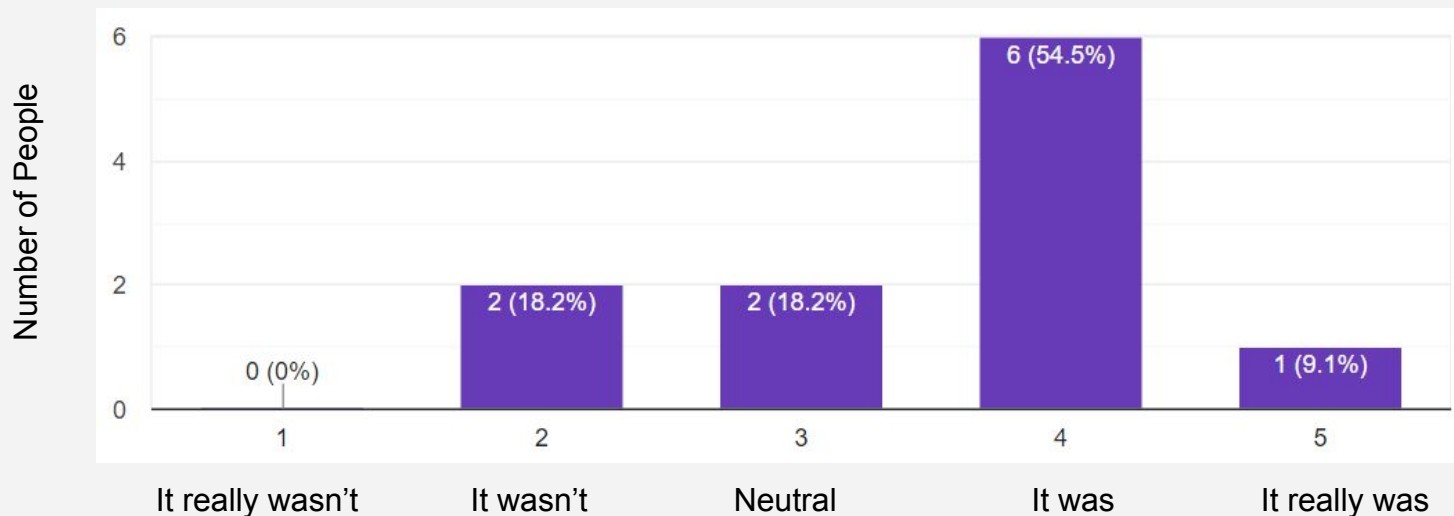
**A.**



# Result. Expressibility

**Q. In conversation with Chatbot, I was able to reveal what I wanted to hide.**

**A.**



## Result. Expressibility

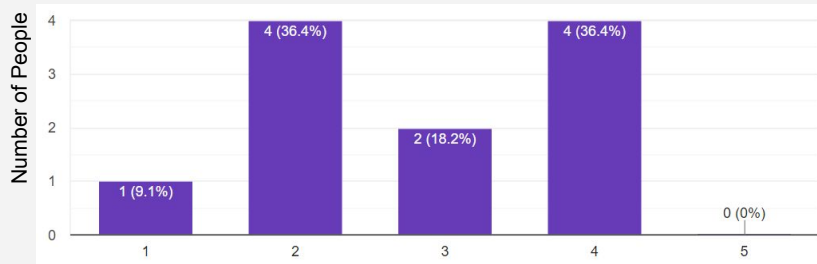
“ Users are **honest and emphatic** in ”  
the conversation with the Chatbot.

