Sri Lanka Institute of Information Technology

PROJECT REGISTRATION FORM

(This form should be completed and uploaded to the Cloud space on or before XXXXXXXXX)

The purpose of this form is to allow final-year students of the B.Sc. (Hon) degree program to enlist in the final-year project group. Enlisting in a project entails specifying the project title and the details of four members in the group, the internal supervisor (compulsory), the external supervisor (may be from the industry), and indicating a brief description of the project. The description of the project entered on this form will not be considered as the formal project proposal. It should however indicate the scope of the project and provide the main potential outcome.

PROJECT TITLE (As per the accepted Topic Assessment Form)	Blockchain Based Criminal Information Management System in Sri Lanka
RESEARCH GROUP (As per the Topic Assessment Form)	Information Security
PROJECT NUMBER	TMP-23-270 (Will be assigned by the RP Team)

PROJECT GROUP MEMBER DETAILS: (Please start with the group leader's details)

	STUDENT NAME	STUDENT NO.	CONTACT NO.	EMAIL ADDRESS
1	Leader: Brahanawardhan B	IT20150952	077 310 8209	it20150952@my.sliit.lk
2	Member 2: Wijayaratne S. N	IT20171438	077 720 7753	it20171438@my.sliit.lk
3	Member 3: Thushitharan M	IT19983370	077 930 1132	It19983370@my.sliit.lk
4	Member 4: Ahmed M.N.H	IT20157814	077 963 5100	it20157814@my.sliit.lk

SUPERVISOR, CO_ SUPERVISOR Details

SUPERVISOR Name	CO-SUPERVISOR Name
Mr. Kanishka Yapa	Ms. Dinithi Pandithage

EXTERNAL SUPERVISOR Details (if any, may be from the industry)				
				Attach the email as Appendix 3
Name	Affiliation	Contact Address	Contact Numbers	Signature/Date

ACCEPTANCE BY CDAP MEMBER (This part will be filled by the RP team)		
Name	Signature	Date

PROJECT DETAILS

Brief Description of your Research Problem: (extract from the topic assessment form)
The increasing number of criminal activities has led to a need for a more efficient and secure system for managing criminal information. According to our analysis, Major problem in our country is maintaining criminal information records in paper basis and one of the key challenges facing the current criminal information management system is the lack of transparency, security, and immutability in the storage and dissemination of information. This has led to numerous data breaches and unauthorized data modification causing significant damage to both individuals, organizations, and government. Blockchain technology has the potential to provide a secure and transparent solution for criminal information management. A blockchain based criminal information management system can use decentralized ledgers to store criminal records, ensuring that the information is secure and tamper-proof. The use of smart contracts can also automate the process of updating and accessing the information, reducing the potential for human error. This system can also provide a secure and transparent platform for sharing criminal information between law enforcement agencies and other relevant. Stakeholders, improving collaboration and coordination in the fight against crime. In conclusion, a blockchain based criminal information management system is a promising solution for improving the efficiency, security, and transparency of criminal information management. This research will contribute to the development of a secure and efficient platform for managing criminal information using Blockchain technology, which can have a significant impact on the criminal justice system and the fight against crime.

Main expected outcomes of the project: (extract from the topic assessment form)
our team expected to be proposing Blockchain based technology for a criminal information management system called "CRISYS". Blockchain can take the position of the accumulation of criminal records with a network where criminal records information is easily accessible within the organization, secure, and it cannot be altered. A P2P (peerto-peer) network called blockchain aids in the decentralization of criminal Records, as a result, to maintain a ledger to prevent a single point of failure (SPOF), and all the criminal records will be updated and validated in real-time. Because they are easily accessible and unbreakable, decentralized networks with straightforward algorithms are safe and cryptographically secured. Blockchain's peer-to-peer network facilitates the sharing of information within organizations. To ensure criminal records' confidentiality and integrity, this system will be built on the immutability feature of blockchain. By developing this blockchain-based system, the corruption of risk factors can be reduced. allowing greater objectivity and consistency and improving the transparency and accountability of criminal records. Real access at the right time to Criminal histories with appropriate administrative agencies to improve policy and law enforcement effective. The main objective of a blockchain based criminal records management system is to provide a secure, transparent, and tamper-proof platform for storing and managing criminal records. The use of blockchain technology can ensure that the records are stored in a decentralized and distributed manner, which makes them more secure and resistant to tampering or unauthorized modification. Additionally, a blockchain based criminal records management system can also help to improve the efficiency of the criminal justice system. By having all criminal records stored in a centralized and easily accessible platform, law enforcement agencies, courts, and other relevant organizations can quickly and easily access the information they need to make informed decisions.

