

ihack

4.0

ISACA Student Group
University of Colombo School of Computing

ISACA[®]
UCSC Student Group



Registration proposal for iHack 4.0

1) Competition layout & rules for iHack 4.0

Participant Registration

- All participants are required to show their Institutional ID to prove their studentship.
- The minimum number of members for a team is 3 and the maximum is 4.
- One person can represent only one team.
- All teams must submit their proposal as per the given template at the specified date and the proposal should not exceed 3 pages in full.
- A team can be consisted of members from different universities. But such team can only represent one university.

Competition Layout

- Submitted proposals will be evaluated by a panel of senior academics and professionals from the industry to select the participant teams for the hackathon.
- All selected teams are required to be present at 8.00 am on the 6th of October for pre-event briefing and the hackathon will begin at 9.00 am.
- There will be two hackathon process reviews for each team conducted by General. Mentors from General will be assigned to each team.
- On the 6th of October, each team is required to provide a 5 minutes interim presentation followed by 5 minutes Q&A and feedback for their creation.
- At 9.00am on the 7th of October, the hackathon will end and each team is required to provide a 15 minutes final presentation followed by 5 minutes Q&A of their product to the panel of judges.

Guidelines

- All teams are expected to submit their proposals according to one of the given scenarios at the time of registration as per the given template. Several broad scenarios have been given to allow teams the flexibility to be innovative.
- The teams with the most innovative & practical solutions will be informed by the organizing committee of their selection by email with the deadline for confirmation of participation. If a team does not confirm their participation within this period, the place will be extended to the next team on the ranking.
- Innovativeness of the solution and workability are key criteria for evaluation, however, the business plan & value proposition, beneficiary/user experience as well as feasibility of implementing will also be considered in evaluation. (An innovative solution would provide a practical and realistic benefit). Where the case is not profit oriented; practical deployment & promotion may substitute the business plan & marketing plan.
- You are advised to identify a specific & practical scope based on the scenario selected considering the time constraints since the utility and benefit of the application may not always depend on the breadth of the scope.
- All ideas presented will be published online, on completion of the event and proposals as well as creations will be screened to ensure originality.
- **Project domain should not be including any electronic devices because this hackathon based on only software development among university students.**
- You should not at any part of the proposal; mention the names of your university or the names of any members of your team.
- The security of the proposed solution will be highly considered during the evaluation process.
- The filename of the uploaded proposal .pdf should have the date of registration and team name in the format <dd-mm-yy_team>.

2) Scenarios

Teams are required to select a given case and develop a proposal for a solution of their solution as per the provided proposal template and submit it before the deadline. You are advised to maintain a broad perspective in evaluating the case to identify an area to address and on selecting the area, to specify the scope appropriately to enable you to provide a practical output.

1. Good health and well-being

There are limited accounts of community based interventions for reducing distress or providing support for people with common mental disorders (CMDs) in low and middle-income countries. Access to healthcare services is critical to good health, yet rural residents face a variety of access barriers. A 1993 National Academies report, *Access to Healthcare in the world*, defined access as the timely use of personal health services to achieve the best possible health outcomes. Rural communities have long struggled to maintain access to quality health care services. An extensive body of literature has documented the problems faced by rural hospitals and other providers and found that people who live in rural areas often lack access to basic health care services. A variety of elements contribute to these problems in rural areas, including a declining population, economic stagnation, shortages of physicians and other health care professionals, a disproportionate number of elderly, poor, and underinsured residents, and high rates of chronic illness. The task is to propose a solution to one specific problem which is prominent in this area, focus more on increasing the supply of specialty mental health providers and the provision of quality mental health services for residents of rural areas.

2. Improve social welfare

The meaning of the social welfare is the well-being of the entire society. Social welfare is not as same as standard of living, but it is more concerned with the quality of life that includes factors such as the quality of the environment, level of crime, extent of drug abuse, availability of essential social services, as well as religious and spiritual aspects of life. Lack of digital record-keeping has meant authorities can struggle to coordinate, monitor and evaluate their progress on these factors. As a result of such issues, some beneficiaries remain in the program longer than they should, while others in need never gain access. Currently, a \$75 million World Bank program is underway which aims to support the government's efforts to create an integrated system to manage and centralize the administration of these programs. The goal is to improve the equity, efficiency and transparency of the social safety net system. The task is to develop a practical solution for the purpose of addressing the specific problems identified by you to enhance social welfare of Sri Lanka.

3. Peace, Justice and Strong Institution for a better society

Crime rates Sri Lanka is continued to grow like a social melanoma since 1944. New methods are required in order to take decisions regarding a crime. Crime is present in various forms in Sri Lanka. Crime is segmented into two broad classifications: grave crimes (those which are indictable) and minor crimes (those which are not).