# Result. Expressibility

“ Some of users were **hard to tell their feelings in more detail.** ”

Q. In conversation with Chatbot, I was able to tell my feelings in more detail.

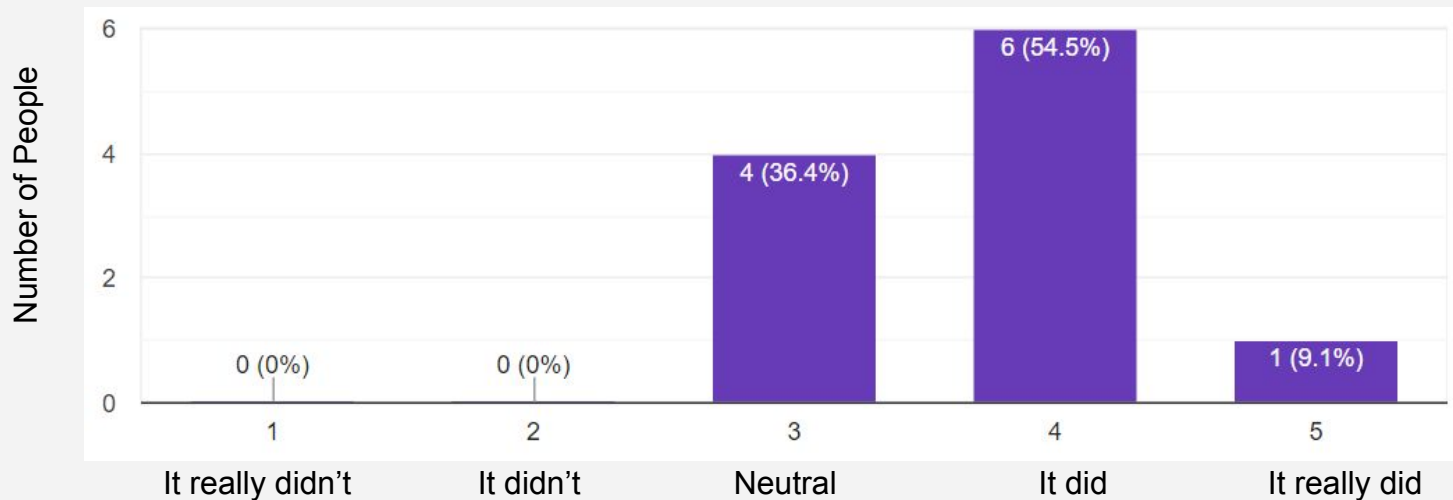
A.



