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A Mini Project Report on

"COVID-19 Testing Management System using PHP and MySQL"

Submitted by

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Under the Guidance of

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CERTIFICATE

Certified that the **mini project work** entitled **"COVID-19 Testing Management System using PHP and MySQL"** is carried out by **Ms. HAJEERA KHANUM [4RA20SCS03]** respectively, a bonafide student of **RAJEEV INSTITUTE OF TECHNOLOGY, Hassan** in partial fulfillment for the award of **Master of Technology** in **COMPUTER SCIENCE AND ENGINEERING** of Visvesvaraya Technological University, Belagavi during the year 2021-2022. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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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 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 is designed to overcome all challenges related to the management of diagnostic that were used to be handled locally and manually.

This is an online COVID19 lab manager application that brings up various COVID19 test working online. 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 minimizing the risk of getting loss because all transactions are recorded.

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CHAPTER 1

INTRODUCTION

1.1 Web Applications

Web applications run through web browsers like Google Chrome. The program runs on a web server, rather than on the PC, or local server for traditional applications. Web application pages interact and respond with users requests, unlike basic website pages where pages are all pre-formatted. The most common example is online shopping application. Most commercial web applications utilise a database to store permanent information such as product descriptions/costs, and customer orders.

Analyse Campaigns of data collected from distributed offices across country or world Display reports in Graphical Form Order Goods with Online Catalogue, easy searching allows customer to keep track of orders and budgets Produce Estimates - Attract visitors to your site. You gain details of what they are interested. You are available 24/7 Educate your workforce Lifestyle questionnaire for employees, advises on a range of wellbeing issues including diet, exercise, & drinking. Deliver News Provide product information online Provide task information for workers on site via mobile devices Allow remote works to enter job completion and get sign off on site

1.2 Advantages of Web Applications

Web Applications deliver many business benefits compared to office based solutions.

- **Zero install** - all PCs have a browser
- **Reduce business costs** - less time spent talking to customers over the phone; eliminate printed materials; allow users to update their own details.
- **Centralized data** is secure and easy to backup.
- **Quick and easy updates.**
- **Reach** anybody, anywhere in the world.
- **Available** 24 hours a day, 7 days a week.
- **Low spec PCs or smart phones** can be used. Online training can be completed at

user's own time and pace.

- **Direct access** to latest information - for Employees where every they are located.
- **Always up-to-date**.

1.3 Developing Web Applications Project

Paul Stanley Software has developed bespoke web applications for UK clients since 1998. They possess the comprehensive programming experience that pure design web companies lack. They have developed complex commercial applications which have very reliably and successfully over 5 years. When sites must look great They work with partner design companies. They have an in-depth knowledge of web technologies. ASP, ASP .Net, Java Script, HTML & CSS, PHP and ddatabses: SQL Server, Access and MySQL.

1.4 Description of the Project

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 downloads report.

In COVID19 Testing Management System we use PHP and MySQL database. It has three modules i.e.

1. **Admin**
2. **User (Patient)**

Admin Module

Admin is the super user of the website who can manage everything on the website. Admin can log in through the login page

- **Dashboard:** In this section, the admin can see all detail in brief like the total, assigned and the sample collected and completed tests.

- **Phlebotomist:** In this section, the admin can manage Phlebotomist (add, update, delete).
- **Testing**: In this section, the admin can manage all the tests like assign the test to Phlebotomist and update the history.
- **Report:** In this section, the admin can generate two types of report. One is between dates reports and another one is by search. Admin can search the report by order number, name and mobile number.
- **Notification:** In this section, the admin will get a notification for every new test request (notification bell).
- Admin can also update his profile, change the password and recover the password.

User (Patient) Module

- User can visit the application through a URL.
- **Testing:** This section divided into two parts. One is for new user and another one is for registered user. New user (First-time user) needs to provide personal and testing Information. A registered user only needs to provide test information; their personal information will be fetched from the database.
- **Report:** In this section, Users can search their test report using order number, name and registered mobile number.
- **Dashboard:** In this section, the User can see the in which State of how many tests are done.

1.5 Objective of project

The main objective of COVID19 Testing management system to provide a platform where patients can book the test online and get their COVID19 test done at home. 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. Another purpose for developing this application is to generate the report automatically. 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 clinic.

1.6 Scope of the Project

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.

Advantages

- The system allows automate diagnosis system.
- Allows for faster service.
- Allows increased sales and profits for diagnostic labs.
- Easy, user friendly GUI.
- Validation of data will be ensure only accurate valid and complete data stored in the database.
- Easy retrieval or data will be made possible by finding techniques.
- Report generation will help made it easy to analyze the performance.

Disadvantage

It reduces employment as the human efforts are being automated by this system.

