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Cyber Security Awareness Game

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ABSTRACT - This review paper explores the development of an Android-based Cyber Security Awareness Game aimed at educating users about digital threats through interactive gameplay. In a world where cyber-attacks are increasingly common, the application uses quizzes, Lottie animations, and a game-like interface to teach users about topics like phishing, malware, password safety, and data protection. The app is built using Android's XML and Java architecture, and includes engaging UI elements to enhance the learning experience.

Keywords: Cybersecurity, Android, Quiz Game, Awareness, Lottie Animation, UI Design, Game Interface, Data Safety.

1. INTRODUCTION

As technology evolves, so do cyber threats, making cybersecurity awareness a critical area of focus. Traditional learning methods often fail to engage users, especially younger audiences. To address this, we developed an Android-based mobile application that gamifies cybersecurity education. With the support of a game-style interface and attractive animations, users are encouraged to explore various cybersecurity concepts through interactive quizzes. The app is designed for accessibility, engagement, and real-world application of security practices. The rapid digitization of our daily lives has exposed users to a variety of cyber threats, from phishing and malware to identity theft and social engineering. While businesses often invest in cybersecurity infrastructure, end users, especially students and non-technical individuals, lack awareness and training. This project aims to solve that gap by creating an Android-based game that teaches cybersecurity concepts through fun and engaging means. Leveraging the wide reach and flexibility of the Android platform, the game educates users on digital safety, encouraging real-life behavioral change.

Fig 1 First Page of game

2. GAME DESIGN AND FEATURES

The application features a quiz-based system where users answer cybersecurity-related questions to earn points and unlock levels. Each quiz category includes questions on phishing, malware, password strength, secure browsing, and social engineering.

Key Features:

Interactive Multiple-Choice Quizzes

Dynamic Lottie Animations on answer feedback

Progress Tracking and Rewards

Background Music and Game-like

2.1 Levels and Topics

The Cyber Security Awareness Game is divided into three levels, each focusing on key areas of cybersecurity. As players progress, the difficulty and complexity of topics increase:

Level 1: Password Security (Easy)

This level introduces the basics of creating strong and secure passwords. Users learn about the risks of using common passwords, the importance of password uniqueness, and the benefits of using password managers.

Level 2: Phishing & Safe Browsing (Medium)

This level combines awareness about phishing scams and safe browsing habits. It teaches users how to identify fraudulent emails, suspicious links, and look-alike websites, while also promoting caution when using public Wi-Fi and visiting unsecured websites.

Level 3: Social Media & Software Safety (Hard)

The final level covers advanced topics like securing social media accounts and understanding the importance of software updates. Players learn about privacy settings, oversharing risks, and how outdated software can expose devices to cyber threats.

Fig 2 Multiple levels in game

3. TECHNICAL IMPLEMENTATION

3.1 Android Architecture (Java + XML)

The app uses the Java programming language to control game logic and activity lifecycle, while XML is used for layout design, defining buttons, text views, images, and animation containers. The structure includes:

Activities and Fragments for game screens.

Intents for navigation between quiz levels.

Custom Adapters for dynamic UI elements like leaderboards.

3.2 Lottie Animation Integration

Lottie is a powerful library that renders Adobe After Effects animations in real time. In our app, animations are triggered:

When a question is answered correctly or wrongly.

During level completion.

On app start and end screens. These animations improve user engagement and add a polished look to the game.

4. Login Screen

This is the Secure Login interface of the Cyber Security Awareness Game application. The screen is designed with a modern, dark-themed UI to give a professional and secure feel, appropriate for a cybersecurity-focused application.

- At the top, the tagline "Join our secure network" invites users to enter a safe digital environment.
- The central shield icon visually represents protection and security.
- Below, the text "Protect your digital identity" reinforces the app's purpose and encourages trust.
- Two input fields are provided for Username and Password, maintaining a clean layout with placeholder hints.
- A visibility toggle icon allows users to view or hide their password for convenience.
- A message stating "Encrypted connection" reassures users that their credentials are protected during transmission.
- The AUTHENTICATE button is prominently displayed in a glowing cyan color, drawing attention for user interaction.
- Additional options like "Forgot credentials?" and "Use biometric authentication" enhance usability and accessibility, offering secure alternatives.
- The footer includes copyright information: © 2023 Secure Systems Inc.

This screen sets a strong foundation for secure user authentication, aligning with best practices in cyber awareness and data protection.

