E- SANKAT MOCHAN

MANHATTAN ★ ★ ★ ★ SPORTS FINAL

DAILY NEWS

NEW YORK'S PICTURE NEWSPAPER — Wednesday, April 30, 1986

FIRE RAGES, CLOUD SPREADS

THOUSANDS FLEE NUKE NIGHTMARE

- Help us, USSR pleads
- Death toll uncertain
- Europe fears fallout

SEVEN PAGES OF IN-DEPTH COVERAGE BEGIN ON PAGE 2

A SWAT Team for Nuclear Accidents

The NRC, under pressure to improve its accident analysis, has installed a new system that demands fast detective work and quick reporting

WHEN complex systems like airplanes and nuclear plants fail, postaccident inquiries should be penetrating, complete, and honest. Recently the Nuclear Regulatory Commission has taken steps to improve its own investigations, including the use of fast-working sleuths sent out from headquarters. The aim is to spur the nuclear industry—and the NRC staff as well—to better performance.

Although the NRC's new tactics are generally acknowledged to be working well, they were in fact begun in order to head off a more radical reform, one that would have taken responsibility for investigating accidents away from the NRC staff and placed it in the hands of an independent panel. Some experts, including two members of the commission itself, still argue that this independent approach is needed.

The new program began on 10 June 1985, the day after an emergency shutdown of the Davis-Besse reactor on Lake Erie in Ohio. That morning, William Dircks, who was then the NRC's chief of staff in Washington, quickly assembled some experts and sent them off to find out what had gone wrong. According to Dircks' plan, the group was drawn from NRC offices having no involvement with the troubled plant. This gave birth to the Incident Investigation Team, something the NRC had long considered but never established.

The IIT team, the nuclear version of a SWAT squad, is supposed to sweep in and "freeze" a plant in its disabled state. It interviews company employees, examines electronic logs, looks over the equipment, puts together a sequence of events, and issues a report* within 45 days. The team is meant to write a tight analysis pointing to one or two root causes of failure, including management error when appropriate, and not a laundry list. The aim is to provoke remedial action.

That is the goal. It contrasts with the old practice of running duplicate inv... and permitting regional or enforce... cials first crack at interpreting the e... This was the agency's custom even when a local NRC official's reputation might be on the line. A study group at the Brookhaven National Laboratory examined the record and found that reports often got bogged down in quarrels over whether operators had or had not obeyed NRC rules during ... crisis.† In some cases this led to years ... correspondence, but no action bei... on faulty hardware.

The Davis-Be... Lake Erie

An emergency shutd... triggered "one efforts since Three Mil... the NRC chairm...

More than once, th... ad to order a follow-up investigati... case in 1983 involved the Salem ... New Jersey, where an automatic ... em (designed to stop the fission ... the reactor) failed to work. A c... idence was so pawed over ... worthless. This was an electr... relay ... made its way to the manufacturer ... before it reached the NR...

The change of policy last June had a proximate and an historical cause, Davis-Besse being the proximate cause. Like many crises, it began in the wee hours, at 1:35 a.m. on 9 June 1985. Shortly after the graveyard shift came on duty, a main feedwater pump got a message from the automatic control system to shut down, and it did. In the fast-moving events that followed, an operator punched the wrong control buttons, shutting off water to the steam generators and causing the system to lose its capacity for heat removal. The reactor coolant began to overheat. Before serious damage occurred, technicians were able to turn on an auxiliary water supply (after rushing down four flights of stairs, unlocking padlocks, putting fuses into an empty fusebox, manually switching on a pump, and struggling with a wrench to open some critical valves). The staff got things under control moments before it would have been necessary to go into an emergency cooling routine known as "fe... bleed," a step that would have worsen... crisis. The plant is still shut down for ...novations, and its owner hopes to restar...

The unde... IIT team ... ar...

*The NRC has issued two IIT reports to date: "Loss of Main and Auxiliary Feedwater Event at the Davis-Besse Plant on June 9, 1985" (NUREG-1154) and "Loss of Power and Water Hammer Event at San Onofre, Unit 1 on November 21, 1985" (NUREG-1190).

†"An Independent Safety Organization" (NURE... 4152), issued by the NRC in Washington, ... Fe... 1985.

IN CLOUD OVER RUSSIA

SOVIET UNION

Chernobyl

Kiev

NUKE CRISIS

High death toll is possible, say Western envoys

accident dwarfs TMI

worst in history

DMRC blames it on technical fault

tmare

SHAME OF THE ROYALS

PAGES 4 and 5

...not being buried in ...teries but in the radiation pits?

