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Cloud Based COVID-19 Testing Management System

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Abstract: ***Nowadays, COVID19 Testing Management System is one of the most essential tools that are mostly used in Testing Lab; it is mostly used to manage COVID19 medical lab related activities.***
In this project we tried to develop a computerized and web-based Cloud COVID19 Testing management system. Our main intention is to allow this application to be used in most retailing COVID19 lab, where a small point of customization will be required to each COVID19 lab in the implementation period. This system is designed to overcome all challenges related to the management of diagnostic that were used to be handled locally and manually.
The system is an online COVID19 lab manager application that brings up various COVID19 test working online. Using this system, it will help us to records all transaction made at the daily tests; recognize all customers, employees, etc. It will manage all activities around the COVID19 lab that increases productivity and maximize profit, it will also be minimizing the risk of getting loss because all transactions are recorded to the system.

I. INTRODUCTION

Cloud Based COVID19 Testing Management System is web-based technology which brings up various diagnosis works online. Here patients are first allowed to register on the website and provide personal, test information. Once registered with their address and contact details, the patients may now see a variety of tests conducted by the lab. The patient will select the required test and book appointment after that lab center send a lab boy at registered address to collect a sample. After successful sample collection patient can track their test history using the name, order and registered mobile number. The system allows admin to attach a copy of the report into the system and automatically shown on user side so user can download report.

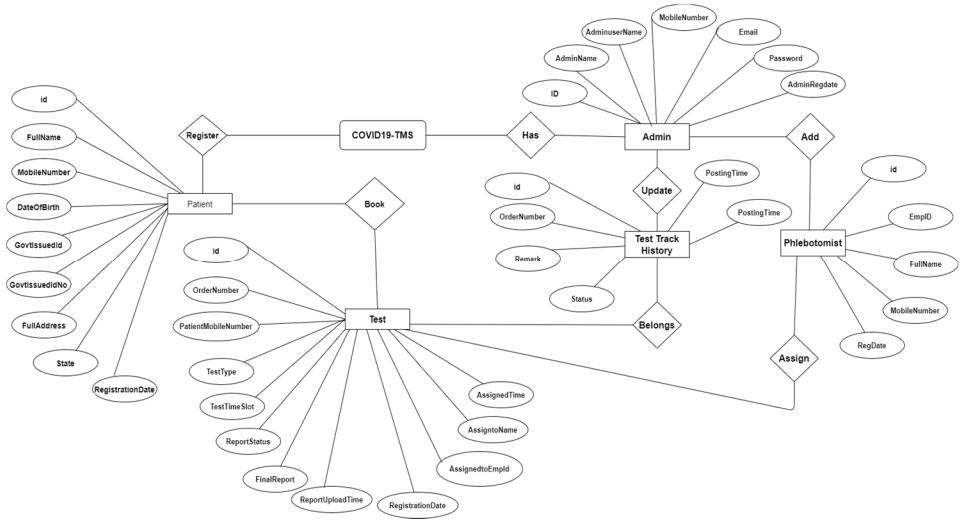


Fig.1 ER Diagram

Following are options that cloud services provide to develop such system:

1) Create an AWS CDK stack with an Amazon EC2 instance, a security group with inbound access, and an IAM instance profile.
2) Install software packages on the EC2 instance's first launch by creating a user data asset.
3) Configure the software packages after installation using a script downloaded by the user data.
4) Deploying the application using user data.

II. PROPOSED SYSTEM

Today also we have to go to the COVID19 Test Lab center, wait in the queue to get our COVID19 test done. As Technology is growing rapidly, we are also moving to a technical world where everything we want to be online. So, with the help of this project, we are bringing the use of technology in the field of medical diagnosis where patients can avail all the diagnosis facilities at their door steps. This project makes the diagnosis process easy and reduces the burden of patients. At a same time, its help the diagnostic center to track all their patients details with their test reports. This access friendly software provides quick and effective services which helps the diagnostic center to increase their sales and profit.

III. SYSTEM DESIGN

Design is the first step in the development phase for any techniques and principles for the purpose of defining a device, a process or system in sufficient detail to permit its physical realization. Once the software requirements have been analyzed and specified the software design involves three technical activities - design, coding, implementation and testing that are required to build and verify the software. The design activities are of main importance in this phase, because in this activity, decisions ultimately affecting the success of the software implementation and its ease of maintenance are made. These decisions have the final bearing upon reliability and maintainability of the system. Design is the only way to accurately translate the customer's requirements into finished software or a system.

IV. RELATED WORK

Hospitals, diagnostic labs, mobile testing centers, clinics and healthcare providers around the world are losing hours of productivity that are taking away from patient care due to manually. In response to the COVID-19 pandemic and the need to immediately notify patients of their test. Cloud Based COVID-19 Test Management system that eliminates manual processes with full regulatory compliance and automated test result notifications.

