GROUP 20

INTERNET PROGRAMMING AND MOBILE PROGRAMMING

CEF440

COURSE INSTRUCTOR

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GROUP 20

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TASK 5:

UI DESIGN AND IMPLEMENTATION

INTRODUCTION:

This task focuses on the design and implementation of the user interface for the **NetPulse** mobile app. Building on system models developed in Task 4, this task brings the app to life through visual design and front-end development. It covers the creation of the app's identity, layout of key screens, and implementation of interactive components to ensure a smooth and user-friendly experience for collecting network feedback.

1. **App identity:**
   The identity of **NetPulse** app is design to reflect its core function- giving users a voice in their mobile network experience. It combines visual simplicity with clear usability.
   App name: **NETPULSE**
   Logo: A letter N designed with a circuit-line pattern to represent technology, connectivity and networks.
   Colour palette:
   - ✓ Primary colour **light cyan blue**(#33CCFF) which gives cool, trustworthy and digital-feel.
   - ✓ Background colour **white** for readability.

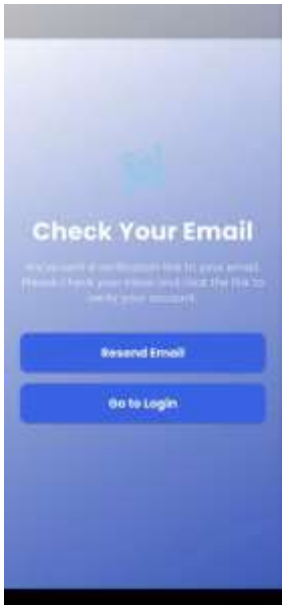
   Typography:

   - ✓ Logo font: Orbitron
   - ✓ Tone & Style**:** Clean, modern, and mobile-optimized, with a friendly and tech-savvy appearance.
2. **Visual Design:**
   The app's visual design was carefully planned to guide users through core functions like giving feedback and viewing network status. The layout was created in Figma before implementation.

Key Screens:

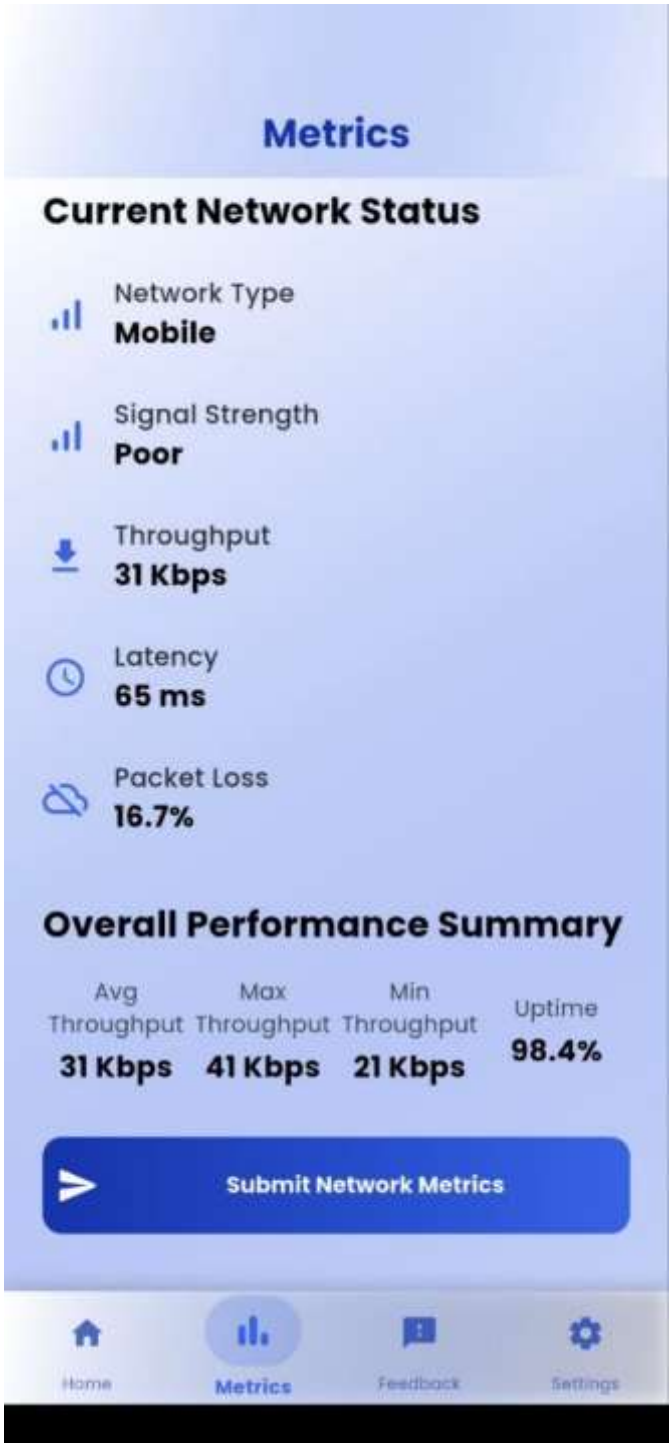
- ✓ **Splash screen:**
  - Displays Logo and app's Slogan:*" One App, all the network gist"*
  - Short loading animation

