

Deliverable 2 - AI Testing Tool Report
CMPE 187 - Software Quality Engineering
San Jose State University

Group 2

Team members:

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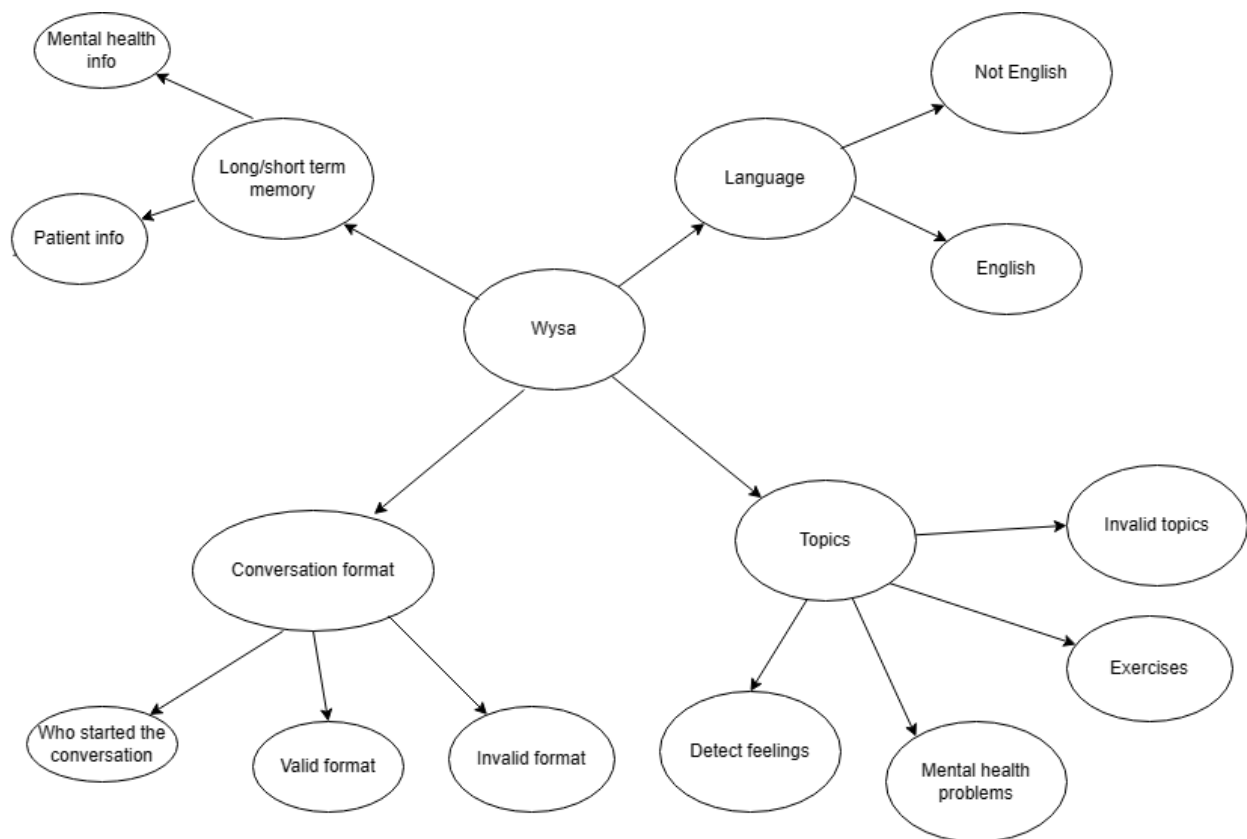
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Section 1 – AI Function Test Requirement Analysis

1. AI function test requirements

- Wysa is a chatbot that offers mental health counseling through chatting. In addition, it also has functionalities such as guiding through exercises.
- We decided to narrow down Wysa's core functionalities to perform our AI testing, those are:
 - Detect feelings, whether or not Wysa can detect user's feelings through chatting
 - Mental health problems, can Wysa detect mental health problems just by chatting
 - Exercises, what type of exercises can Wysa offer as well as functionalities like giving feedback
 - Invalid topics, we will also test invalid topics to see whether or not Wysa can handle those.



2. AI function test requirement modeling

- To test functionality above, we will use an AI testing method consisting of specifying input, context and output for each function above.

- Input specify type of input depends on the functions. Context specifies type of user and output categories type of output Wysa offers.

Section 2 – AI Test Modeling for Selected AI Features

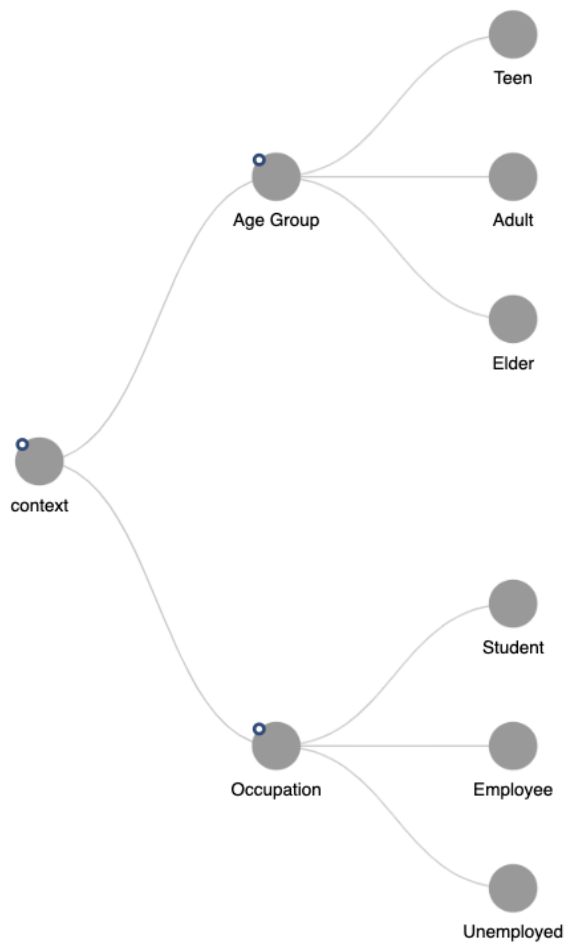
AI testing tool was used in order to produce input, context, output and classification decision tables

1. Context modeling for each selected AI-powered function/feature
2. AI-powered function input classifications
3. AI-powered function output/event/action classifications
4. AI-powered function classification decision tables