...000

DISASTER

'2,000 DEAD' IN ATOM HORROR

DAILY EXPRESS

THE VOICE OF BRITAIN

Russia admits worst atom plant disaster ever

NUCLEAR NIGHTMARE IS HERE

- More than 2,000 dead

ABOUT

PROBLEM STATEMENT :

Health and safety of workers

Team Members:

- Mahika Agrawal – 20BAI10101
- M Shraddha – 20BAI10034
- Nikhil – 20BAI10275
- Ansh Srivastava – 20BCE10572
- Vardaan Narang – 20BHI10045

Ideology behind the Project

Ramayan being an integral part of the Indian household, is something we all have grown up watching and learnt from. To be calm like lord Ram, to be gentle like goddess Sita, loyal like Lord Laxman and brave and courageous like lord Hanuman who protects us all from evil are all the values taught to us at our homes.

Lord Hanuman has always been everyone's protector and rescuer in tough times and taught us to be brave and be ready to face any difficult situation.

This is where we all as a team found common ground and came up with the idea and name of our project; E-Sankat Mochan that helps us protect the workers and common people from any hazards caused by faulty machines and mechanisms just the way Lord Hanuman does.

Following the Culture of our folklore and getting inspired from the most popular lord mentioned in the Hindu scripts. Taking inspiration from Lord Hanuman and his practices and preaching we started to develop our project. Hence, the name.

Problem Statement

For any industry to work efficiently, it is the laborers that really work towards the betterment of the company and its success. But at the same time, it is also the same sector of the industry that is at most risk for any sort of health and hazard.

In most of the scenarios it is usually the huge machines that are the cause for major accidents in industrial places causing harm to workers or even sometimes resulting in their death.

These major accidents caused by large machines disfunctioning not only results in loss to the industry but also most importantly causes a loss of Human life. This results in the questioning of the health and safety of the workers in the industrial workspace.

So how do we make it safe for the workers while they are working in the industry to earn their daily bread and butter ? That is how we came up with "E-SANKAT MOCHAN" to think for the betterment and safety of workers in an industrial location.

Problem Analysis

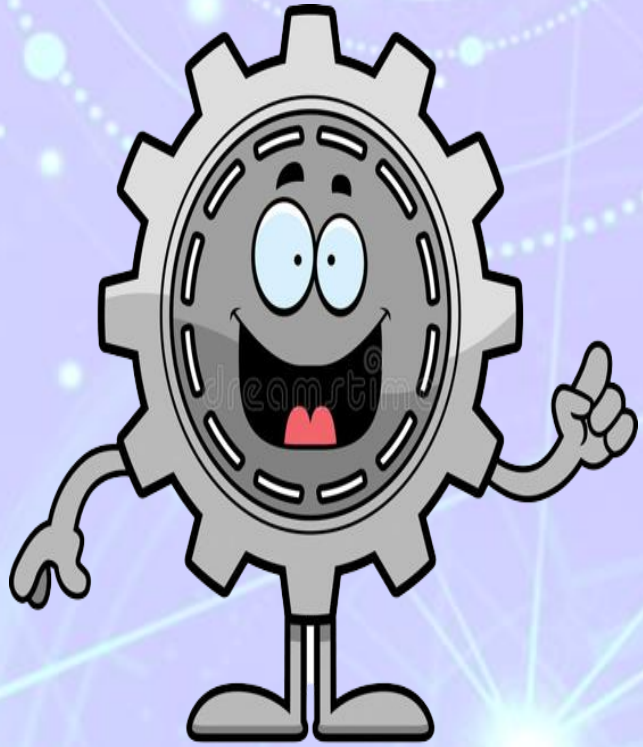
With the Problem in hand we started to analyze what actually is wrong and how we solve this major problem occurring in our industrial places. Keeping in mind a simple concept of preventing the workers from the risk of accidents due to Machine failures and keeping their safety at first we started to explore this field.

This led us to developing an overall solution to even users who face difficulty in getting their household machines repaired on time before they get faulty. This would help ease things out for the users and help us build smart machines for the future which when about to get faulty can be detected and notified making things easier and safer for the user of the respective machines.

Solution

"E-SANKAT MOCHAN" : AI-based Machine Service Appointing app

A one-stop commercial Service appointing app for all the electronic appliances the company uses. The idea is to develop an AI-based application that would proactively schedule a servicing appointment for a machine the company uses before it breaks down and causes any accident.



