DMCE Hackathon Problem Statements

Category : Cyber Security

1. Online Personal Identity

Description:

In wake of competing social media flow, this has to do everything to be safe. Personal data online is subject of immense focus. It's seller's delight, user's nightmare and government is trying to govern its flow with slew of laws worldwide.

European GDPR, India's upcoming PDPB, California CCPA are raising awareness among online consumers and users. Our personal identity exists in online world in many places and forms. The threat of Identity theft, which is the deliberate use of someone else's identity, can put the real owner at disadvantage, socially as well as financially. It is the fundamental right of a user is to have control on how his/her online identity and data are consumed. This theme today challenges the developers to come up with innovative ways to identify and potentially, protect your personal identify online.

Theme/Dimensions:

Build and submit an app-based solution that helps identify pockets of your identity online. Online identity can be in the form of any of your Personally Identifiable Information (PII, examples of which are – name, email address, phone number, Aadhar number, photos and picture etc. App must be able to crawl to cover critical social media platforms, consumer apps and websites.

Technology/Expected Output:

You could use all Openstack tools, codebases, Aadhar stack, native cloud and it's provided tools, IBM Watson Visual Recognition, Syncope, AI and Deep Learning tools.

Category : Business value

2. Driving Idea to business value

Description:

In the fast-changing competitive world, minimizing ideation to business value is a matter of life and death. Realistically it could be difference between - a possible unicorn v/s a failed startup. At the same, time a half-baked idea without a 360 degrees perspective is also invitation for a possible death of an idea at its nascent stage. A robust framework which will drive a brilliant idea to business value is a key to establish a successful business of tangible value.

Theme/Dimensions:

Build and submit a methodology with a working technology driven model that drives an idea to a business value as it passes through its Software Development Life Cycle. (Idea à Design & Architecture à Development à Test à Release and Deploy)

It needs to cover collaboration, social-commercial-regulatory angles of the idea and business value. Examples of a business value can be a measurable outcome in terms of impact – speed at which an idea is released to production– be it – social or commercial.

Technology/Expected Output:

1. Process principles: Agile Development (SAFe, SCRUM etc with tools like JIRA, Versionone etc),

2. Supporting Software tools: Usage of -

- a. Low/No-code platform for code generation (outsystems, mendix, Apian etc)
- b. UML based requirement designers for automatic generation of code and test cases (CA Agile Requirements Designer, BOUML, Modelio etc)
- c. Cloud environment and/or Containers for faster deployments and portability (Docker, Kubernetes, terraform, AWS, BlueMix etc)
- d. DevOps construct for repeatability of the process (CI/CD).

Category : Blockchain

3. Drug counterfeiting

Description:

Drug counterfeiting is a major problem in the pharmaceutical industry. Here are some metrics revealed by the Health Research Funding Organisation:

- 10% to 30% of the drugs sold in developing countries are counterfeit
- The counterfeit drug market is worth $200 billion annually
- Internet sales of counterfeit drugs account for $75 billion of the total market
- Most of the counterfeit drugs are manufactured in either India or China
- About 60 different Pfizer medicines and products were being counterfeited around the world as of 2014
- WHO estimates that 16% of counterfeit drugs contain the wrong ingredients, while 17% contain the wrong levels of necessary ingredients

Dimensions:

The main issue with fake drugs isn't the fact that they are fake but rather that they can be very different from the original product in a quantitative and qualitative way. Indeed, many of them don't have the active ingredients they claim they do. This can be particularly dangerous for the patients that take the counterfeit drug since it won't treat the disease it is supposed to treat. Furthermore, if the ingredients and the dosages are different, the product can trigger unexpected secondary effects that can lead to death. From a more economical perspective, drug counterfeiting represents an annual loss of 10,2 billion euros for the European pharmaceutical sector and 37,700 jobs in the US are lost because manufacturers employ fewer people than they would if fake drugs didn't exist.

Expected Output:

Design a solution using blockchain, to help with two main issues when it comes to drug traceability

- Allow companies to track their products down the supply chain, creating an airtight circuit, impermeable to counterfeit products.

- Allow stakeholders, and especially labs, to take action a posteriori in case of a problem by identifying the exact location of their drugs.

Category : Financial Tech

4. Financial literacy in Rural Area

Description:

This problem is to promote and spread awareness regarding financial products in rural areas and create user profiling.The problem of Financial Literacy in Rural Area looks at solving one or multiple or all of the below issues in the form of interactive games.

