Agriculture

1.

TITLE: MINIMISING INTERMEDIARIES IN THE AGRICULTURAL MARKET

DOMAIN: Agriculture

DESCRIPTION:

The one main defect of Indian Agricultural marketing is the presence of too many middlemen and the exploitation of farmers by them. On one hand, these middlemen exploit the farmers by purchasing the produce at lower prices, and on the other hand, they exploit the customers by demanding higher prices from them. The only aim of a number of commission agents, brokers etc. is to derive a higher income from the middle processes. These middlemen take undue advantage of the poor farmer on the basis of their financial resources.

REQUIREMENTS:

In order to get rid of this problem, a solution has to be built such that the cost of the commodities should be equal to the Minimum Support Price (MSP). The solution must minimise the intervention of the intermediaries and must reduce the gap between the farmer and the consumer. The solution acts as an interface between farmers and consumers.

2.

TITLE: ESTIMATION OF CROP YIELD BASED ON SEED QUALITY

DOMAIN: Agriculture

DESCRIPTION:

Seed may be defined as “a store of food”. The quality of seeds is considered as an important factor for increasing yield. The use of quality seeds helps greatly in higher production per unit area. Quality seeds have the ability for efficient utilisation of the inputs such as fertilisers and irrigation.

REQUIREMENTS:

The solution designed should provide an analysis of profits acquired by the farmer based on seed quality, fertility of land and landscape.

PARTICULARS:

Based on genetic purity the seeds are divided into four categories. They are,

1. Nucleus seed -100% purity
2. Breeder seed - 100%purity and certification tag is golden yellow in colour.
3. Foundation seed - 99.5% purity and certification tag in white colour.
4. Certified seed - 99% purity and certification tag in blue colour.

ADDITIONAL REQUIREMENTS:

1. The solution should suggest the right time for cultivation based on climatic conditions.
2. It should be able to suggest the type of fertiliser that has to be used along with the quantity.
3. It can also give information about seed and crop analysis, along with the expected market prices.
4. It should generate the alerts based on type of crop and weather.

3.

TITLE: AUTOMATED IDENTIFICATION OF FISH SPECIES

DOMAIN: Agriculture

DESCRIPTION:

INCOIS is providing Marine Fishery Advisory Services to the fishermen. To evaluate its accuracy and in order to develop species-specific advisories, it is necessary to collect the fish-catch information at the species level. While fisherfolk are supportive to these efforts, often species level catch reporting is having hindrances due to several reasons pertaining to manual efforts which result in low or erroneous reporting.

REQUIREMENTS:

The solution should include AI-ML tools for image-based identification of fish species found in the Indian seas. The images of fishes may be taken from online image searches. Similar tools are provided in the reference links below. INCOIS will be able to use this for its fishermen feedback app, where fishermen need to take a photo of fish caught and fish identification will be done through code, minimising the manual intervention.

4.

TITLE: A PLATFORM TO LINK POTENTIAL DAIRY IMPORTERS OF THE WORLD WITH MAJOR DAIRY PRODUCT MANUFACTURERS OF THE COUNTRY.

DOMAIN: Agriculture

DESCRIPTION:

India’s dairy industry has significant potential for growth, but it still faces many challenges. The country is the largest milk producer since 1998. As such, to stay competitive, dairy farmers need to be able to supply domestic companies with raw milk that meets rigorous food safety standards. But India is vast and milk collection centres sparse. Distances to dairy plants can span hundreds of kilometres, leading to high transportation costs, spoilage risks, and difficulties in upholding milk industry standards. Additionally, milk producers and processors are often not in direct contact with one another making it difficult to coordinate the collection.

REQUIREMENTS:

A mobile application accessible to all dairy producers and consumers to keep track of major potential dairy importers of the world and link them with major dairy product manufacturers of the Country.

5.

TITLE: ASK AGRI EXPERT

DOMAIN: Agriculture

DESCRIPTION:

Farmers are always confused to ask any query related to farming. A major reason why they don't adapt to various existing apps is because they are in English and not in their regional languages. Farmers often struggle for basic information like weather updates, crop prices and expert advice, ending up often relying on hearsays.

REQUIREMENTS:

Farmers can ask queries in their own language/images/voice/video. There should be a dynamically updateable different topic. Only authenticated users should update the topic. The application user should be verified first time by OTP. There should be a manual or partially automated consult expert forwarding system for the requested queries. Every topic has multiple experts and there should be provisioned to forwarding queries by their district. If any query is attended by an expert, then that should not be repeated. An expert can also answer the query using a hand-held device. Admin login to manage names and areas of experts.