- ✓ **Sign-Up/Sign-In:**
  - Minimal form: E-mail, phone number and password.
  - Option to skip phone number.
  - Verification link to E-mail

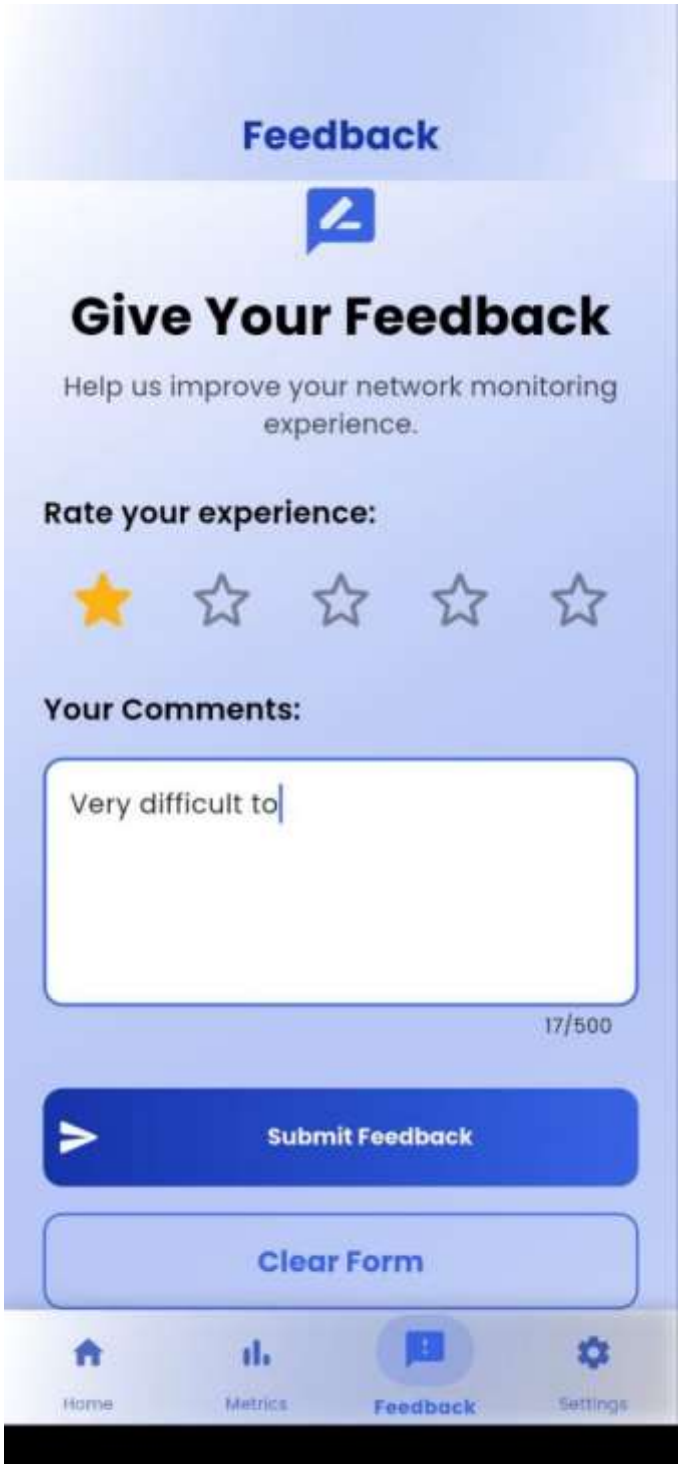


- ✓ **Home dashboard:**
  - Network pulse: shows ISP, throughput trend with time.

