ASSIGNMENT

Heuristic Evaluation and Prototype Analysis

Course Code: Human Computer Interaction

SUBMITTED BY
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Part A – Project Brief Development

Project Title: MoodVerse – Mood-Based Meme & Music Therapy

Domain Overview

Mood-based digital wellness platforms are becoming increasingly relevant as people seek lighter, instant emotional support. MoodVerse uses real-time facial emotion detection through a browser-based camera interface to deliver curated memes, music, and messages based on the user's mood.

Goal Statement

Users want a quick, fun, and non-intrusive way to lift their mood or feel understood. MoodVerse aims to scan the user's face, detect their emotional state, and provide relevant entertainment (memes, music, jokes, or mini-consultation tips) instantly.

Design Inspiration

- **Current Technologies in the Domain:**
    - **DeepFace** – facial recognition and emotion detection.
    - **Replika AI** – emotional AI companion.
    - **Calm App** – mood-based meditation and mindfulness.
- **Innovations in MoodVerse:**
    - Works entirely in-browser using JavaScript/WebAssembly models (no backend lag).
    - Gamified UI .
    - Offers both fun (memes, jokes) and calm (lo-fi music, breathing guides) options.
- **System Efficiency:**
    - Instant camera-based scanning.

- UI feedback with reaction speech bubbles (e.g., “You look stressed. Chill with this lo-fi.”).
- Minimal clicks—mood > result > action.

Part B – Paper Prototype Design

1. Home Screen: “Let’s Read Your Mood”

- **Description:** Clean white background, MoodVerse logo at the top, big “Start Mood Scan” button in brand color (#F55E61). Beneath that, a live camera view opens once permission is granted.
- **Purpose:** This is the entry point. Users begin the emotion detection here.

2. Mood Result Screen: “Here’s How You’re Feeling”

- **Description:** Emoji + Detected Mood Label (e.g., “Sad”), with speech bubble saying something playful like “Feeling low? Let’s cheer you up!”. Below that: two big buttons—“Show Memes” & “Play Music”.
- **Purpose:** This gives users instant mood feedback and two clear action choices.

3. Meme Result Screen: “Mood Booster Memes”

- **Description:** A scrollable card layout showing 3–5 mood-matched memes (fetched from Reddit). A “Show More” button at the bottom and a “Back to Mood” at the top.
- **Purpose:** Delivers instant humor therapy based on detected emotion.

4. Music Result Screen: “Vibe Match Playlist”

- **Description:** Embedded Spotify widget or dummy card showing a curated playlist (e.g., “Lo-Fi Chill” for stressed mood, “Hype Beats” for angry). One-button “Open in Spotify”.
- **Purpose:** Offers emotion-aligned music instantly to relax or energize.

5. Error/Help Screen: “Oops! Something’s Off”

- **Description:** If the camera isn't detected or permission is denied, show a message like: “We need camera access to read your mood ”. Buttons: “Retry” or “Open Settings”.
- **Purpose:** Gracefully handles issues with user camera permissions.