Mental Illness - Faith

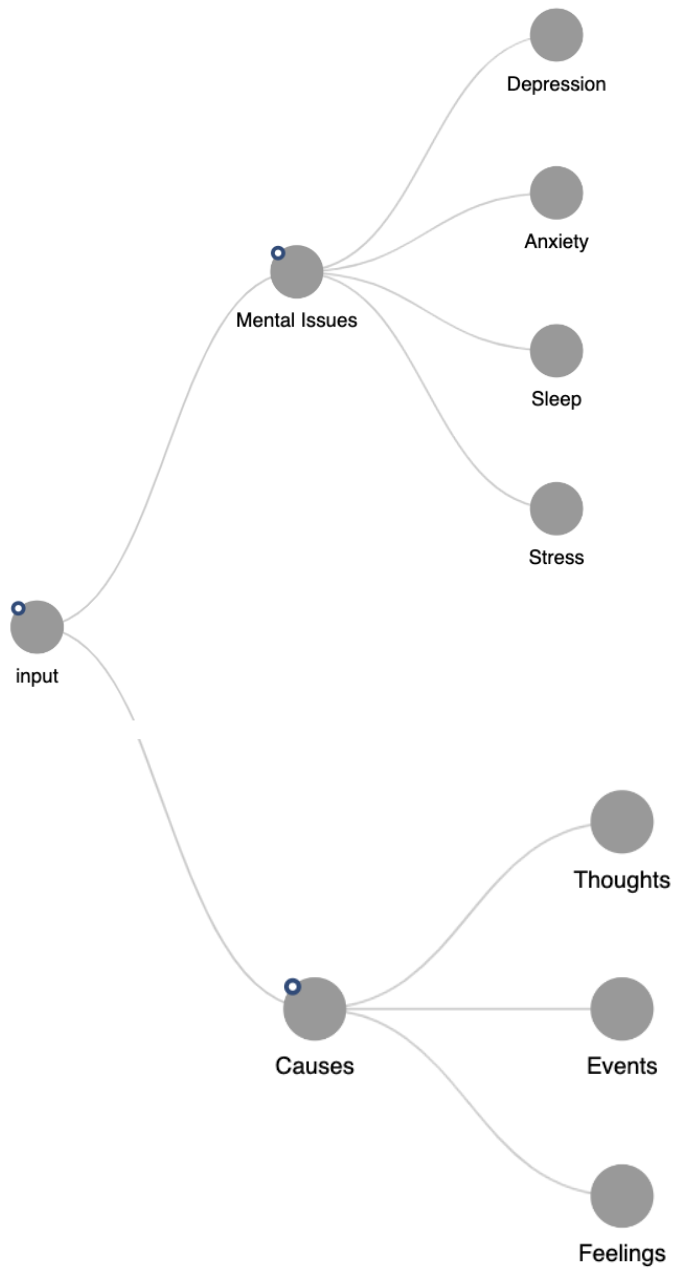
1. AI-powered Function Context Model Classification

This context model represents users based on their age group and occupation. A User can either be a teen, adult, or elder. A User's occupation can be Student, Employee, or Unemployed. Wysa will be tested based on various contextual factors.



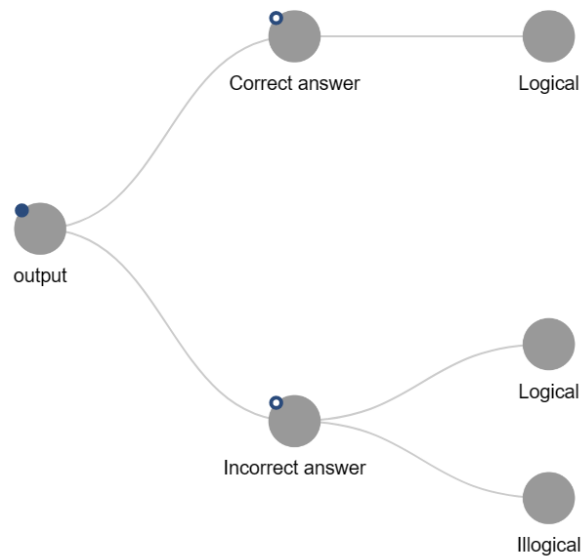
2. AI Powered Function Input Classification

Wysa will be tested based on two different types of user inputs: Mental Issues and Causes. The app will test various combinations of different types of mental issues and types of causes. The types of mental issues that will be considered are depression, anxiety, sleep, and stress. The types of causes that will be tested are thoughts, events, and feelings.



3. AI-powered function output/event/action classifications

This output model consists of two output classifications: correct answer, incorrect answer. A correct answer output will be logical while an incorrect answer can either be logical or illogical. This output model is shared with the Exercise function and is explained in length in the Exercise Function's AI-powered function output/event/action classifications.



4. AI-powered function classification decision table

Input Decision Table

The AI test tool created an input decision table based on the input model. It generated a total of 12 combinations of user inputs.

@id	Causes	Mental Issues
1	Thoughts	Depression
2	Thoughts	Stress
3	Events	Stress
4	Feelings	Stress
5	Events	Depression
6	Feelings	Depression
7	Thoughts	Anxiety
8	Events	Anxiety
9	Feelings	Anxiety
10	Thoughts	Sleep
11	Events	Sleep
12	Feelings	Sleep

Context Decision Table

The AI tool created a context decision table based on the context model. It generated test cases based on various context classifications. It created 9 combinations of context classifications with age groups and occupations.

@id	Age Group	Occupation
1	Teen	Student
2	Teen	Employee
3	Teen	Unemployed
4	Adult	Student
5	Adult	Employee
6	Adult	Unemployed
7	Elder	Student
8	Elder	Employee
9	Elder	Unemployed

Output Decision Table

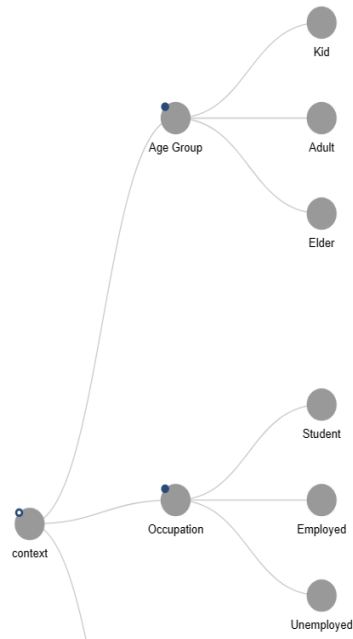
Based on the output model, the AI tool created an output decision table. It created 12 outputs because there are 12 inputs. However, each test case has outputs that are undefined. This means that each output has to be filled out manually.