As the spread of COVID-19 continues to reshape our daily lives, COVID-19 laboratory processes with a faster response to COVID-19 Test requirements. COVID-19 management system provides a streamlined approach to patient data, sample management, reporting, and an automated test results notification system.

V. CONCLUSION

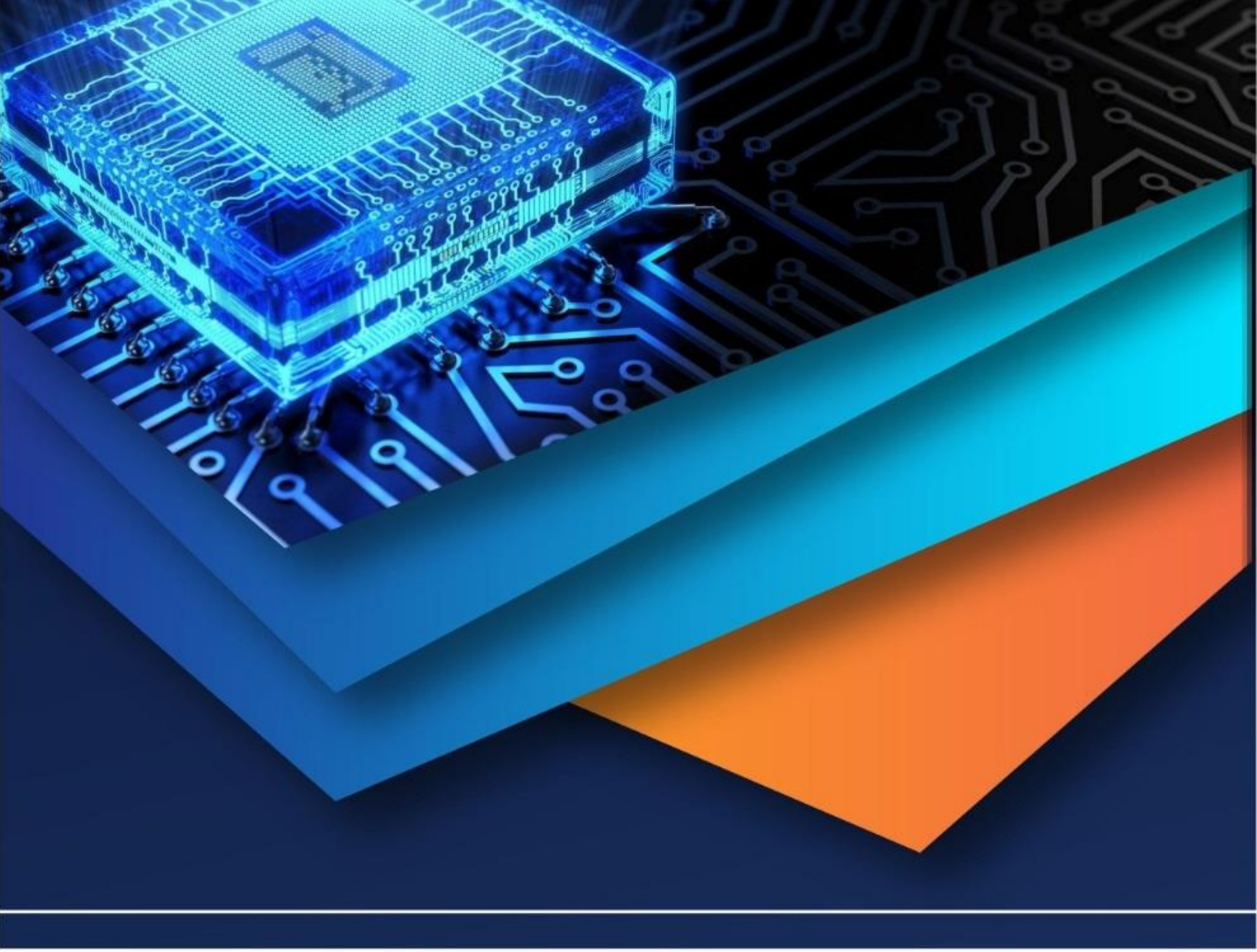
Cloud Based COVID19 Testing Management System is very much graceful and lively. Patients have to register to the portal by giving their details and then they can take appointment through online with minimal effort. The Phlebotomist comes to patient address to collect the sample. Once test is done and test report is generated patient can download the report by logged in to the portal. This system can be implemented in diagnostic labs and clinics.

Automation of the entire system improves the productivity.

1) It provides a friendly graphical user interface which proves to be better when compared to the existing system.
2) It gives appropriate access to the authorized users depending on their permissions.
3) It effectively overcomes the delay in communications.
4) Updating of information becomes so easier.
5) System security, data security and reliability are the striking features.
6) The System has adequate scope for modification in future if it is necessary.

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