Fig 3 Login screen for game

5. CYBERSECURITY TOPICS COVERED

The game covers real-world cybersecurity topics simplified for general users:

Recognizing phishing emails

Creating strong passwords

Safe browsing habits

Importance of software updates

Avoiding suspicious links and downloads

6. CYBERSECURITY CONTENT DEVELOPMENT

The quality of the content is central to this application. All quiz questions and feedback tips are created based on:

Guidelines from cybersecurity organizations like OWASP, CERT, and Cyber Safe India.

Real-world examples of cyber attacks.

Age-appropriate scenarios, especially for students and young users.

Questions are regularly updated to reflect current cybersecurity trends such as:

AI-generated scams

Multi-factor authentication (MFA)

Zero-trust networks.

7. USER INTERFACE & GAME ENVIRONMENT

5.1 UI Theme

The app is designed with a cyberpunk-style theme, featuring:

Neon blue and green gradients

Code-like fonts

Hacker-style animations This makes the app feel like a hacking game, grabbing the user's attention instantly.

5.2 Sound Design

Notification sounds for correct/wrong answers.

Background music to create suspense and energy.

Mute option available for accessibility.

5.3 Navigation & Responsiveness

Fully responsive layouts using ConstraintLayout.

Compatible with both phones and tablets.

Accessible design: High contrast colors and large font options.

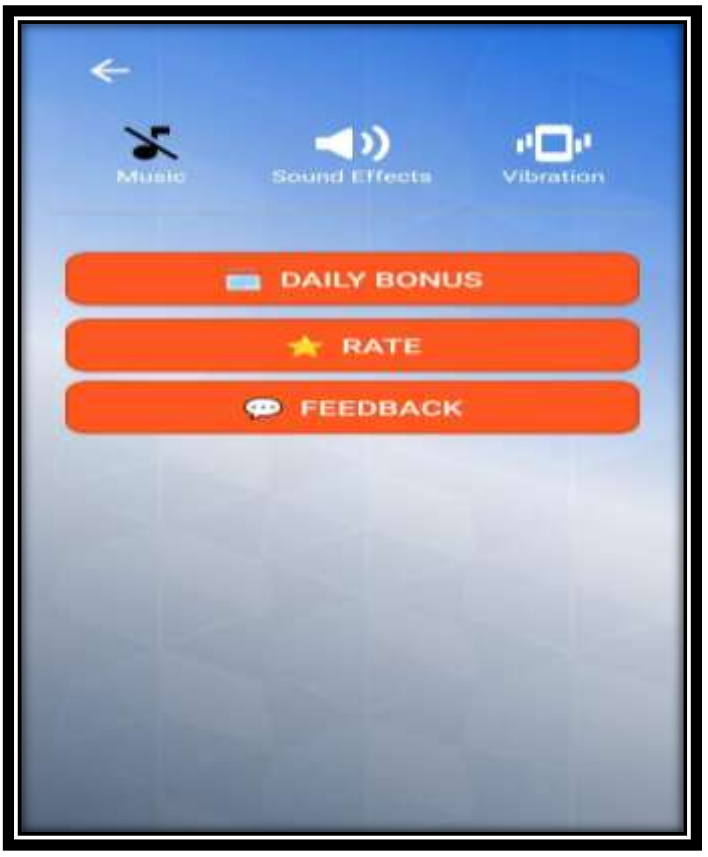

Fig 4 Game Setting

8. IMPACT & LEARNING OUTCOME

The main goal of the app is to make users aware of threats and equip them with best practices for staying safe online. In trials, users reported:

Better understanding of phishing and fake links.

Increased use of two-factor authentication.

Awareness of app permissions and data privacy.

The gamified structure ensures higher retention compared to traditional tutorials. The app can also be used in schools, colleges, and by NGOs promoting digital literacy.

9. CONCLUSION

The Cyber Security Awareness Game proves that education can be both effective and enjoyable when combined with the right technology. Built using Android, Java, XML, Firebase, and Lottie, the app transforms cybersecurity knowledge into a dynamic, gamified experience. As cyber threats evolve, this kind of tool can play a vital role in equipping users with essential defense skills in a simple, engaging format. In conclusion, the Cyber Security Awareness Game is a creative and effective way to teach users about online safety. It turns traditional learning into a fun and engaging experience using quizzes, animations, and a game-like interface. Built using Android tools like Java, XML, Firebase, and Lottie animations, the app runs smoothly and looks attractive. It not only helps users understand common threats like phishing and malware but also encourages safe online habits. With its flexible design, the app can be easily updated in the future to add more topics,

languages, or even multiplayer features. As digital life becomes a big part of everyday routines, this game plays an important role in building awareness and helping users, especially the younger generation, become smarter and safer on the internet.

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