ADDITIONAL REQUIREMENTS:

1. There should be frequently asked questions which are updated by authenticated users.

2. There should be an option for language (regional).

Healthcare

1.

TITLE: AUTOMATION OF MEDICAL SERVICES BY HOME CALLS

DOMAIN: Healthcare

DESCRIPTION:

Traditional health check-ups are plagued by long queues, inconsistent doctor appointments, unavailability of required medicines in pharmacies and doubtful services.

REQUIREMENTS:

The solution should deliver services right to the user's door. The client will be able to book the doctor’s appointment using the solution. The doctor visits the client’s house and performs the blood tests and required check-ups in the client’s house. The prescription must reach the doctor and the client. A detailed description of the report will be delivered to the client along with the prescribed medicine. The prescription is also sent to the pharmacies, and they make the order ready for delivery.

ADDITIONAL REQUIREMENTS:

1. **DIAGNOSIS REPORTS TO BE INCLUDED:**
    a. Risk percentage
    b. Days required for recovery
    c. Medication requirements
2. In the case of any traditional scans, the client can book an appointment at the diagnostic centre.
3. The solution can also provide the feasibility of pre-booking of beds in the case of emergency.

2.

TITLE: SMART REFERRAL FOR SICK NEWBORNS TO SAVE LIVES

DOMAIN: Healthcare

DESCRIPTION:

A new-born infant, or neonate, is a child under 28 days of age. During these first 28 days of life, the child is at the highest risk of dying. To ensure appropriate and timely care to new-borns, the SNCU (Special New-born Care Unit) is established in Medical Colleges and District Hospitals that receive referred sick neonates, either inborn or out born. Most of the time medical college SNCUs are overburdened and neonates may need to be referred to DH SNCUs or other SNCUs.

REQUIREMENTS:

A smart referral from functional delivery points through inputs of vital signs, complaints, and laboratory parameters to SNCU in case of out-born babies, as well as inborn cases. Moreover, referral between SNCUs in case of non-availability of beds to ensure timely care of a sick new-born.

3.

TITLE: APP FOR GOVERNMENT MEDICAL SERVICES AVAILABILITY

DOMAIN: Healthcare

DESCRIPTION:

There are many government hospitals available across India in various locations. Every state government has Health Care Centres in villages and multi-speciality hospitals in large metros, which provide free or low-cost healthcare facilities such as treatment of diseases, conducting an essential test and providing medicines. Most of the citizens are unaware of the services provided and the schemes assured.

REQUIREMENTS:

Develop a hospital finder application using any GPS API which shows the location and nearby government hospital with opening time and closing timing by integrating various bio-medical data sources, containing information relevant to the hospital demographics, inpatient procedure rates, Outpatient department, etc.

4.

TITLE: INTERPRETING DOCTORS NOTES USING HANDWRITING RECOGNITION AND DEEP LEARNING TECHNIQUES

DOMAIN: Healthcare

DESCRIPTION:

Most doctors have to write the same thing over and over again. It gets boring after days, weeks, months and years. They have to be very fast with the prescription in order to attend maximum patients. Their handwriting slowly enters decline and by the time they are consultants, it is frequently not understood. Despite the reasons, the prescription is to be understood sometimes by the patients.

REQUIREMENTS:

Solution to digitise the handwritten prescriptions, doctor notes, lab reports, which can also help to integrate tightly with other healthcare systems for seamless digitization and data flow. Standardised forms can also be made machine readable with support for multiple local Indian languages to make digitization much simpler.

5.

TITLE: PSYCHOTHERAPY USING EMOTION DETECTION

DOMAIN: Healthcare

DESCRIPTION:

Depression (major depressive disorder) is a common and serious medical illness that negatively affects how you feel, think, and act. Fortunately, it is also treatable. Depression affects an estimated one in 15 adults (6.7%) annually. And one in six people (16.6%) will experience depression at some time in their life. Between 80% and 90% percent of people with depression eventually respond well to treatment. Psychotherapy or “Talk therapy,” is sometimes used alone for the treatment of mild depression.

REQUIREMENTS:

Build a working prototype that serves as a conduit for a depressed individual to anonymously and openly communicate his emotions. The user should utilise emoticons to express their feelings (level of depression). Depending on the user's input, the data should be sent to an NGO (any organisation) and connected to a person, so that the user can express their sentiments.

ADDITIONAL REQUIREMENTS:

Ensuring anonymity and privacy is important. The security of the user's provided data must be ensured. The discourse or the inquiry should be gentle and fluid.

Smart Education

1.