@id	Invalid	Valid
1	undefined	undefined
2	undefined	undefined
3	undefined	undefined
4	undefined	undefined
5	undefined	undefined
6	undefined	undefined
7	undefined	undefined
8	undefined	undefined
9	undefined	undefined
10	undefined	undefined
11	undefined	undefined
12	undefined	undefined

Exercises - Khai

Aside from mental health counseling, Wysa chatbot can also guide users through different exercises. This is to test whether or not Wysa is good or versatile in conversing with users through exercises

1. Context modeling for each selected AI-powered function/feature



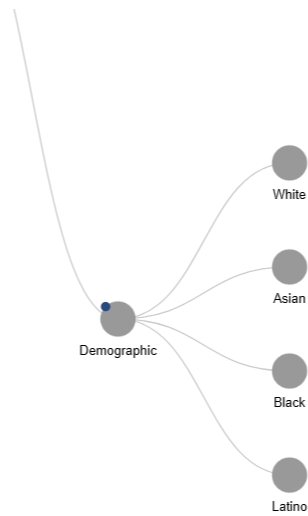


Figure 3.1.1 and 3.1.2, context modeling for Exercises function

The context grouped users into 3 different categories, age group, occupation and demographic. For age groups, the user is divided to kid, adult and elder. Occupation is further divided into student, employed and unemployed. In demographic, there are four categories: white, asian, black and latino.

2. AI-powered function input classifications

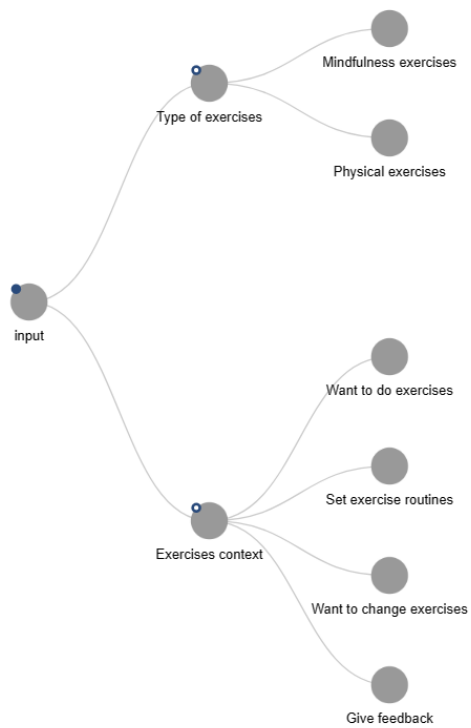


Figure 3.2.1, input modeling for Exercises function

The input for the exercise function is divided into two categories. First is the type of exercises and second is the context. Type of exercise contains mindfulness exercises and physical exercises. In exercises context, it is divided into want to do exercises, set exercises routines, want to change exercises and give feedback.

3. AI-powered function output/event/action classifications

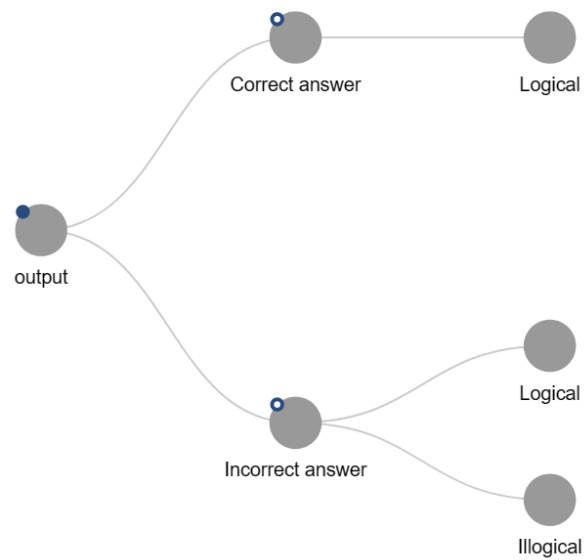


Figure 3.3.1, output modeling for Exercises function

For the output, there are correct answers and incorrect answers. If the answer is correct, then it has to be logical. If it is not correct, it can still be logical, but not related to the current context, or it can simply be illogical.

4. AI-powered function classification decision tables



id	Age Group	Demographic	Occupation
1	Kid	White	Student
2	Kid	Asian	Student
3	Kid	Black	Student
4	Kid	Latino	Student
5	Kid	White	Employed
6	Kid	Asian	Employed
7	Kid	Black	Employed
8	Kid	Latino	Employed
9	Kid	White	Unemployed
10	Kid	Asian	Unemployed

Figure 3.4.1 Classification decision tables top view

id	Context	Semantic	id	Exercises context	Type of exercises
1	Correct	Logical	1	Want to do exercises	Mindfulness exercises
2	Correct	Logical	2	Set exercise routines	Mindfulness exercises
3	Correct	Logical	3	Want to change exercises	Mindfulness exercises
4	Correct	Logical	4	Give feedback	Mindfulness exercises
5	Correct	Logical	5	Want to do exercises	Physical exercises
6	Correct	Logical	6	Set exercise routines	Physical exercises
7	Correct	Logical	7	Want to change exercises	Physical exercises
8	undefined	Logical	8	Give feedback	Physical exercises
		undefined			

Figure 3.4.2, Classification decision table rear view

id	Exercises context	Type of exercises
1	Want to do exercises	Mindfulness exercises
2	Want to change exercises	Mindfulness exercises
3	Give feedback	Mindfulness exercises
4	Want to do exercises	Physical exercises
5	Want to change exercises	Physical exercises
6	Give feedback	Physical exercises

Figure 3.4.3, Classification decision table rear view different angle

The classification decision table is based on input, context and output specified above.

Feeling Detection Function - Long

Input model

The input classification spanning tree for feeling detection encompasses a comprehensive framework that categorizes emotions into two major cases and five minor cases. The first major case is centered around negative or unpleasant feelings, which encompasses three minor cases including stress, sadness, and anxiety. These emotions are typically associated with distress, discomfort, or unease, and may manifest in various ways in different individuals.

The second major case in the classification spanning tree pertains to positive or pleasant feelings, including emotions such as happiness and excitement. These

emotions are typically associated with joy, contentment, and enthusiasm, and are often characterized by a sense of well-being and positivity.