# Result. Improvement

**Q. Other comments left in my conversation helped me understand my feelings and circumstances.**

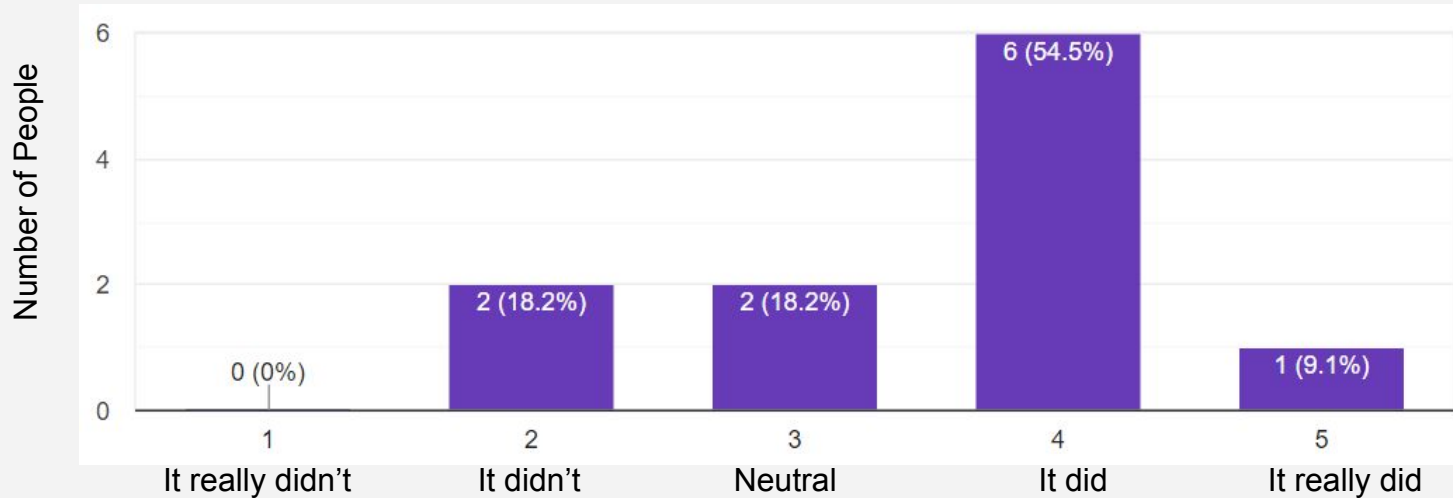
**A.**



# Result. Improvement

**Q. The conversation of others and the comments on them helped me express my feelings.**

**A.**



## Result. Improvement

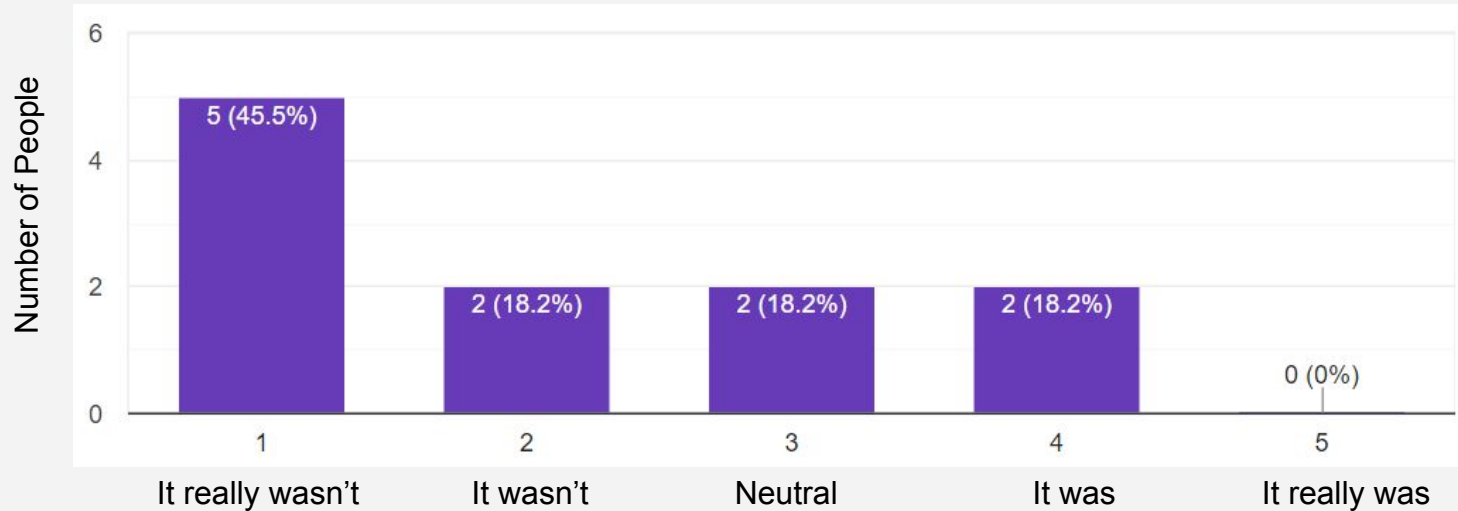
“ Users’ comments are helpful to  
**understand feelings and circumstances.** ”