E-SANKAT MOCHAN is a prediction analysis model which works by predicting the breakdown of the particular machine from the data input of the name of the machine, its model number and also how in the past at what particular stage has the model broken down and has needed repairs. This is done by providing the datasets to the model of past breakdowns of machines in the companies which helps in its accurate prediction. Post this the application then will contact the service in need from the database if notified that the machine needs a service immediately.

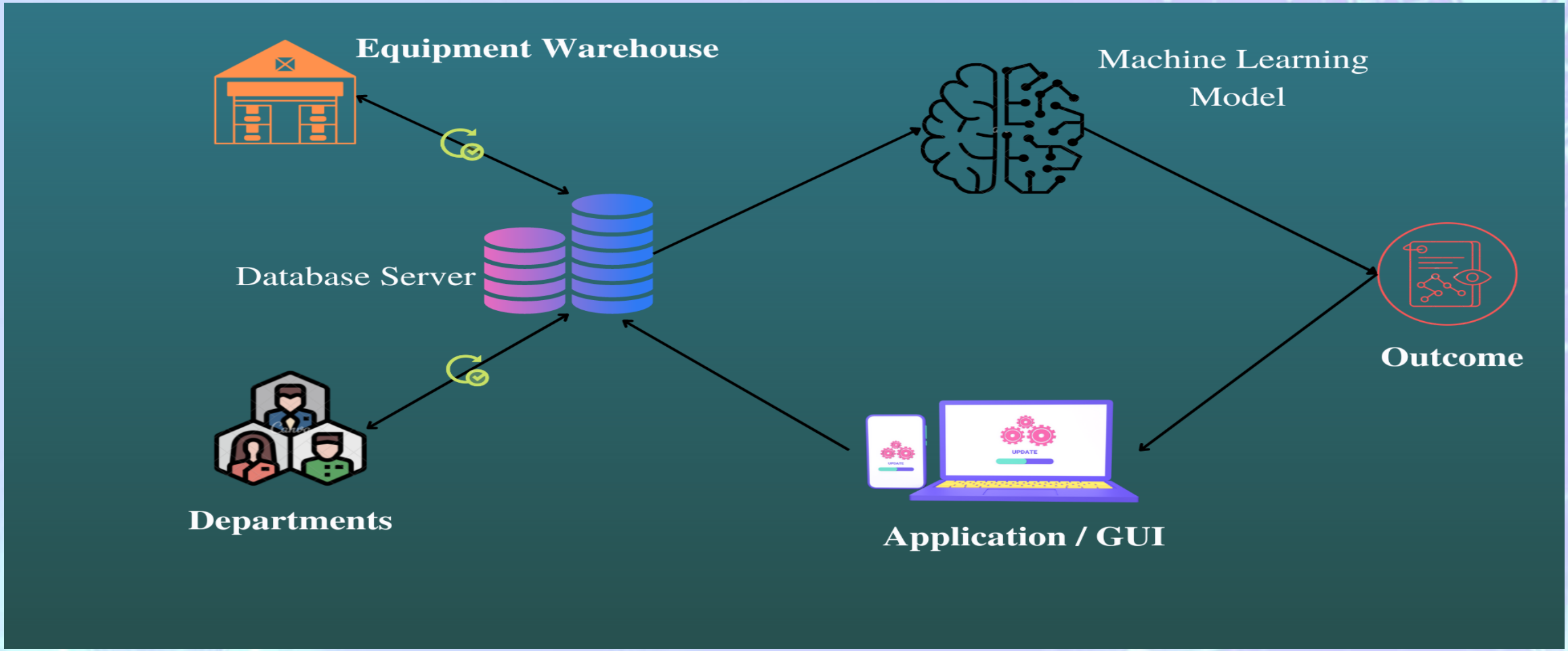
The program will get knowledge from previous experiences of various users about how long the equipment required maintenance before any accidents occurred.

For instance, the ABC Company, a car manufacturer, uses the xyz machine to form the bonnets of its automobiles. Based on previous experiences by the firms using the xyz equipment for the same task, E-SANKAT MOCHAN will predict when the machine needs repair before any harm is done to the workers and book the appointment.

Functionality of the Project

- You have the authority to nominate, and the machinery is anticipated to be available.
- Alternative equipment which can be used in emergency situations.
- Servicing / maintenance time according to the usage and work load of an equipment.
- Equipment issuing can be hassle-free and digitalized.
- Equipment tracking can also be improved.

Architecture Layout



Technology Used :

- Python GUI
- SQL for DBMS
- Python Libraries: Pandas, Numpy, Scikitlearn, Tensorflow

Existing work in the domain

There has been some work done under this domain with the idea of having websites and apps help the customers to schedule an appointment for the service that needs to be or provided. There are various apps and services that provide just the servicing system for any appliances that you can pre book once your machines get faulty.