The aim of testing Wysa, the chatbot, was to evaluate its ability to accurately detect the user's emotions based on this classification spanning tree. By identifying and categorizing emotions into major and minor cases, Wysa aims to provide insights and support to users by understanding their emotional state and providing appropriate responses and guidance. Through this evaluation, it can be determined if Wysa is effective in accurately detecting and responding to the user's emotions, thus offering valuable insights into the capabilities of the chatbot in the field of emotion detection and support.



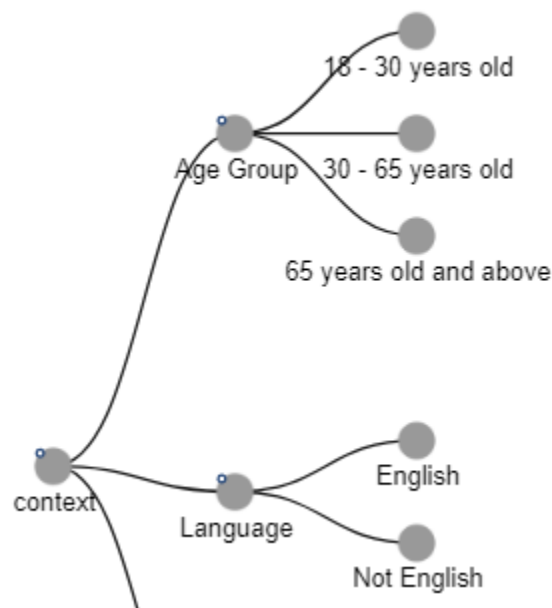
Context

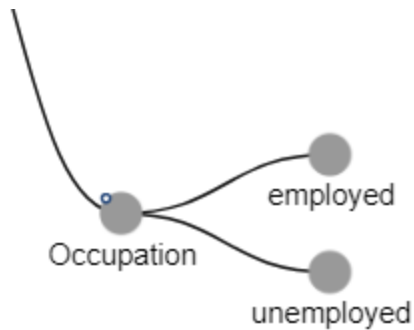
The context classification spanning tree for feeling detection encompasses four major cases and ten minor cases, providing a comprehensive framework to evaluate Wysa's performance in various contextual scenarios. The first major case focuses on age groups, encompassing three distinct age ranges: 18 to 30 years old, 30 to 65 years old, and 65+ years old. This allows for testing Wysa's functionality and effectiveness across different age groups, considering potential variations in emotional expression and needs across different age groups.

The second major case in the spanning tree is language, aiming to assess Wysa's ability to understand languages other than English. This case recognizes the importance of linguistic diversity and evaluates Wysa's performance in comprehending and responding to emotions expressed in languages other than English..

The last major case in the spanning tree is occupation, encompassing the user's occupation as a contextual factor. This case recognizes that an individual's occupation could impact their emotions, and evaluates Wysa's ability to understand and respond to emotions expressed in different professional contexts.

The seven minor cases within the major cases of age group, language, and occupation further provide an evaluation of Wysa's performance in various specific scenarios within each major case. This structured approach to testing allows for a comprehensive assessment of Wysa's capabilities in different contexts, providing insights into its effectiveness and potential areas for improvement in detecting and addressing emotions across diverse populations.

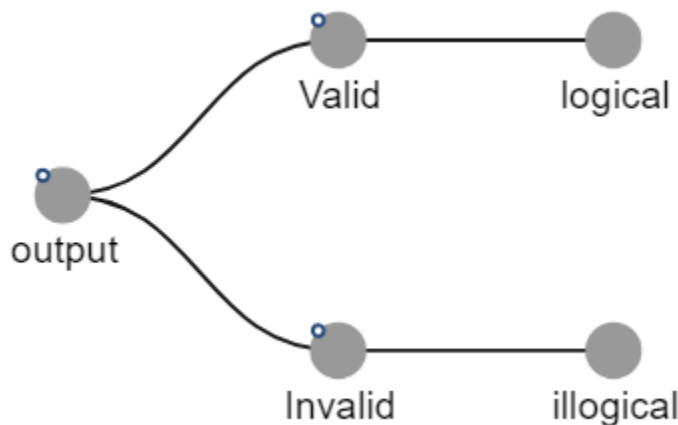




Output

The output classification spanning tree for feeling detection comprises two major cases and two minor cases, providing a framework for evaluating the accuracy and logic of its responses. The first major case is labeled as "valid," which encompasses responses that are logical and coherent, aligning with the expected output from Wysa. These responses are deemed accurate and reliable, indicating that Wysa is providing meaningful and relevant answers to user queries.

The second major case in the classification tree is labeled as "invalid," encompassing responses that are illogical. The minor case of "illogical" includes responses that may not make sense or lack coherence, indicating that Wysa may not be providing logical answers.



Context model decision table

ID	Age Group	Language	Occupation
C1	18 - 30 years old	-	-
C2	-	Not English	-
C3	-	-	Employed

Input model Decision table

ID	Good Feelings	Bad Feelings
I1	Happy	-
I2	Excited	-
I3	-	Stress
I4	-	Sad
I5	-	Anxious

Output model decision table

ID	Output
O1	Logical
O2	Illogical

Test case design table

I have devised 8 test cases that encompass both the input and context model spanning trees. Each minor case will have a corresponding test case to ensure that Wysa accurately detects feelings, whether they are positive or negative, in various contextual scenarios. The first two test cases will focus on feeling detection with both invalid and valid conversation formats. The subsequent three test cases will solely test the accuracy of feeling detection. Lastly, the last three test cases will evaluate both

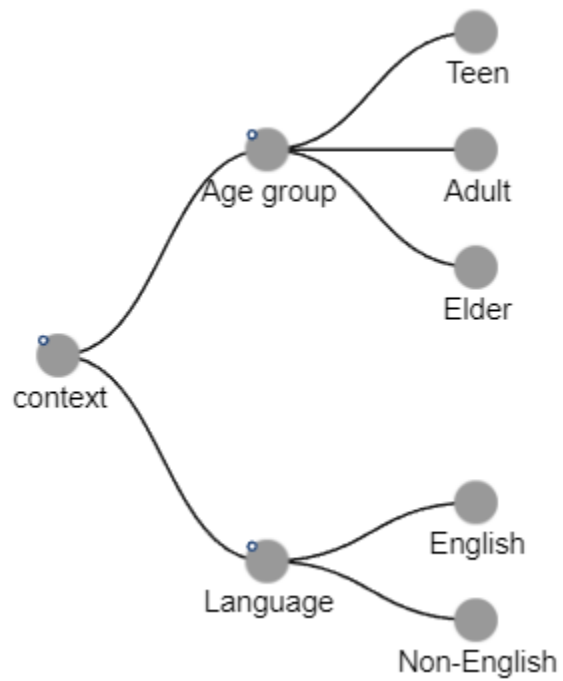
feeling detection and contextual scenarios, such as age group, language, and occupation.