CHAPTER 2

LITERATURE SURVEY

Testing is another facet of COVID-19. This process is crucial in informing about the number of people who have fallen ill with COVID-19 and to understand in real-time whether the dynamics of the pandemic are accelerating or decelerating Moreover, it allows tested non-infected individuals to rejoin the workforce without being a risk to others.

[1]. Gollier and Gossner (2020, March). Group Testing Against Covid-19. EconPol Policy

There is insufficient production level of tests in order to conduct mass-testing across all affected countries. These authors call for "group-testing" as a way to get around the problem, but there might be practical problems related to such measures e.g., the maximum number of people present in a group and the acceptable error band for tests in groups. find that counties in Texas that adopted shelter-in-place orders earlier than the statewide shelter-in-place order experienced a 19 to 26 percent fall in COVID-19 case growths two weeks after implementation of such orders. Andersen et al. (2020) find that temporary paid sick leave, a federal mandate enacted in the US, which allowed private and public employees two weeks of paid leave, led to increased compliance with stay-at-home orders. On a more global scale, Hsiang et al. (2020) show that social distancing interventions prevented or delayed around 62 million confirmed cases, corresponding to averting roughly 530 million total infections in China, South Korea, Italy, Iran, France, and USA.

[2]. Baunez, C., Degoulet, M., Luchini, S., Pintus, P., & Teschl, M. (2020). Sub-National Allocation of COVID-19 Tests: An Efficiency Criterion with an Application to Italian Regions, Social Science Research Network

Suggest "test allocation" across regions in a specific country based on the marginal benefit of testing. Using data for Italy, the authors find that the allocation of tests was not efficient in relation to the criteria provided by the authors. Another important related issue is the determinants of compliance behavior. The documented socioeconomic determinants of compliance to lockdowns (or safer-at-home orders) include, among others, income, trust and

social capital, beliefs, public discourse, and to some extent, news channel viewership and show that Americans living in higher-income regions with access to high-speed internet are more likely to comply with social distancing directives. Nevertheless, mobility data have their own restrictions. Mobility data are a proxy for time spent in different locations. They do not allow one to determine the context of the contacts (needed to understand the spread of COVID-19), i.e. whether they place in the workplace or in the general community (Martín-Calvo et al., 2020). Those situations involve different levels of risk of transmission. In regards to the productive activities of the individuals that are tracked, information on the

context is also indeterminate. For those who are working virtually from their homes, for instance, these measures do not capture the value added from the time that they allocate to their jobs. It is also likely that the quality of these measures can deteriorate when overall unemployment rates and job disruptions are high (Gupta et al., 2020).[1] Telecom operator data are deemed to be more representative compared to location data, as telecom data are not limited to people with smartphones, GPS locator, and history of travel using GPS location

[3]. Carlsson-Szlezak et al, Phillip, Reeves, M., & Swartz, P. (2020, March). What Coronavirus Could Mean for the Global Economy

There are three main transmission channels. The first is the direct impact, which is related to the reduced consumption of goods and services. Prolonged lengths of the pandemic and the social distancing measures might reduce consumer confidence by keeping consumers at home, wary of discretionary spending and pessimistic about the long-term economic prospects. The second one is the indirect impact working through financial market shocks and their effects on the real economy. Household wealth will likely fall, savings will increase, and consumption spending will decrease further. The third consists of supply-side disruptions; as COVID-19 keeps production halted, it will negatively impact supply chains, labor demand, and employment, leading to prolonged periods of lay-offs and rising unemployment. In particular, Baldwin (2020) discusses the expectation shock by which there is a "wait-and-see" attitude adopted by economic agents. The author argues that this is common during economic climates characterized by uncertainties, as there is less confidence in markets and economic transactions. Ultimately, the intensity of the shock is determined by the underlying epidemiological properties of COVID-19, consumer and firm behavior in the face of adversity, and public policy responses.

[4]. Martín-Calvo, D., Aleta, A., Pentland, A., Moreno, Y., & Moro, E. (2020). Effectiveness of social distancing strategies for protecting a community from apandemic with a datadriven contact network based on census and real-world mobility data. MIT Connection Science, 13

Explain different types of recovery after shocks through the concept of "shock geometry". There are three broad scenarios of economic recoveries, which we mention in ascending order of their severity. First, there is the most optimistic one labelled 'V-shaped', whereby aggregate output is displaced and quickly recovers to its pre-crisis path. Second, there is the 'U-shaped' path, whereby output drops swiftly but it does not return to its pre-crisis path. The gap between the old and new output path remains large. Third, in the case of the very grim 'L-shaped' path, output drops, and growth rates continue to decline. The gap between the old and new output path continues to widen. Notably, Carlsson-Szlezak et al. (2020b) state that after previous pandemics, such as the 1918 Spanish Influenza, the 1958 Asian Influenza, the 1968 Hong Kong influenza, and the 2002 SARS outbreak, economies have experienced 'V-shaped' recoveries. However, the COVID-19 economic recovery is not expected to be straightforward.