# Result. Usability

Q. It was hard to use the application.

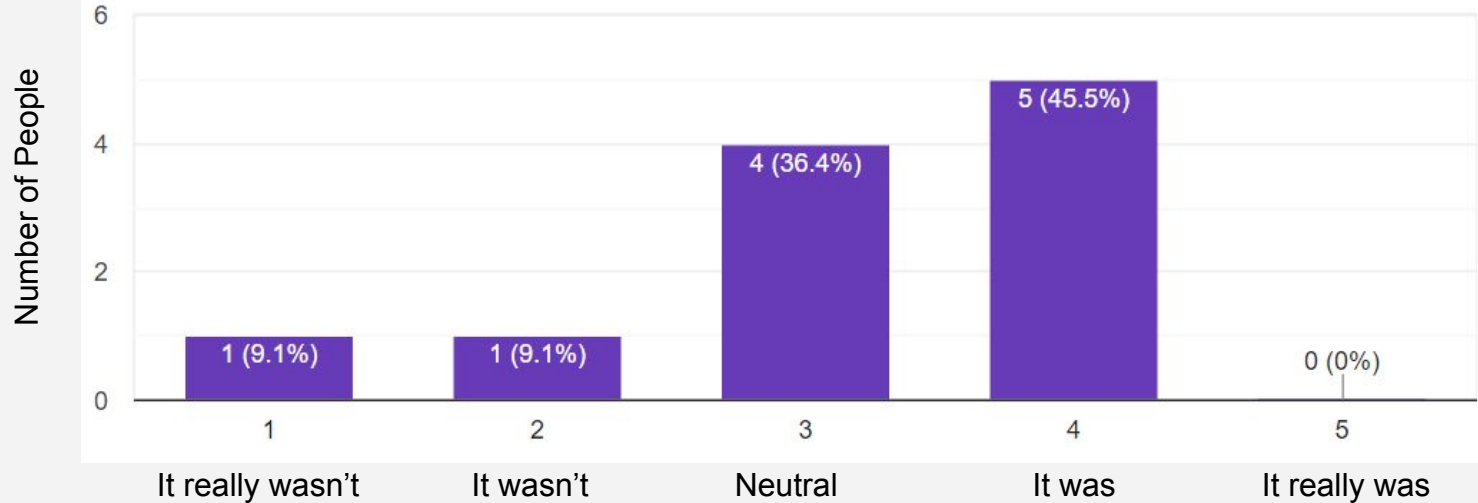
A.



# Result. Usability

**Q. The conversation with Chatbot was overall satisfactory.**

**A.**



## Result. Usability

“ The application is **easy to use**. ”

## Result. Usability

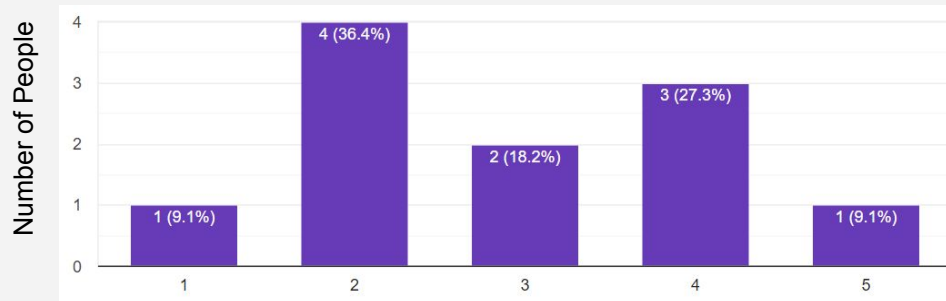
“

Some of users felt the conversation with the  
Chatbot was **less natural**.

”

Q. The conversation with Chatbot was entirely natural.

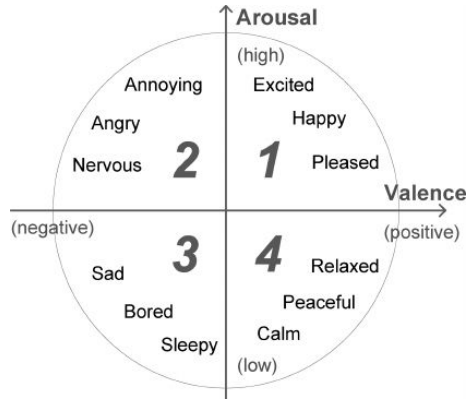
A.



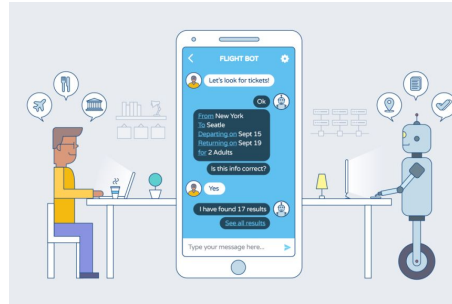
# Conclusion. Achievement

1. **Accessibility**: Users felt the Chatbot was **easy to express their emotion**.
2. **Expressibility**: Users were able to **be honest and emphatic** in the conversation with the Chatbot.
3. **Improvement**: User were able to **get help from the other users' comments**.
4. **Usability**: The application was **easy to use**.