Test Case ID	Input	Context	Output
1	I1	-	O1
2	I2	-	O2
3	I3	-	O1
4	I4	-	O1
5	I5	-	O1
6	I1	C1	O2
7	I3	C2	O2
8	I5	C3	O2

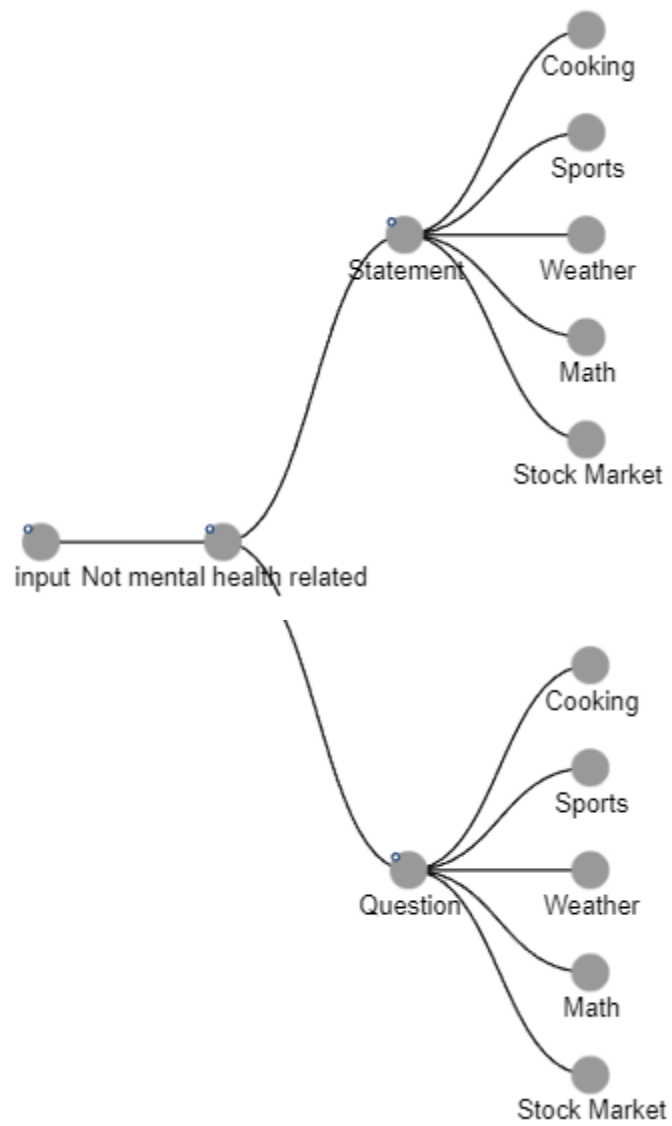
Invalid Topics - Kevin

In order to test Wysa's AI capacity we also opted to test how it would handle topics unrelated to mental health.

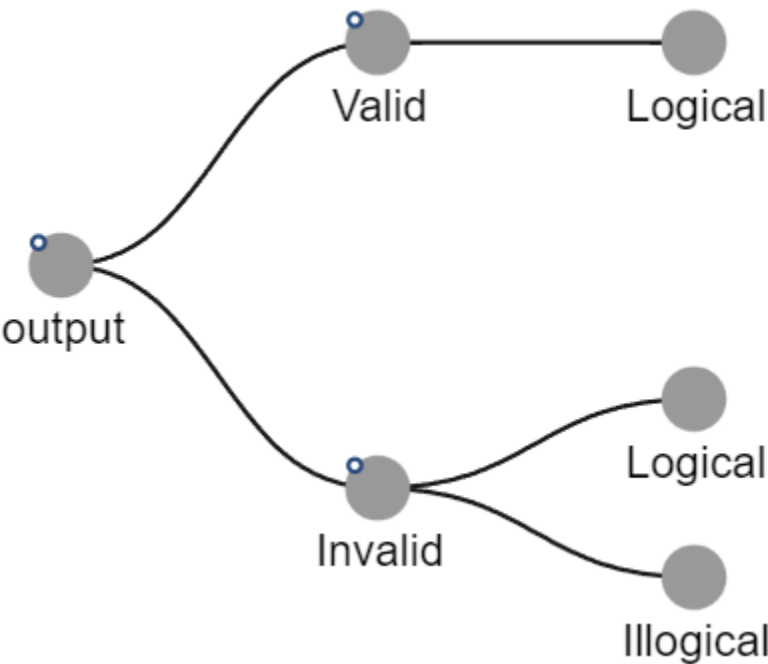
Ai-Powered Function Context Classification



Ai-Powered Function Input Classification



Ai-Powered Function Output Classification



Ai-Powered Function Classification Decision Table

Input Decision Table

@id	Not mental health related.Question	Not mental health related.Statement
1	Cooking	Cooking
2	Stock Market	Sports
3	Cooking	Weather
4	Sports	Weather
5	Weather	Weather
6	Math	Weather
7	Stock Market	Weather
8	Cooking	Math
9	Sports	Math
10	Weather	Math
11	Math	Math
12	Sports	Cooking
13	Stock Market	Math
14	Cooking	Stock Market
15	Sports	Stock Market
16	Weather	Stock Market
17	Math	Stock Market
18	Stock Market	Stock Market
19	Weather	Cooking
20	Math	Cooking
21	Stock Market	Cooking
22	Cooking	Sports
23	Sports	Sports
24	Weather	Sports
25	Math	Sports

Context Decision Table

@id	Age group	Language
1	Teen	English
2	Teen	Non-English
3	Adult	English
4	Adult	Non-English
5	Elder	English
6	Elder	Non-English

Output Decision Table

@id	Invalid	Valid
1	undefined	undefined
2	undefined	undefined
3	undefined	undefined
4	undefined	undefined
5	undefined	undefined
6	undefined	undefined
7	undefined	undefined
8	undefined	undefined
9	undefined	undefined
10	undefined	undefined
11	undefined	undefined
12	undefined	undefined
13	undefined	undefined
14	undefined	undefined
15	undefined	undefined
16	undefined	undefined
17	undefined	undefined
18	undefined	undefined
19	undefined	undefined
20	undefined	undefined
21	undefined	undefined
22	undefined	undefined
23	undefined	undefined
24	undefined	undefined
25	undefined	undefined

Section 3 – AI Function Test Cases with Inputs/Expected Outputs

AI-powered function test sets

In addition to doing the test cases, we also use the AI testing tool to augment the test case inputs, that is modified the inputs to test whether or not Wysa can still detect the meaning of those sentences when the input is modified in different ways, like missing words, random characters, etc.