The threats of homicide, violence against children, human trafficking and sexual violence are important to address to promote peaceful and inclusive societies for sustainable development. Unfortunately nowadays we observe that the crimes are so common occurrence in our country. Criminals search for numerous ways in order to commit crimes with the use of advance of the technology. All crime searching mechanisms and crime alert systems of our country should be modified with the modern high technology methods in order to curb crimes. Not only the policies of a country, but also techniques which we use to prevent crimes contribute to the increase of the crime rates. The rate of crimes could be reduced certain extent utilizing the new technology. Most of crimes are not reported or not recorded, not followed through, or not able

to be proved. So what is your solution for modifying crime searching mechanisms of our country using modern technology? How can this be solved?

4. Make cities inclusive, safe, resilient and sustainable

Cities are locations having a high level of accumulation and concentration of economic activities and are complex spatial structures supported by transport systems. The larger the city, the greater its complexity and the potential for disruptions, particularly when this complexity is not effectively managed. Urban productivity is highly dependent on the efficiency of its transport system to move labor, consumers and freight between multiple origins and destinations. Additionally, transport terminals such as ports, airports, and railway stations are located within urban areas, contributing to a specific array of problems. Many public transit systems, or parts of them, are either over or under used. During peak hours, crowdedness creates discomfort for users as the system copes with a temporary surge in demand. Low ridership makes many services financially unsustainable, particularly in suburban areas. In spite of significant subsidies and cross-financing almost every public transit system cannot generate sufficient income to cover its operating and capital costs. While in the past deficits were deemed acceptable because of the essential service public transit was providing for urban mobility, its financial burden is increasingly controversial. Your task is to propose a solution to overcome and make public transport more effective for the passengers.

5. How to apply block chain beyond cryptocurrency?

When we hear the term Blockchain the main thing that pops into our minds is the word "crypto-currency". But we should know that crypto currency is not the only concept that involves blockchain. There are many other domains which have adopted block chains in to their applications including the Internet of Things (IOT) ecosystem. Not only IOT, domains like Cyber security, Unified communications, government, crowd funding and donating, health care,

rentals and ride sharing are also using blockchains nowadays in their day to day routings. When talking about cyber security all data is verified and encrypted in blockchain using advanced cryptography, making it resistant to unauthorized changes and hacks. And even though centralized servers can be very susceptible to data loss, corruption, human error and hacking. Using a blockchain decentralized, distributed system would allow data storage in the cloud to be more robust and protected against attacks. Blockchain can also be used to reduce bureaucracy and increase security, efficiency and transparency regarding governments. Welfare and unemployment benefits could also be more easily verified and distributed and votes could be counted and verified for legitimacy.

6. Solutions to disability

World's Health Organization, has said that 'differently abled is a person who has impairment that produces functional limitations, restrictions in activities or has social handicap'. Being differently abled is a complex phenomenon which reflects an interaction between the features of a person's body and the features of the society in which he or she lives. Such persons are seen as being restricted in performing daily activities because of a complex set of interrelating factors, some pertaining to the person and some to the environment and social/political arrangements. The social concept of disability introduces the notion that society has erected barriers, physical or attitudinal, which affect a differently abled person's life. Also comparative dimensions or the cultural and social welfare differences influence the well-being of families with disabled in different contexts. In the past three decades, the concept of disability has shifted from individual impairment to a more social phenomenon. People tend to make life easier for differently abled people. Your task is to focus on an area which can benefit them more by making their lives easier and healthier and implement a solution by using Natural Language processing (NLP).

7. Detect the cyber bullying

Cyber bullying is the use of technology as a medium to bully someone. Although it has been an issue for many years, the recognition of its impact on young people has recently increased. Social networking sites provide a fertile medium for bullies, and teens and young adults who use these sites are vulnerable to attacks. With an increase in the use of social media platforms by adolescents, cyber bullying has become quite rampant and in some extreme cases it has also resulted in suicides by the victims. Through machine learning, we can detect language patterns used by bullies and their victims, and develop rules to automatically detect cyber bullying content. Your task is to focus on a solution which can use for detecting the cyber bullying.

8. Think of innovative

Technological development has improved many aspects of life of the populace by enabling people to improve productivity as well as effectiveness of their day to day activities while also having a better life experience.

For example, the use of Google live traffic has enabled users save time which would have otherwise been wasted unproductively on the road. Another current example would be support in making a purchase decision through allowing you to visualize the impact of your choices (eg this may be a choice of clothing or even an architectural choice).

Your task is to develop an application that would help provide a direct impact on the standard of living of users through improved productivity and/or effectiveness of a given activity.

3) Proposal Template

1. Introduction
 - a. Introduction to the domain
 - b. Specific problem to address
 - c. Feasibility of the solution.

2. The product
 - a. Overview
 - b. Key benefits and features
 - c. Relevance of the product to the given problem

3. The Execution plan (Business plan of profit oriented)
 - a. Business plan (deployment plan in a not-for-profit scenario)
 - b. Marketing plan (promotion of uptake in a not-for-profit scenario)

4. Technical overview

Team name & Selected Scenario Number should be stated in the header of each page of the proposal and all pages should be numbered. You have the freedom to best utilize the limit of 3 A4 pages as per your choice within the above template format.