

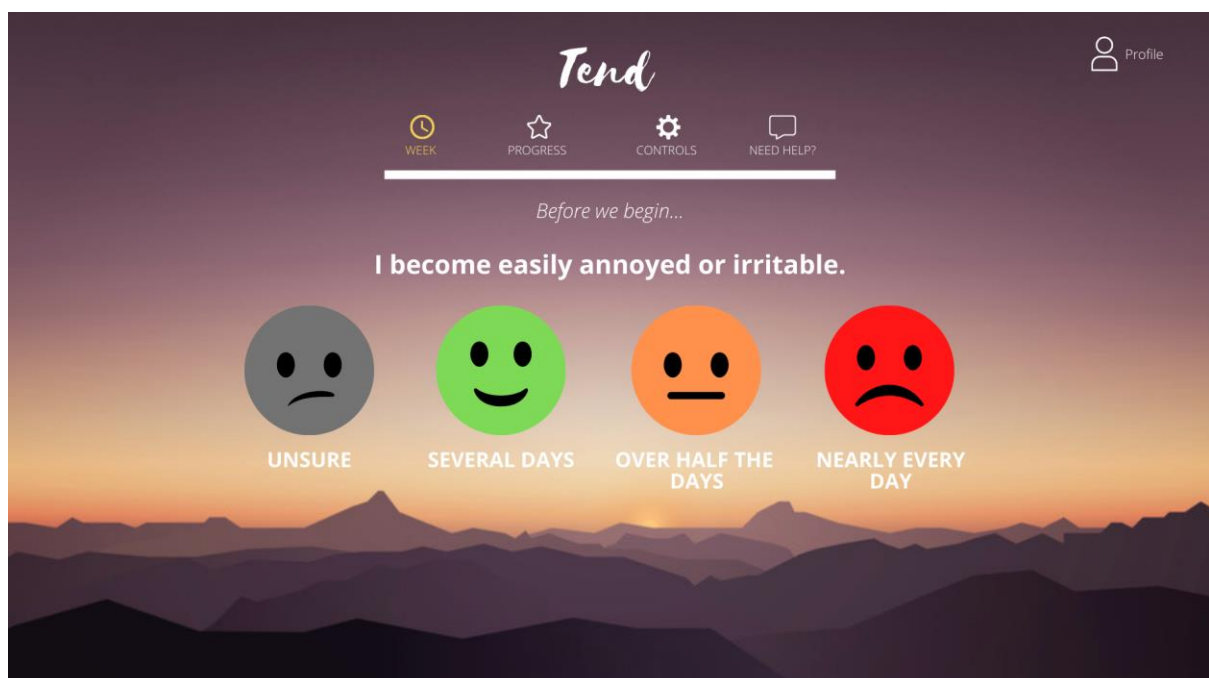
## Mood

### 1. Complete a GAD-7 assessment in Tend

- GAD-7 assessment:
  - Asks the user seven questions

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all sure	Several days	Over half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it's hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3
Add the score for each column	+	+	+	
Total Score (add your column scores) =				

- Scores of 5, 10, and 15 are taken as the cut-off points for mild, moderate and severe anxiety, respectively.
- Need to find a non-intrusive way of asking the user these questions.
  - At the start of a meditation week, display each of the seven statements with the scale in an orderly manner.



- Consider spacing the questions out throughout a meditation session/week so the user doesn't feel overwhelmed by being asked too many questions.
- Potentially ask the user beforehand if they feel comfortable answering questions rather than forcing them to do so.
  - If they choose they don't want to complete it right away, keep a reminder tab for the questionnaire somewhere in the main menu so they can go back whenever they feel like it.
- Suggestions on how to take user answers:
  - **Using the controller triggers**
    - **Pros:** Easy to use, less likely for the user to mis click an answer.
    - **Cons:** Requires the user to move(?)
  - **Looking at an option by pointing the headset towards their answers**
    - **Pros:** The user doesn't have to move their arms
    - **Cons:** Challenging to aim with head
  - **Integrate Google speech API so the user can answer with their voice**
    - **Pros:** Easy to use
    - **Cons:** Room for error with voice recognition

## 2. Complete a short one or two question mood assessment in Tend

- If assessment is too short it might not be enough data to accurately gauge mood.
- If it is too long the user may be frustrated and impatient.
- Questions should be short and simple, possibly based on scales of 1 to 5.
- Questions must be straightforward with no ambiguity - as to not stress the user and make the process quick and easy.
- Quiz could be about thoughts on last week/ 2 weeks.
- Could be used with voice commands, just need to say a number
- NHS mood assessment: <https://www.nhs.uk/conditions/stress-anxiety-depression/mood-self-assessment/>

## 3. Think about ways to use analytics from user activity to assess mood

- **Things you can measure: movement, sound**
- Measure the users movement - looking for restless behaviours such as shaking, fidgeting, pacing. Restless behaviours may indicate anxiety or stress.
- Reaction times to questions/ environment events. Slow reaction time may indicate someone being unable to focus or having a lack of sleep. Some form of minigame might be used to measure this.
- "Colour your mood": The act of pausing to look inward and choose colours and words to describe how you're feeling can be an inspiring, releasing part of your day. The result is a beautiful visual representation of your mood over time.
- Analysing the user's voice: Researchers at MIT have discovered that analysing the spectral and temporal patterns of voice conversations can identify depression or psychological distress.
- Maybe even link the Tend app with external tools and other applications that measure your mood in some way e.g. link Tend to Spotify so it tracks the music you listen to in a day and use this to determine what your mood is on said day

(using something like LastGraph) or link Tend to a mobile diary/journal app that extracts key words from an entry and uses this to determine your mood.

- Emotional stroop test: used as an information-processing approach to assessing emotions. Like the standard Stroop effect, the emotional Stroop test works by examining the response time of the participant to name colours of words presented to them.
- Use headset tracking cameras in some way
  - See how messy someone's room is and use this to determine anxiety levels.
- Can compare the user's behaviour to their previous behaviour using the app

#### **4. Start thinking about how we would integrate Google's voice API into Unity**

- Can use voice API to process speech-to-text, the user can use speech input to use the app. Menu navigation, answering questions etc.
- Speech may be more natural and more comfortable for users
- Speech input should be short to reduce the number of speech-to-text errors
- Possibility of recording short diary entries or memo notes – notes could then be displayed visually in the virtual world.

#### **Ex. Further thoughts on how to drive social 'bragging' about achievements within Tend**

- **Note:**
- Show the percentage of people who have the achievement (i.e. 26% of players have this achievement).
- Show your progress through a tiered achievement (i.e. 16/40 days completed).
- Have tiered achievements, some rarer than others, that yield different rewards.