Mental Issues Function

Test case #1

Test Case ID	M1	
Test Case # in AI Tool	37	
Test Case Description	Tests if Wysa can understand the User's mental health and thoughts to suggest ways to help the User feel better.	
Input	Mental Issue: Depression, Cause: Thought	
Steps #	Wysa	User
1	Asks User how they are feeling	
2		User says "I'm feeling depressed"
3	Asks User what feelings made me feel depressed	
4		User says "Bad thoughts"
5	Asks User to share one thought about the situation	
6		User states a thought
7	Lists thoughts that might cause the way the User is feeling	
8		User chooses which thought they relate to most
9	Guides User on ways to make them	

	feel better based on the User's thought	
10		User follows guide
Expected Output	Wysa recommends a guide for the User to follow to make them feel better.	

Augmentation test cases

Test Case 1.1

Step 2: random word swap: "depressed feeling I'm"

Test Case 1.2

Step 2: random word delete: "feeling depressed"

Test case #2

Short term memory about User's stress and thoughts

Test Case ID	M2	
Test Case # in AI Tool	46	
Test Case Description	Tests the short term memory of Wysa by testing if it remembers the User's mental health information and thoughts.	
Input	Mental Issue: Stress, Cause: Thought	
Steps #	Wysa	User
1	Asks User how they are feeling	
2		Says "I'm feeling stressed"
3	Asks if User is anxious	
4		User responds "Yes"
5	Asks if it is affecting the User physically too	
6		User can choose "Mostly mind" Mostly physical" "A bit of both"
7		User chooses "Mostly mind"

8	Asks User what thought comes to mind that causes their stress	
9		User says "I have a lot of homework"
10	Asks the user what change they would hope for	
11		User says what they would like to change
12	Restates the user's thought, "I have a lot of homework" and asks what positives about the situation/themselves have been ignored	
13		User creates positive thought
Expected Outcome	Wysa should be able to remember User's mental health and thought input to help User feel better.	

Test case #3

Test Case ID	M3	
Test # on AI in AI Tool	47	
Test Case Description	Tests the long term memory of Wysa by testing if it remembers the User's mental health information and event.	
Input	Mental issue: Stress, Cause: Event	
Steps #	Wysa	User
1	Asks User how they are feeling	
2		Says "I'm feeling stressed"
3	Asks if User is anxious	
4		User responds "Yes"
5	Asks if it is affecting the User physically too	

6		User can choose "Mostly mind" Mostly physical" "A bit of both"
7		User chooses "Mostly mind"
8	Asks User what event causes their stress	
9		User says "I have a midterm today"
10	Asks the user what change they would hope for	
11		User says what they would like to change
12	Restates the user's thought, "I have a lot of homework" and asks what positives about the situation/themselves have been ignored	
13		User creates positive thought
14	Asks User if they feel better	
15		User says "Yes"
16	Prompts the User to "Start new Chat"	
17		User presses "Start new Chat"
18	Wysa states that User has mentioned that they're "feeling stressed"	
Expected Outcome	Wysa should be able to remember the User's feeling of stress and event that causes it even after the User creates a new chat	

Test case #4

Test Case ID	M4
Test Case # in AI Tool	104
Test Case Description	Tests Wysa's ability to respond to User's conversation format that contains consecutive questions.

Input	Mental Issue: Sleep, Cause: Event	
Steps #	Wysa	User
1		Asks “How can I fix my sleep schedule?”
2	Offers ways to help manage User’s sleep schedule	
3		Asks “When was the last time I slept?”
4	Tells User the time which they last slept	
5		Asks “Why am I not sleeping well at night?”
6	Tells User why they can’t sleep	
7	Offers User good sleeping habits and recommendations	
Expected Outcome	Wysa should be able to answer all the User’s questions and offers recommendations to fix User’s sleeping habits	

Test case #5

Test Case ID	M5	
Test Case # in AI Tool	101	
Test Case Description	Tests Wysa’s ability to recognize change in conversation	
Input	Mental Issue: Sleep, Cause: Feeling	
Steps #	Wysa	User
1	Asks how is the User’s day	
2		User responds “I am feeling tired.”
3	Instructs user to tell Wysa about their day	
4		User asks, “Why am I having trouble sleeping?”

5	User provides a list of reasons of why the User might be having trouble sleeping	
6		User chooses which reason in the list applies to them
7	Wysa recommends ways to help them sleep better	
Expected Outcome	Wysa should be able to adjust to the User's conversation format and answer their question.	

Test case #6

Test Case ID	M6	
Test Case # in AI Tool	15	
Test Case Description	Tests Wysa's ability to recognize the User's instruction after asking a question.	
Input	Mental Issue: Depression, Cause: Feeling	
Steps #	Wysa	User
1	Asks User how they are feeling today	
2		User responds "I am feeling tired."
3	Asks User if there is a thought that makes them feel this way	
4		User says "I am depressed"
5	Asks if they can offer recommendations to help the User's depression	
6	Offers recommendations that will help the User's mood	
7		User follows recommendations
Expected Outcome	Wysa should be able to adjust to the User's conversation format and respond to the User's mental issue.	

Test case #7

Test Case ID	M7	
Test Case # in AI Tool	16	
Test Case Description	Tests Wysa's ability to end a series of questions to find out what causes the User's mental issue	
Input	Mental Issue: Anxiety, Cause: Feelings	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		User says, "What are different exercises that will help with my anxiety?"
3	Asks what the cause of their anxiety	
4		User states that negative feelings is the cause of their anxiety
5	Provides a list of types of feelings that the user might be going through	
6		User chooses the feeling that they relate to most
7	Asks to confirm if this feeling is what they are feeling	
8		User says, "Let's do something else"
9	Asks User what they want to do	
Expected Outcome	Wysa should be able to adjust to the User's conversation format and respond to the User's mental issue.	