User Interface

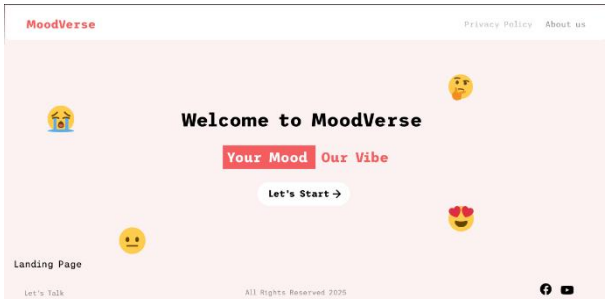

Image: HomePage

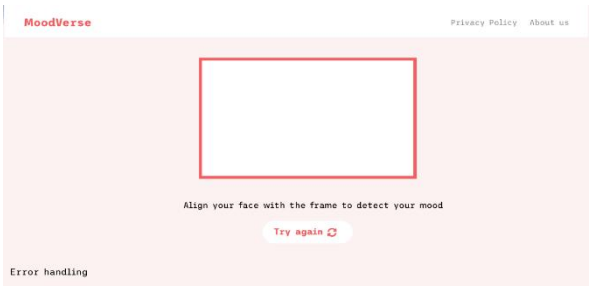

Image: Error Handling

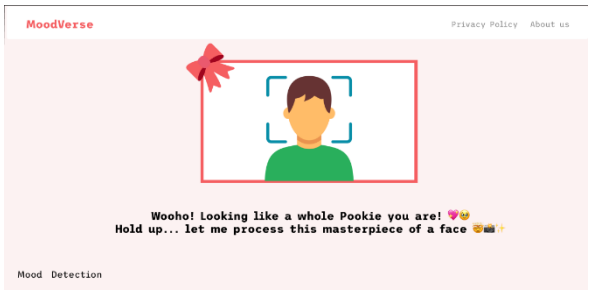

Image: Face Scan

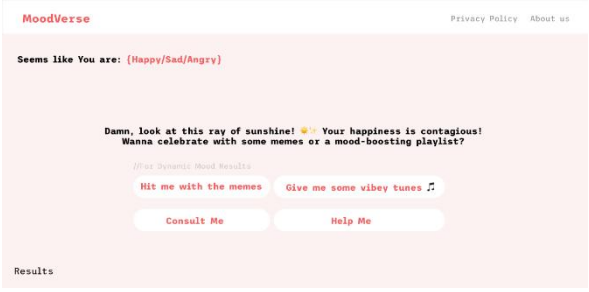

Image: Scan Results

Image: Memes

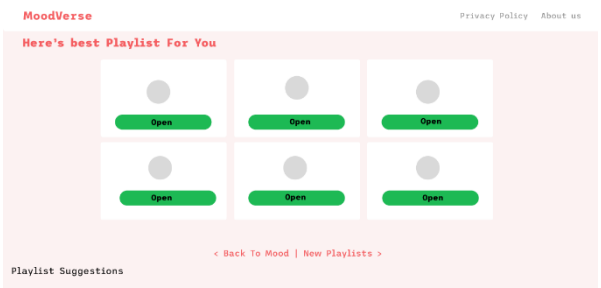

Image: Spotify Playlist

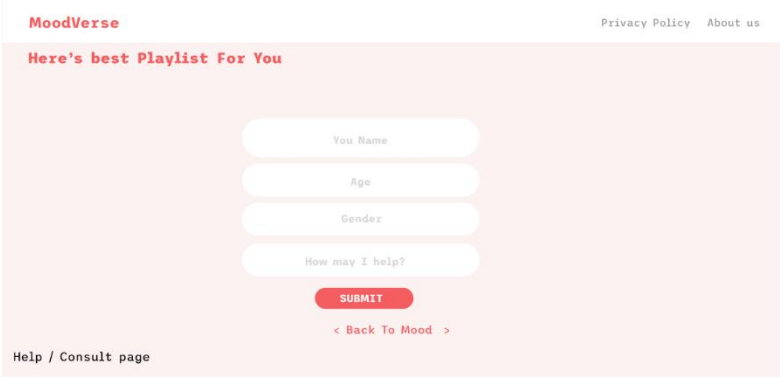

Image: Help/Consult page

Part C – Heuristic Design & Evaluation Plan

1. Custom Heuristic Checklist (Appendix B)

We'll base this off **Nielsen's 10 Usability Heuristics**, but tweak it to fit **MoodVerse** better:

Heuristic Title	Definition	Application in Your UI
Visibility of System Status	The system should always keep users informed about what is going on.	A loading spinner when scanning the face for mood detection, feedback when fetching memes/music.
Match Between System and the Real World	Use words, phrases, and concepts familiar to the user.	Mood labels (e.g., "Sad", "Happy"), emojis, playful text like "Feeling low?" – all natural, human-like.
User Control and Freedom	Users should easily undo or go back.	"Back to Mood" buttons in meme/music screens.
Aesthetic and Minimalist Design	Interfaces should not contain irrelevant info.	Simple, clean UI with just essential buttons (e.g., "Start Mood Scan", "Open").
Help Users Recognize, Diagnose, and Recover from Errors	Clear error messages should explain the issue and suggest a fix.	Camera access and proper camera angle warning.

Task-Based Evaluation Setup (Appendix C)

We'll define 2 real user tasks for testing:

Task 1: Detect Mood and View Memes

- **Goal:** The user opens the app, allows camera access, scans their face, and views suggested memes.
- **Screens Involved:** Home Screen → Mood Result → Meme Result
- **Relevant Heuristics:** Visibility of Status, Match with Real World, User Control

Task 2: Detect Mood and Play Matching Music

- **Goal:** The user scans mood and listens to a matching playlist via Spotify.
- **Screens Involved:** Home Screen → Mood Result → Music Result
- **Relevant Heuristics:** Visibility of Status, Aesthetic Design, User Control

