PANIMALAR ENGINEERING COLLEGE
An Autonomous Institution

[JAISAKTHI EDUCATIONAL TRUST]

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Bangalore Trunk Road,Varadharajapuram, Poonamallee, Chennai- 600 123

TECHDIVATHON

Empower, Innovate, Elevate: Code the Future Together

Domain: CYBERSECURITY

Problem Statements:

S.No.	Title	Problem Statement	Description
1	Portable Anti-Malware USB Scanner	Develop a USB device to scan and remove malware from external drives.	This portable USB scanner actively detects and removes malicious files from external drives, ensuring they are safe for use without relying on traditional antivirus software.
2	Encrypted External Storage Drive	Create a secure external storage device with hardware-level encryption.	This device provides robust encryption at the hardware level, requiring authentication (e.g., PIN, fingerprint) to access stored data, ensuring security even if the device is lost or stolen.
3	Secure IoT Smart Lock	Design a smart lock that uses biometric authentication and encrypted communication.	This IoT-enabled lock combines biometric verification (e.g., fingerprint, facial recognition) with encrypted communication protocols to prevent unauthorized access.
4	IoT Firewall for Smart Homes	Build an IoT firewall to block unauthorized access to smart home devices.	This hardware firewall monitors incoming and outgoing traffic to smart home devices, blocking suspicious activities and ensuring IoT device security.
5	Biometric Password Vault	Develop a vault for securely storing passwords, accessible via biometric authentication.	This device stores passwords securely, requiring biometric verification (fingerprint, face) for access, ensuring convenience and security while reducing the risk of reused or weak passwords.
6	Encrypted Mobile Charging Cable	Design a charging cable that prevents data theft during device charging.	This cable isolates charging and data lines, preventing unauthorized data transfer (juice jacking) while ensuring safe power delivery.
7	Personal Data Privacy Shield Device	Create a device that monitors and blocks unauthorized wireless signals targeting personal data.	This shield detects and blocks unauthorized wireless signals, ensuring personal information remains private and secure in public spaces.
8	Wi-Fi Vulnerability Detection Sensor	Develop a sensor that identifies weak security settings in Wi-Fi networks.	This sensor scans networks to identify vulnerabilities like open ports or weak encryption, providing actionable suggestions to enhance security.

9	Portable Device for Network Traffic Analysis	Build a portable device to analyze network traffic and detect threats.	This compact device captures and analyzes network traffic patterns, helping to detect anomalies and ensuring network security on the go.
10	Secure USB File Transfer Device	Create a USB device for secure file transfer between systems.	This device encrypts files during transfer, ensuring data integrity and security even if the files are intercepted.
11	AI-Powered Phishing Email Detection	Develop software to identify and flag phishing emails in real time.	This software uses AI to analyze email content and detect suspicious links, patterns, and behaviors, helping prevent users from falling victim to phishing scams.
12	Mobile App for Cyber Hygiene Education	Design an app that teaches users best practices for cybersecurity.	This app educates users on cybersecurity through interactive lessons, tips, and quizzes covering topics like password safety, phishing recognition, and secure browsing habits.
13	Secure Cloud Password Manager	Create a cloud-based password storage application with biometric authentication.	This app securely stores passwords in an encrypted cloud environment, accessible only through biometric authentication, ensuring robust security and user convenience.
14	Network Threat Detection Dashboard	Develop a dashboard to monitor and identify threats in network traffic.	This software provides a user-friendly interface to monitor traffic, detect anomalies, and provide real-time insights into potential threats.
15	Digital Privacy Awareness Game	Create a gamified platform to teach cybersecurity concepts.	This game educates users by simulating real-world cybersecurity challenges, helping them learn preventive measures in an engaging and interactive way.
16	AI-Based Ransomware Protection Tool	Build software to prevent ransomware attacks using real-time AI analysis.	This tool analyzes system behavior in real-time to detect and isolate ransomware threats, preventing malware from encrypting files or demanding ransom.
17	Secure Messaging App	Develop an app ensuring private communication through end-to-end encryption.	This app ensures that all communications remain private by using end-to-end encryption, protecting messages from unauthorized access.
18	IoT Device Monitoring Platform	Create a platform to monitor and secure IoT devices.	This platform tracks device activity, detects vulnerabilities, and alerts users about potential risks, ensuring comprehensive IoT security.
19	Wi-Fi Security Enhancement Tool	Develop software to suggest actions for securing Wi-Fi networks.	This tool scans network configurations, identifies weaknesses, and provides actionable recommendations to enhance security.
20	Browser Extension for Safe Online Shopping	Create an extension to warn users about fraudulent shopping sites.	This extension uses real-time analysis to flag untrusted sites, ensuring users can shop safely online without exposing sensitive information.
21	Wearable Cybersecurity Device	Design a wearable device to detect and alert users about unauthorized data access.	This wearable monitors nearby wireless signals for suspicious activity and provides real-time alerts to ensure personal data security.

22	AI-Powered Smart Router	Build a smart router to block threats and provide a secure browsing dashboard.	This router integrates AI to identify malicious traffic, quarantine affected devices, and provide users with a dashboard for monitoring network health.
23	Personal Digital Security Assistant	Create a wearable device that alerts users about risks on public networks.	This wearable scans public Wi-Fi networks for vulnerabilities and alerts users to potential threats, providing actionable security suggestions.
24	IoT-Enabled Home Cybersecurity Hub	Develop a device and app combo to manage smart home security.	This hub integrates with IoT devices, monitoring security and providing users with real-time alerts and management options via an app.
25	Cybersecurity Training Simulation Kit	Build a kit combining software tools and hardware for cybersecurity training.	This kit offers hands-on cybersecurity training scenarios using hardware and software tools, teaching students and professionals how to identify and mitigate threats effectively.