# Future Works



Can express  
more various emotions



More flexible  
Conversation strategy



Quality Control

# Appendix

# Appendix A - Short Answer Question 1/3

일상에서 주로 감정표현을 어떻게 하나요?

응답 11개

잘 하지 않는 편입니다.  
가까운 친구들에게만 솔직하게 감정 표현을 합니다.

다른 사람들에게 감정 표현을 거의 하지 않습니다. 그냥 소수의 친한 친구들과 이야기하는 것을 제외하면 표현하지 않습니다.

감정 표현을 잘 하지 않습니다.

표정으로 표현하거나 카카오톡으로 친구에게 표현한다

솔직한 감정보다는 타인에게 호의적으로 표현하기 위해 노력한다.

말로표현

순간적인 감정은 그 때 주위 사람들에게 표현하곤 하지만, 보통은 감정을 잘 드러내지 않으려고 한다.

주변 사람들과 이야기하기, 세줄일기 어플에 글 쓰기

친구와 대화

대화나 카톡

혼자 생각하고 인내



# Appendix A - Short Answer Question 2/3

챗봇의 감정표현이 더 수월했다면(하지 않았다면) 그 이유는 무엇인가요?

응답 11개

상대의 반응에 대한 스트레스가 없어서.

타인이 내가 느끼는 감정에 대해서 어떻게 생각하는지에 대한 고민을 할 필요가 없어서 좋았어요.

상대가 어떻게 생각할지, 어떻게 받아들일지 고민할 필요가 없었습니다.

나의 솔직한 감정을 표현해도 부끄럽지 않다는 점, 오히려 사람이 아니기 때문에 어떤 말이든 해도 괜찮다는 편안함

상대방 입장을 생각하지 않아도 됐기 때문

인공지능 개선이 필요해보임

직접 다른 사람과 이야기하는 것이 아니어서

챗봇이 인지하는 감정의 종류가 너무 단조로운 것 같습니다. 어떤 이야기를 하든 같은 패턴이 반복되기 때문에 이야기의 상대방인 챗봇이 나에게 공감이나 이해를 하고 있다는 느낌이 전혀 들지 않았습니다. (물론 기계이니 당연하겠지만요...) 그저 벽에다 대고 이야기하는 기분이라 감정 표현이 수월하지 않았다고 생각합니다.

조금 더 다양한 감정 선택지가 있었으면 좋겠습니다

사실 불특정 다수가 내 감정을 본다는 사실이 약간 부담스러웠다

익명성 보장

# Appendix A - Short Answer Question 3/3

챗봇과의 대화를 통한 감정 표현에서, 좋았던(좋지 않았던) 부분이 있었다면, 그 이유는 무엇인가요?

응답 8개

챗봇이 말할 수 있는 말이 더 다양해지면 좋을 것 같아요. 비슷한 말이 매일 반복되니깐 약간 부자연스러웠어요.

처음 내 감정을 선택할 때는 챗봇은 로봇이기 때문에 내가 눈치를 필요가 없이 바로 선택할 수 있어서 솔직하게 편하게 선택할 수 있어서 좋았다. 단, 감정 옵션이 너무 적었다. "짜증", "불쾌" 등, 더 다양한 감정이 있다면, 또는 감정에 대한 강도도 선택할 수 있어야 한다는 생각이 들었다.

감정의 분류가 너무 부족하다. 대분류로 감정을 분류해놓은 것은 알겠지만 그 분류가 좀 더 세세해야 할 필요가 있다. 사람들은 부끄럼이 많다. 특히 현대 사회에서 자신의 솔직한 감정을 표현 못 하고 겉으로는 아닌척 하는 경우도 드물지 않다. 이 앱은 그런 사람들에게 스트레스의 해소와 안정감을 제공할 수 있을 것으로 본다. 다만 역시 사람들은 부끄럼쟁이이기 때문에 어느정도의 디테일이 충족되어야 더 잘 말 할 수 있는 법이다.