Part D – Heuristic Evaluation Report

Expert Evaluation Table

Screen	Heuristic Violated	Problem Description	Severity (0–4)	Suggestion
Home Screen	Visibility of System Status	No feedback shown during face scan process – user doesn't know if it's working.	3 (Major)	Add a scanning animation or progress indicator.
Mood Result Screen	Aesthetic & Minimalist Design	Mood label and CTA buttons feel slightly crowded on small screens.	2 (Minor)	Increase padding and spacing between elements.
Meme Result Screen	User Control and Freedom	No visible "Back to Mood" button at the bottom – users may feel stuck.	3 (Major)	Add a sticky back button at bottom of screen.
Error Screen	Help Users Recognize and Recover	Message says "something's off" but doesn't clearly state the issue (e.g., camera blocked).	4 (Catastrophic)	Rewrite error with actionable advice: "Camera access denied. Please allow it from browser settings."

Music Result Screen	Match Between System and Real World	Playlist titles may feel generic (e.g., “Mood Mix 01”) and not emotionally specific.	1 (Cosmetic)	Use names like “Chill Vibes for Stress” or “Hype Beats for Anger”.

- Screen: Error / Help Screen
- Heuristic Violated: Help Users Recognize, Diagnose, and Recover from Errors
- Problem Explanation:
- When a user denies camera permission, the system just says "Something went wrong" without clearly identifying the issue. This creates confusion users don’t know whether to reload, change browser, or dig through settings. No retry or next-step is suggested.
- **User Impact:**
- Users may bounce out, think the site is broken, or never complete a mood scan. It breaks trust and flow entirely.
- **Proposed Fix:**
- Display a clear message like:

> “We couldn’t access your camera. To scan your mood, please allow camera access in your browser settings”

- Also include a help link with a 2-step browser-specific guide.

Part E – Reflection

Working on the heuristic evaluation for MoodVerse was a really helpful experience. It showed me how important it is to think about usability when designing an interface. Even a fun and simple app like MoodVerse can have issues that make it harder for users to enjoy or understand if you're not careful.

The evaluation helped me find real problems, like not showing feedback during face scanning or having confusing error messages. Using Nielsen’s usability rules gave me a good way to

check if the design was working well. The rule about helping users understand and fix problems stood out the most. Without a clear error message, users might just leave the site thinking it's broken.

One challenge I faced was switching between the role of designer and evaluator. Since I made the design, it was hard at first to notice the mistakes. But once I pretended to be a new user, I started spotting issues that I hadn't thought of before.

The feedback I got from the evaluation was very useful. I updated the error screen to give better instructions and changed the layout on the mood result screen to give things more space. This made the design feel easier to use, especially on mobile screens. I also learned that while a clean design looks nice, it still needs to give users the information they need right away.

In real-world projects, heuristic evaluations save time and effort. They can be done early in the design process and still find big issues, even without needing real users to test. Experts like Jakob Nielsen say that just a few evaluators can find most usability problems, which makes this method really practical.

Overall, doing this project helped me understand how to improve a design by thinking like a user. It reminded me that good design isn't just about how something looks. It's about how easily someone can use it and feel confident doing so.

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Part F – Research Insight

1. Theoretical Understanding

Heuristic Evaluation is a usability inspection method where evaluators examine a user interface to assess its alignment with established usability principles, often called heuristics (Nielsen, 1994). It's fast, cost-effective, and doesn't require real users. The most well-known set of heuristics was proposed by Jakob Nielsen in 1994, covering principles like visibility of system status, consistency, error prevention, and more.

On the other hand, Cognitive Walkthrough is a usability method that focuses on task-based analysis. Evaluators step through user actions to check if a new user can easily learn and complete tasks within the interface. While heuristic evaluation addresses general usability, cognitive walkthrough centers on the learnability of the system .

Heuristic evaluation is typically used in the early stages of design to identify obvious usability issues. Cognitive walkthroughs are better for evaluating whether a new user can learn to navigate the interface on their own. Both methods complement each other, and using them together during the UX design process provides a more thorough evaluation.

2. Practical Insight

While working on the **MoodVerse** prototype, one challenge was adapting abstract heuristics to a playful, Gen-Z-focused UI. Some heuristics, like consistency and user control, needed to be reworded to align with the system's tone while maintaining core usability principles.

For the evaluation, we used a paper prototype initially and then moved to digital UI creation with tools like Figma. Documentation and analysis were supported by ChatGPT, and formatting was done in MS Word. These tools were crucial. Figma allowed for quick iterations, while AI helped structure our evaluation process efficiently.

Ultimately, heuristic evaluation proved to be simple yet powerful especially when applied early in the design process.