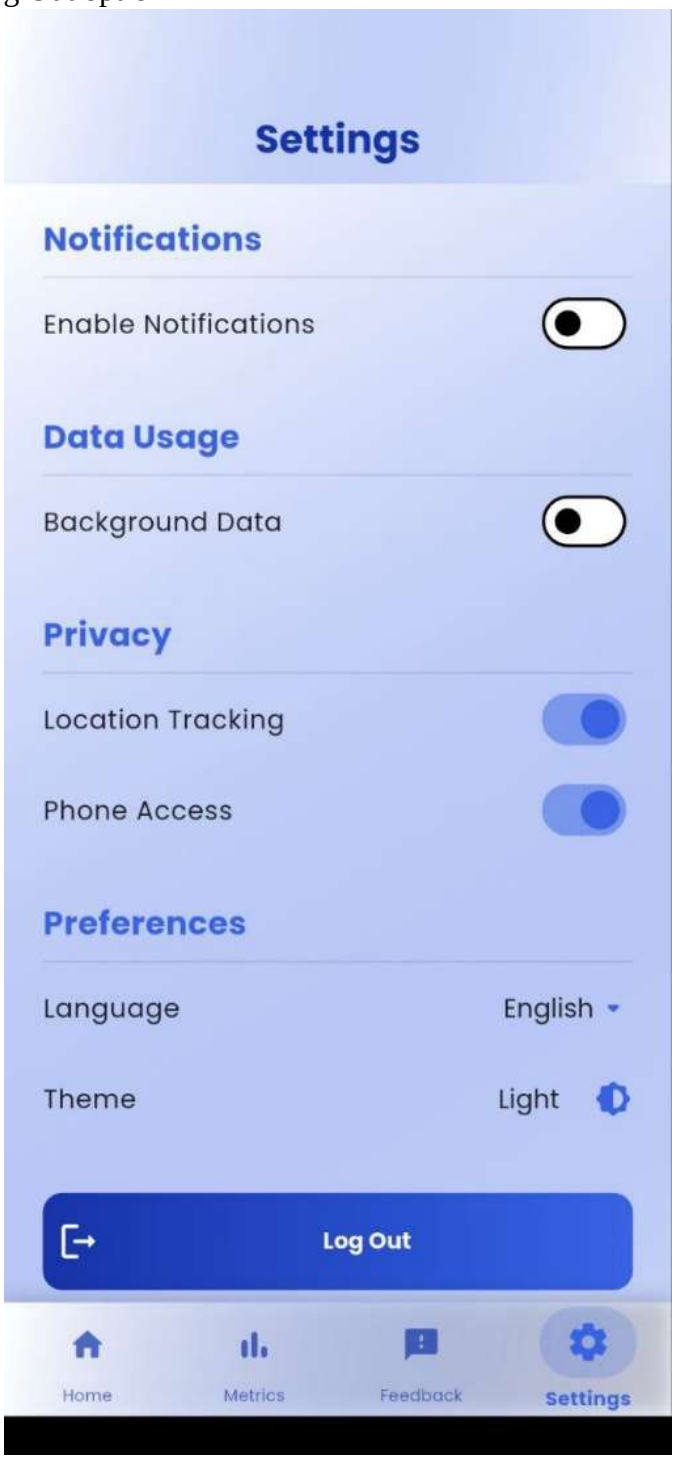
- ✓ **Network metrics screen:**
  - Shows network status (network type, signal strength, throughput, latency and packet loss.
  - Overall performance summary
  - Submit button.



- ✓ **Feedback screen:**
  - Star based ratings for overall network metrics satisfaction.
  - Text box for comment.
  - Submit button.



- ✓ **Setting screen:**
  - Notification configurations
  - Data usage
  - Privacy: Users have the right to enable location tracking and phone access
  - Language and theme setting
  - Log Out option



- ✓ To add: **History screen:**
  - List of past feedback.
  - Includes timestamps and network info.

3. **Front-End Implementation:**
   - ✓ **Tools and technologies:**
     - **Frame work:** Flutter
     - **Language used:** Dart
     - **Design:** Figma
   - ✓ **Implementation steps:**
     - Created reusable components for buttons, input fields, and cards
     - Applied consistent theming using a global style sheet
     - Used responsive layout features to support various screen sizes
     - Built navigation logic for switching between screens
     - Integrated input validation for feedback form
   - ✓ **Challenges faced:**
     - Network challenges for getting packages
     - Packages mismatched with flutter version
     - Packages such as *sim_card_plus* which are no longer maintained and supported
     - Other packages such as *sim_card_info* for sim detection.

CONCLUSION:

The UI design and implementation of the **Net Pulse** app provides users with a clear, intuitive, and engaging platform to share their network experience. The user interface closely follows the system design from Task 4 and effectively delivers the core features in a user-friendly way. This task represents a major step toward the full realization of the app's functionality and impact.

Appendix:

github.com/kurocifer/Netpulse for code snippets

NETPULSE – Figma for Figma design and prototype

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