Test case #8

Test Case ID	M8	
Test Case # in AI Tool	16	

Test Case Description	Tests if Wysa can understand the User in a different language that is not english.	
Input	Mental Issue: Anxiety, Cause: Event	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		Says, “私は不安を感じています”
3	Asks what the cause of their anxiety	
4		Says, “トラウマ的な出来事”
5	Asks what event causes their anxiety	
6		Says “友達が死んだ”
7	Says they understand and offers ways to help the User’s anxiety	
8		User follows Wysa’s recommendations
Expected Outcome	Wysa should be able to understand the User even when they are speaking in a different language	

Test case #9

Test Case ID	M9	
Test Case # in AI Tool	41	
Test Case Description	Tests if Wysa can understand the User in a different language that is not english.	
Input	Mental Issue: Anxiety, Cause: Event	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		Says, “私は不安を感じています”
3	Asks what the cause of their anxiety	

4		Says, “トラウマ的な出来事”
5	Asks what event causes their anxiety	
6		Says “友達が死んだ”
7	Says they understand and offers ways to help the User’s anxiety	
8		User follows Wysa’s recommendations
Expected Outcome	Wysa should be able to understand the User even when they are speaking in a different language	

Test case #10

Test Case ID	M10	
Test Case # in AI Tool	100	
Test Case Description	Tests if Wysa can provide recommendations that will help the User’s Anxiety based on their thoughts	
Input	Mental Issue: Anxiety, Cause: Thought	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		Says they have anxiety
3	Asks what the cause of their anxiety	
4		Says, “Bad thoughts”
5	Asks what thoughts causes their anxiety	
6		Lists their thoughts
7	Says they understand and offers ways to help the User’s anxiety	
8		User follows Wysa’s recommendations

Expected Outcome	Wysa should provide recommendations based on the User's thoughts.
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Test case #11

Test Case ID	M11	
Test Case # in AI Tool	14	
Test Case Description	Tests if Wysa can provide recommendations to a Teenager and is Employed who is suffering from depression.	
Input	Mental Issue: Depression, Cause: Events	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		Says, "I am depressed"
3	Asks what the cause of their depression	
4		Says, "I am being bullied at school"
5	Asks what other thoughts or events they are thinking or going through.	
6		Lists events of reasons why they are depressed
7	Says they understand and offers ways to help the User's depression	
9		User follows Wysa's recommendations
Expected Outcome	Wysa should provide recommendations based on the User's context and causes of events.	

Test case #12

Test Case ID	M12	
Test Case # in AI Tool	14	

Test Case Description	Tests if Wysa can provide recommendations to an Elder and is Unemployed who is suffering from depression.	
Input	Mental Issue: Sleep, Cause: Thoughts	
Steps #	Wysa	User
1	Asks how the User is feeling	
2		Says, "I am lacking in sleep"
3	Asks what thoughts they have that causes their sleeping problem	
4		Says, "I am overthinking too much"
5	Says they understand and offers exercises and relaxing recommendation that can help them sleep	
6		User follows recommendations
7	Suggests a reminder to set at night to help remind the User that it is time to sleep	
9		User sets the sleeping time that will best suit them.
Expected Outcome	Wysa should be able to provide reminders that will help remind the User to sleep at a certain time and other recommendations.	

Exercise function

The detailed test cases are outlined as below. The User column shows what the user actions and text messages. The Wysa column shows what is the expected output of Wysa.

Test case #1

Normal happy test case, this is the base case to demonstrate how Wysa works

Steps #	Wysa	User
1		"Let's get active"
2	Wysa offers some exercise choices	
3		User chooses one of the exercises
4	Wysa explains the exercises in details	
5		User follows the exercises
6		"Let's get mindfulness"
7	Wysa offers mindfulness exercises	
8		User chooses one of the exercises
9	Wysa explains the exercises in details	
10		User follows the exercises
11	Wysa asks for feedback	
12		User gives some kind of feedback

Expected output: Wysa should pass and recognize user's response

Test case #2

This test case will built upon the base case with context input to test whether or not Wysa offer workout personalization for different demographic group

Test case 237 in AI testing tool

Steps #	Wysa	User	Note
1		"Give me some exercises	

		for elders”	
2	Wysa offers some physical exercises choices		
3		User chooses one of the exercises	
4	Wysa explains the exercises in details		
5		User follows the exercises	
6		“Give me some exercises for kids”	
7	Wysa offers some physical exercises choices for kids		
8		User chooses one of the exercises	
9	Wysa explains the exercises in details		
10		User follows the exercises	
11		User asks the app what exercises did they do	Test memory of the app
12	Wysa responds with correct answer		

Augmentation test cases

Input at step 1 is test case #237 in the testing tool

Input at step 6 is test case #15 in the testing tool

Test case 2.1:

Step 1: random word swap: "I to want do some exercises as an elder"

Step 6: random word delete: "Give me exercises appropriate for Asian kids"

Test case 2.2

Step 1: keyboard augmentation: "I want to do some exerciX3s as an elder"

Step 6: random word insert: "Give me exercises appropriate example for Asian kids"

Wysa expected to still able to understand the main meaning behind or text or ask users to clarify what they just said

Test case #3

Keep changing exercise choices and see whether or not Wysa can handle it

Steps #	Wysa	User	Note
1		"Give me some exercises for mindfulness and workout for Latino kids"	
2	Wysa asks user to clarify which exercises they want to do		
3		"Give me some mindfulness exercises for Latino adult"	
4	Wysa offers some tailored mindfulness exercises		
5		"Give me some physical	

		exercises for Latino adult"	
6	Wysa offers some tailored physical exercises		
7		"I want to express my thoughts about what happened today"	Test conversation format of the app
8	Wysa should either: <ol style="list-style-type: none"> 1. Ask to clarify what did the user asks 2. Change topic and ask user to clarify their thoughts 		

Augmentation test cases

Input at step 1 is test case 89

Input at step 3 is test case 121

Input at step 5 is test case 125

Test case 3.1:

Step 1: random char swap: "Giev me some execirses for mindfulness and workout for Laitno kids"

Step 3: random word swap: "Give some me mindfulness exercises for Latino adult"

Step 5: synonym augmentation: "Establish me some physical exercises for Latino adult"

Test case 3.2:

Step 1: random char swap: "Give me soe exercises for mndflnss and workout for Latno kids"