TITLE: AI-BASED TOOL TO GET INFORMATION ABOUT 5 GOOD INSTITUTES BASED ON AISHE

DOMAIN: Smart Education

DESCRIPTION:

India, as we know, is a densely populated country, and every year more than 6 crores of Indians graduate from diverse backgrounds and with diversity in education. Almost a similar number of students enter colleges to take various education courses to help them in seeking jobs. With the advent of time, technology and the requirement of the job sector has changed drastically compared to 10 years back. Many sectors have experienced tremendous employment growth and thus masses opt for those sectors whereas in many sectors there is huge unemployment either due to low job availability or demand for skilled workers is required. Thinking of every branch and when comparing it with the current employment in India and abroad, we will find some points that will help in predicting the admissions and job scenarios in the fields of engineering and technology, management, and pharmacy. Due to the changing technology and its requirement for getting employed in India and abroad, experts have suggested improvements for predicting the Prediction of Admission & Jobs in Engineering & Technology /Management/Pharmacy. This is not a one-time process and needs to be done frequently as trends in the industry keep changing. Addressing this problem will help in knowing the top good institutes and also will give the details on how the institute was able to sustain a good position. This will help in the development of all other institutions and better growth opportunities will be opened.

REQUIREMENTS:

We need you to develop a portal where information on 5 good institutes based on AISHE data like faculty-student ratio, infrastructure (Laboratory and Hostel facility), research facilities at institutes, etc will be shown up. And this data should change according to the latest AISHE data. Always maintain the portal with the real-time data from AISHE.

ADDITIONAL REQUIREMENTS:

Extend the solution by adding information about top 5 schools.

2.

TITLE: ACCESSING VISUAL INFORMATION (WRITTEN INFORMATION) BY PERSONS WITH VISUAL DISABILITIES.

DOMAIN: Smart Education

DESCRIPTION:

Unlike sighted people, people with visual impairment rely on alternative formats such as braille, large prints and talking book or tape recordings and electronic resources to meet their reading needs. The provision of information materials to persons with visual impairment has remained worrisome to producers and providers of alternative formats. Summary: The Internet and the World Wide Web have significantly increased the ease of access to information resources for people with disabilities due to the flexibility of use and the provision of assistive technologies such as screen readers for people who are BVI. However, web content is only useful if it is accessible and usable. The concepts of accessibility, usability, and usefulness are part of a growing field that focuses on user experience (UX) and user-centric design.

REQUIREMENTS:

The solution is to convert the available materials into alternative formats. It should enhance accessibility and usability by blind or visually impaired persons for visual information. Solution should be more user friendly.

3.TITLE: ENGAGING CHILDREN IN CO-CURRICULAR ACTIVITIES

DOMAIN: Smart Education

DESCRIPTION:

Extra-curricular activities are a great way for children to learn about the world around them. It is important that they are given an outlet for their extra energy and curiosity so that they can grow into healthy, well-rounded adults with a wide range of knowledge and experiences. However, more than just being fun, extra-curricular activities also teach children how to be social in many different situations which will help them later on in life once they enter the workforce.

REQUIREMENTS:

The solution should provide the beginner level guide for co-curricular activities. It must also give rewards on completion of each task in order to motivate the kids. This has to benefit mainly children in the age range of 5–13.

4.TITLE: RECOMMENDATION SYSTEM BASED ON LEARNING PATTERNS

DOMAIN: Smart Education

DESCRIPTION:

Many times, students start learning something and get lost when they face difficulties and because of a lack of awareness of future scope. In order to provide a better learning experience

REQUIREMENTS:

To develop a recommendation system that recommends a guided path and learning scope for projects, research and development, latest trends in that field, and various job opportunities.

ADDITIONAL REQUIREMENTS:

The recommendation system built should be able to integrate with various learning platforms and recommend the above based on the user's activity.

5.TITLE: GAMIFIED LEARNING

DOMAIN: Smart Education

DESCRIPTION:

Usually, children hate the learning process because they have to repeatedly learn the same thing for a long time. Making learning an interesting activity can be of great help here. They get bored with the routine study schedules and procedures.

The system is failing to create an interest in pedagogy. One of the important reasons why children may find studies boring is the wrong method or way of teaching. Games are loved by children as they give them the universal freedom to express themselves and enjoy themselves. It gives them a feeling of relaxation and happiness.

REQUIREMENTS:

You're required to build an easy-to-use platform to gamify the experience of learning for toddlers and pre-teens. It should include rewards to encourage them to learn more. Each level in the game must ensure a learning outcome. Each topic's level should retain its proper hierarchy. Daily or weekly learning outcomes are great to keep the learners on their toes.

ADDITIONAL REQUIREMENTS:

1. Include the majority of topics covered in any elementary or middle school grade's curriculum.
2. Add a feature to allow the learners to convert the rewards into goodies.