But no one recommends the user to appoint the service beforehand and predict before whether the machine/appliance is to get faulty.

No app/model in the existing work tells the user that the risk factor is going to increase if the servicing is not done by the given time.

Other companies remind you to get your appliance serviced after a specific period of time (3-6 months), whereas E-SANKAT MOCHAN will predict the maximum time your machine could work without getting serviced before it gets faulty, and will make your work easy to schedule an appointment.

E-SANKAT MOCHAN's Business Value

The Business model of E-SANKAT MOCHAN is pretty similar to any E-commerce app/site. The ML Model will be deployed onto the App which will then be serviceable to all users and companies.

The App will be designed to cater to two types of audience
1. The companies who need it for workers and safety
2. General users who will need it for their daily household machine repairs.

Industrial/ Commercial Use	Individual Users
• Specifically companies will get a special package with Annual subscription for ensuring the safety of the working class. • While the Annual subscriptions by the companies and users overall brings us the revenue needed, even the machines and the companies associated with it who will provide the service for repairing will have to pay us 20 percent of the total charges they are taking for the repair works.	• General users will be getting a commonly used App with an annual subscription as well. Annual subscription will provide the prediction beforehand and will immediately notify the specific company associated with the machine. • We will also have local repair shops connected to them via the App who will too pay us a certain percentage of the charges they take for any small repairs that have come via our App services.

Hence, our business model will be able to provide us with necessary capital to run the App and will gain profits accordingly.

Business value as a whole of this project is surely immense as machines and their repairing system still in our country is very nominal and still there is no one stop solution available for all these issues hence E- SANKAT MOCHAN will ensure a smart way to get all your services done in just a one click solution.

Machines need constant repairing to stay intact and safe and hence the business aspect of this system will go down. Our App also in a way helps connect local repairing shops which can provide an instant repair solution and also gain capital while giving us our 20 percent share as well. Business value overall is high and immensely profitable.

E-SANKAT MOCHAN ‘s Uniqueness and Implementation

E-SANKAT MOCHAN is unique in its own way as there have been such apps in the market that predict the machines being faulty beforehand and notify you. There have been developments made on apps that just simply provide you the service.

Our App on the other hand predicts the machine and it’s faultiness and then directly notifies the servicing company and alerts it about it which ensures a faster solution to the problem. For this we will have datasets with the machine and when it got faulty in a period of time which will help our model predict it properly.

E-SANKAT MOCHAN's Scalability

E-SANKAT MOCHAN helps connect local servicing companies and machine associated servicing companies to the working class and to general users making it reach a large extent of people. The scalability of this project hence is huge as it is a project made for the common people resulting in the wider reach as mentioned.

Scalability of any project depends on how useful it is and how it is connected and is is helping to satisfy the common needs of the people and our project is successfully doing that and meeting the common purpose and solving a major issue people face in their day-to-day routine.

The project was in the market and will easily be scalable as the App can be downloaded by all and used. Companies in order to prove the high safety standards they use will use the App to ensure the safety. Further on the App can be scaled to be associated with the government of India to make it a mandatory model to be implemented by all companies in their workspaces to attain the Six sigma rule policy.

Also as mentioned the business model will spread further with more and more general users subscribing to it for an easier lifestyle.

Conclusion

E-Sankat Mochan as a project is a medium through which we want to connect and help ensure the health and safety of people as a whole. This being our motive behind the project.

As mentioned earlier, inspired from our very own lord Hanuman, we wanted to do something for the safety of workers in workspaces. To make this a success we would need the mentorship required to guide us and help us attain our primary goal behind the idea.

Team coordination and team building always is an important factor when it comes to delivering the best of the best results to any company for that matter and we believe we have such potential and really work in coordination with each other. With specific specializations each one of us has in the team, our team in a way is a wholesome team which can make any project/ concept or learn anything in the given stipulated time. Hard work determination and dedication is our team's motto and we never rest or stop learning and are always open to anyone guiding us and helping us learn new concepts and giving our best all the time

We as a team would first like to thank our esteemed university, Cognizant and Shriram Sir for giving us these amazing opportunities and helping us explore the industrial workings and for guiding us through the process and mentoring us as students whenever we have been in need of guidance. A true guru like Shriram Sir paves the way for the students to create their path to achieve success.

Our project is still in the developing stage but our motive behind it is strong and prominent enough for us to work hard towards it and make it successful.

Dhanyavaad!