감정의 선택지가 적었음. 보다 많은 선택지가 필요하다고 느낌

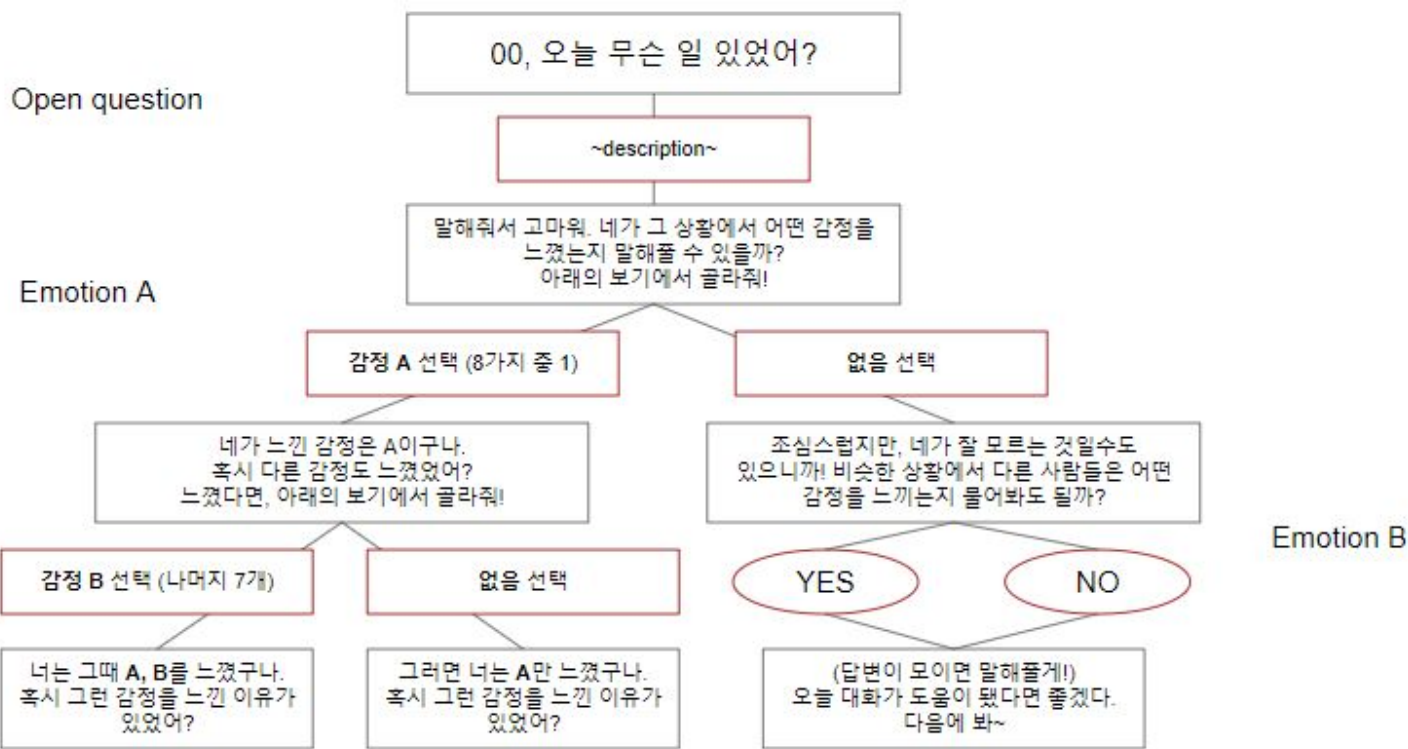
감정의 종류가 다양하지 않았던 점(주관식 문항을 따로 두면 어땠을까)

챗봇이 가진 감정 패턴이 너무 적었습니다. 8개의 카테고리만으로는 인간의 다양한 감정을 다 표현할 수 없었기 때문입니다. 우울, 답답, 속상함, 불안, 등등의 감정은 화남이나 슬픔에 귀속될 수 없는 독립적인 영역이라고 생각합니다.