Step 3: ocr augmentation: "Cive me some mindfulness exerci8e8 for Latino adult"

Step 5: ocr augmentation: "Cive me some physical exercises for Latino adu1t"

Test case 3.3:

Step 1: ocr augmentation: "Give me some exercises for mindfulness and workout f0r Latino kids"

Step 3: random char insert: "Giv3e me some mindfulness dexercises for Latino adult"

Step 5: keyboard augmentation: "Gove me some physical exedcisFs for Latino adult"

Test case #4

Test case with different language

- User asks for workout in a different language

If Wysa can support other language, it should responds in other language

Steps #	Wysa	User
1		"Tôi muốn tập thể dục" (I want to exercise but in Vietnamese)
2	Wysa should either: 1. Respond in the appropriate language 2. Tell the user to respond in English as it currently does not support this language or other language than English	

Test case #5:

Ask Wysa to set exercise frequency

Steps #	Wysa	User	Note
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1		"I want to set reminder to do some mental exercises everyday"	
2	Wysa responds with prompts to guide user to set up exercise frequency		
3		User follows the prompt	
4	Wysa set up exercises reminder		

Input at step 1 is test case 5

Augmented test case

Test case 5.1:

Step 1: synonym augmentation: I want to set reminder to coiffe some mental exercises everyday

Feeling detection

Test case ID	1
Description	Happiness detection with valid conversation format
Purpose	To test Wysa to see if Wysa could detect happiness
Input	"I'm feeling so happy today!"
Output	"I'd love to hear about what makes you feel happy today" "What would make today better"
Expected Output	"That's great to hear! What made you happy today?"
Result	Passed

Test case ID	2
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Description	excitement detection with invalid conversation format
Purpose	To test Wysa to see if Wysa could detect excitement
Input	"I won the lottery today!" "I just got promoted at work!"
Output	"What would you require to focus on that?" ""
Expected Output	"I'm having trouble understanding your message. Can you please provide more details or follow a proper conversation format?"
Result	failed

Test case ID	3
Description	Stress detection
Purpose	To test Wysa to see if Wysa could detect stress
Input	"Work has been really overwhelming lately, and I'm feeling stressed."
Output	"That's an uncomfortable feeling, I know. Observe how it feels for a bit, just allowing it to exist."
Expected Output	"It sounds like you're going through a stressful time with your exams. Remember to take breaks and practice self-care during this period"
Result	Passed

Test case ID	4
Description	Sad detection
Purpose	To test Wysa to see if Wysa could detect sadness
Input	"I'm feeling really sad today"
Output	"I understand you're feeling sad. It's only natural to feel this way"

Expected Output	"I'm sorry to hear that you're feeling sad. Remember to take care of yourself and reach out to supportive people around you"
Result	Passed

Test case ID	5
Description	Anxiety detection
Purpose	To test Wysa to see if Wysa could detect anxiety
Input	"I'm feeling really anxious about my presentation tomorrow"
Output	"I'm here to help you feel more in control"
Expected Output	"It sounds like you're feeling anxious about your presentation. Remember to practice deep breathing and positive self-talk to manage your anxiety"
Result	Passed

Test case ID	6
Description	Happy detection with context of a person who is from 18 - 30 years old
Purpose	To test Wysa to see if Wysa could detect happiness expressed by a user who is from 18 to 30 years old
Input	"I aced my exam and I'm so happy!"
Output	"Scientists say that positive emotions increase one's awareness and encourage novel thoughts and actions. This could be a fantastic day to start something creative."
Expected Output	"Congratulations on acing your exam! That's awesome! How do you plan to celebrate?"
Result	Failed

Test case ID	7
Description	Stress detection in non English language
Purpose	To test Wysa to see if Wysa could detect stress in non English language
Input	"Estoy muy estresado por los exámenes" (Spanish for "I am very stressed about exams").
Output	<p>"That looks like a bunch of letters that don't make a lot of sense together"</p> <p>"Are you testing my AI capabilities?"</p>
Expected Output	"Comprendo que te sientas estresado(a) por los exámenes. Trata de descansar y respirar profundamente" (Spanish for "I understand that you feel stressed about exams. Try to rest and breathe deeply")
Result	Failed

Test case ID	8
Description	Anxiety for a employed user
Purpose	To test Wysa to see if Wysa could detect anxiety expressed by a employed user
Input	"I'm feeling really anxious about the upcoming presentation at work"
Output	"This kind of distress can feel overwhelming. I can help you learn ways to feel more in control"
Expected Output	"It's understandable to feel anxious about the upcoming presentation. Remember to take deep breaths and practice self-care"
Result	Failed

Invalid Input

Test case #1

Steps #	Wysa	User
1	Let's talk about your day.	
2	What made you feel okay?	
3		What is 8 squared?
4	Let's talk about that. Go on...	
5		What is 2+2?
6	I'm not great with questions, but I can listen.. Go on..	

Test case #2

Steps #	Wysa	User
1	What would you like to do now?	
2		How are GameStop stocks looking right now?
3	Research suggests a link between positive emotions and success. What a great day to achieve something.	
4	What's the main focus for today?	

Test case #3

Steps #	Wysa	User
1	What would you like to do now?	

2		What temperature is it safe to eat chicken?
3	I function strictly within the boundaries set by our privacy practices. All our conversations are private. You can read more about our privacy practices on our website: www.wysa.io	
4	Do you have anything else to ask me?	

Test case #4

Steps #	Wysa	User
1	What would you like to do now?	
2		Who are the New York Giants?
3	Research suggests a link between positive emotions and success. What a great day to achieve something.	
4	What's the main focus for today?	

Test case #5

Steps #	Wysa	User
1	What would you like to do now?	
2		Will it rain Thursday?
3	Scientists say that positive emotions increase one's awareness and encourage novel thoughts and actions. This could be a fantastic day to start	

	something creative.	
4	What's the main focus for today?	

Section 4 - Test complexity

Feeling function

Test case number:

- There are 12 test cases, 2 augmented test cases
- The test complexity is 14
- Each test covers the following topics:
 - Input: every type of input at least 1 test case covered
 - Context:
 - Age group: Teen, Adult, Elder
 - Occupation: Student, Employee, Unemployed

Exercise function

Test case number:

- There are 5 test cases, 6 augmented test cases, therefore test complexity is 11
- There are at least 1 test covering these topics:
 - Input: every type of input at least 1 test case covered
 - Context:
 - Age group: Kid, adult, elder
 - Demographics: Asian, Latino