WORKLOAD ALLOCATION (**extract from the topic assessment form after correcting the suggestions given by the topic assessment panel.**)

(Please provide a brief description of the workload allocation)

MEMBER 1	Implementing smart contract between criminal information management system and blockchain technology (Blockchain Development).
Implementing smart contract for blockchain network according to the Sri Lanka Personal Data Protection Act (PDPA) under the framework the confidential criminal records deploy with Blockchain decentralized ledgers. This will ensure the confidentiality, Integrity, and Availability of criminal Records. developing smart contracts for criminal records to validate confidentiality, Integrity, Availability, minimize interoperability problem when identifying criminal records and ensure privacy and security of criminal records.	

MEMBER 2	Implementing Multi-Factor Authentication system for the Blockchain based Criminal Information Management System
In the existing 2FA systems or Multi-Factor Authentication system, there are security breachers that could happen and have happened. The users might not always have the required devices with themselves to complete the authentications. This proposed system, will be using encryption and blockchain to handle the user logins (username and password) as the 1st factor for the authentication and as the 2nd factor it will use a one-time password (OTP) of a length of 6 characters, and this will include digits, letters, and special characters. With the advancement of computation technology, a pin number of 6 digits could be cracked under several seconds with the proper computing power. By implementing an updated algorithm related to Hashed Message Authentication Code (HMAC) and by implementing blockchain I will be improving the security of the OTPs that will be receiving as the 2nd factor. After successfully completing both the 1st and 2nd factor, the user will have to face the 3rd factor, and that will be a facial recognition with a unique, randomly generated passcode that is provided to the user that changes once every 5 days	

MEMBER 3	

MEMBER 4	Implementing secure file management system in decentralized network
In Sri Lanka existing criminal information management system need to manage massive amount of criminals' data. To manage the criminal files and records in the current approach in Sri Lanka is not fulfill the requirement it causes some drawbacks such as unauthorized access to criminal records, lack of privacy concerns to minimize these issues I'm going to develop the Secured file system for blockchain based criminal information management system by implement IPFS (Interplanetary File System) for decentralize network. because of my solution it ensure the confidentiality, integrity and availability of the criminal's evidence and data.	

DECLARATION (Students should add the Digital Signature)

"We declare that the project would involve material prepared by the Group members and that it would not fully or partially incorporate any material prepared by other persons for a fee or free of charge or that it would include material previously submitted by a candidate for a Degree or Diploma in any other University or Institute of Higher Learning and that, to the best of our knowledge and belief, it would not incorporate any material previously published or written by another person in relation to another project except with prior written approval from the supervisor and/or the coordinator of such project and that such unauthorized reproductions will construe offences punishable under the SLIIT Regulations.

We are aware, that if we are found guilty for the above mentioned offences or any project related plagiarism, the SLIIT has right to suspend the project at any time and or to suspend us from the examination and or from the Institution for minimum period of one year".

	STUDENT NAME	**STUDENT NO.**	**Signature**
1	Brahanawardhan B.	brahanawardhan	4/19/2023
2	Wijayaratne S. N		4/19/2023
3	Thushitharan M		
4	Ahmed M.N.H	Haseef Ahmed	4/19/2023

Appendix 1 :

Appendix 2 :