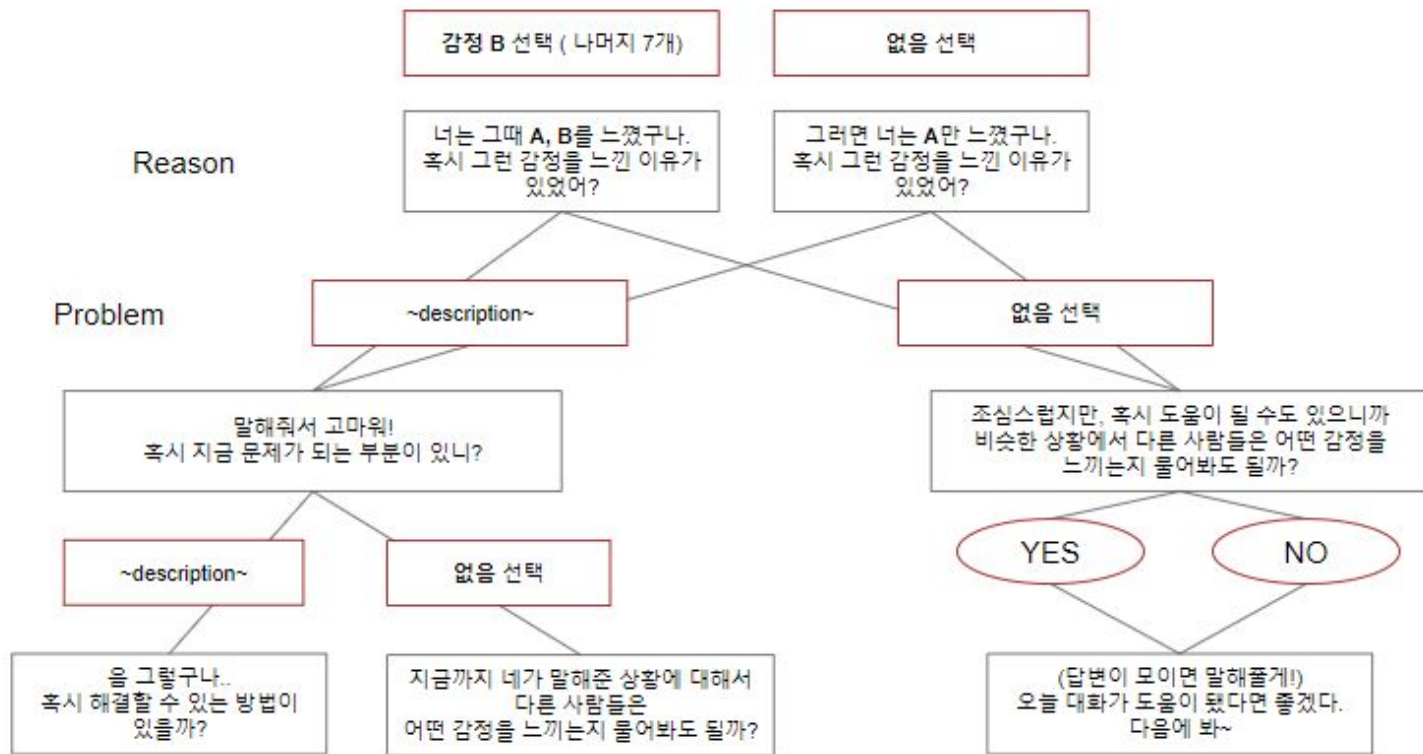
감정이 하나로 정의되기 힘든 경우도 많았습니다

생각을 표현할 수 있던점

# Appendix B - Conversation Scenario 1/3



# Appendix B - Conversation Scenario 2/3



# Appendix B - Conversation Scenario 3/3