- 1. Training on Financial planning.
- 2. Create awareness and provide assistance to connect with organized lending partners and Solving the issue faced by people through unorganized or orthodox lending options.
- 3. Creating awareness regarding the alternate and safest form of investment options.
- 4. Aware people regarding personal Insurance and its benefits.
- 5. Aware people regarding Health insurance and its benefits.

Dimensions:

This problem has the following dimensions. The audience/beneficiary of this solution are people from tier-3 areas of India i.e rural / rural-urban / semi-urban areas. It should be an interactive game that can be in any form i.e chatbot, android app, web app, WhatsApp bot. User's demography (area, age, gender, etc.) needs to be collected during registration or in any interaction within the game. Methods like psychometric tests can also be involved as a part of the interaction and these data pointers can be used to do user profiling based on their character, intelligence, credit-worthiness. Games should not be completely text-oriented. The user's profile can also be used to decide what form of content the user can conceive and the training material should be provided in the same form to get a better result.

Expected output:

The Objective of the solution is to create a fun (game) based learning system which will be used to spread financial literacy in tier-3 areas of India as well as build user profiling based on information collected during interactive sessions of the game.

For example: If your user is a farmer and you want to make him aware regarding logistic insurance, you can explain to him in a story form which can be a combination of text, videos, audios and pictures explaining to him how can minimize or recover his loss that can happen due to accidental damage of goods in transportation. Keep it interactive to track his learning curve. And the most important users should be able to co-relate things with real-life problems and daily routines so that they can connect with you more easily.

Category : Marketing

5. Build a naive referral approach in the best possible way.

Description:

Referral policy is common in many of the B2C applications, but currently carried out in a traditional way. The current day referral policies drive the user to share the application via any of the social media platforms and thereby ensuring monetary/reward points in return or referral policies which are based on MLM (multi-level-marketing) approach.

The idea is to build a module which could promote an app in a better and efficient way. Unlike promising cashback upon referral and signup, is it possible to build a workflow where users could be self-driven to promote the application. For example, emphasizing factors such as personal interests, curiosity, appreciation, loyalty, community and thereby creating a sense of competition across them to achieve rewards/satisfaction. Innovative and reliable approaches would be highly appreciated. So basically the idea would be to build a referral module to provide reward points in the most optimistic naive way.

Dimensions:

Target audience would be people from tier-3 areas of India i.e rural / rural-urban / semi-urban areas. No specific set of constraints in sharing/marketing via social media applications. Ideas shouldn't be too complex to educate a layman, especially who isn't a tech geek.

Problem expected output:

Completely build a feasible referral based module or a prototype of ideation in any of the programming language considering tier-3 population as target audience unlike the current existing traditional methods of referral approach.

Category : Agriculture & Rural Development

4. Geo-fencing of Rural Areas

Description:

In Real-world geo-fence acts as a virtual perimeter for a real-world geographic area. A geo-fence could be dynamically generated—as in a radius around a point location, or a geo-fence can be a predefined set of boundaries.Traditionally the ownership of land is decided through paper work in metrics like acre,bigah , etc and maintained at 7/12 centers who keep the record of land ownership. There is no other way than to visit the place to know the utilization/purpose of the land. Geo-fencing creates virtual perimeter of the geographical land and keeps its record digitally which makes it more accessible.

Dimensions:

The Algorithm should be able to locate the land virtually via gps coordinates effectively.

The system built should be able to add records of the crops cultivated on those lands throughout the season which will make it easier for the government to keep records.

The ownership of the land should be easy to find via this algorithm.

Expected Output:

The Algorithm should be able to predict the future crops that could be cultivated using AI/ML with the help of database created from the records. It should be able to identify and distinguish between the land and their use. The solution could be useful for the government to keep and maintain 7/12 extract of lands.

Category : Healthcare & Medical

2. Tackle/track/diagnose mental health issues using technologies like AI or ML

Description:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. We as humans focus just on our physical health. Unfortunately, in most parts of the world, mental health and mental disorders are not accorded anywhere the same importance as physical health. Rather, they have been largely ignored or neglected. Mental disorder, if not taken care of, can lead to

1. disability
2. permanent memory loss
3. manipulation or even
4. self-harm

Dimension:

Explore parameters like tracking anxiety levels, stress levels and physical and mental tiredness.
CBT is commonly used to treat a wide range of disorders, including phobias, addictions, depression, and anxiety.
Use CBT(Cognitive behavioral therapy) techniques and methods along with Machine Learning or Artificial intelligence and provide solution.