This is because the effects on employment due to social distancing measures/lockdowns are expected to be much larger. According to Gourinchas (2020), during a short period, as much as 50 percent of the working population might not be able to find work. Moreover, even if no containment measures were implemented, a recession would occur anyway, fueled by the precautionary and/or panic behavior of households and firms faced with the uncertainty of dealing with a pandemic as well as with an inadequate public health response.

[5]. Eichenbaum et al., M. S., Rebelo, S., & Trabandt, M. (2020a). The Macroeconomics of Epidemics (Working Paper No. 26882; Working Paper Series). National Bureau of Economic Research

Focus on the infection externality problem. They mention that the competitive equilibrium is not Pareto optimal, as agents do not consider that their actions impact the infection and death rates of other economic agents. To properly internalize the externality, the authors suggest that the containment measures are optimal if they are tightened over time in proportion to the spread of infection. If a strict containment policy is enforced from the

beginning, it will have a much more severe impact on the economy. Bethune and Korinek (2020) focus on the infection externality in a more formal manner. The authors develop Susceptible-Infected-Susceptible (SIS) and SIR models to quantify the infection externalities using a decentralized and then the social planners' approach. The authors find that in a decentralized approach, infected individuals continue to engage in economic activities to maximize their utility.

On the other hand, susceptible agents do reduce their activities to reduce the risk of infection. The resulting behavioral outcome is that infected individuals do not engage in adequate social distancing, as they do not internalize the effects of their activities on the overall infection risk. Based on the model assumptions and calibration for the US economy, the results suggest that the infection persists for more than two years. In contrast, with the social planner approach, the planner forcibly reduces the activity of infected agents to mitigate the risks to susceptible agents and eventually to reduce infections to zero. In addition, the authors calculate the marginal cost of additional infection to be $80,000 in the decentralized approach and $286,000 with the social planner's approach (nominal 2020 dollars). This shows that private agents underestimate the cost of the externality, and the social planner's approach of containment of the infected population is Pareto efficient compared to a uniform containment policy.

[6]. Bodenstein et al. M., Corsetti, G., & Guerrieri, L. (2020). Social Distancing and Supply Disruptions in a Pandemic

Rely on a supply-side perspective that is centered on the effects of the pandemic on the parts of the economy that provide essential inputs. The authors develop an integrated framework by combining a standard SIR model containing two groups of a heterogeneous population with a macroeconomic model. The transmission mechanism between the epidemiological variables and the economic variables is through the change in labor supply, i.e. infected people cannot participate in the workforce, which is a direct cost of the disease. The economic activities are divided between two groups: "core" and "non-core" sectors with a low degree of substitutability in production between them.

The former produce raw and intermediate inputs, while the latter produces final-stage outputs. The indirect cost stems from the fact that the slowdown/closure of core industries will affect non-core industries through input-output linkages – what is typically called the

'supply chains' in the media. The social distancing measures help to attenuate deaths and morbidities, hence to curb the decrease in labor supply. The model shows that the absence of social distancing leads to a negative 40 percent deviation from steady state in output in this two-sector economic model. This contraction shrinks to a negative 20 percent deviation from the steady state with the enforcement of social distancing. Intuitively, "All else equal, a lower infection peak shields better the core sector, resulting in economic gains (while reducing the strain on the national health care systems). However, these gains now imply some economic losses from reducing the labor supply and some economic gains from smoothing out the infection peak.

[7]. Krueger et al. Uhlig, H., & Xie, T. (2020). Macroeconomic Dynamics and Reallocation in an Epidemic (Working Paper No. 27047; Working Paper Series). National Bureau of Economic Research

Also focus on the heterogeneity across sectors by introducing a multi-sector economy with varying degrees of elasticity of substitution of consumption across goods. In this case sectors differ according to the riskiness of consuming their respective services. Based on their model, susceptible households substitute consumption from the high-infection sector with those from the low-infection sector in the event of an outbreak. This re-allocation of spending patterns helps maintain a relatively stable consumption path and lowers the risk of being infected from participating – as either a provider or a consumer - in high-infection activities. According to the authors, with all other things equal, this "reallocation" of economic activity may helps reduce the number of infections i.e. flatten the curve. Other researchers try to model the endogenous response of economic agents and timevarying nature of infection risks. Quaas (2020) and Dasaratha (2020) provide theoretical propositions of

behavioral responses to various changes in policies or infection levels. Alfaro *et al.* (2020) modify the existing SIR models to account for optimizing decisions on social interaction based on the infection risks. Typically, infection rates are taken as exogenous in SIR modelS. However, after accounting for heterogeneity in preferences, they find that preference traits, such as patience, altruism, and reciprocity, play important roles in reducing the infection externalities.

An approach that balances strict social distancing restrictions with social preferences is expected to help mitigate the economic and public health costs. To provide an example,

Argente et al. (2020) find that public disclosure of COVID-19 cases in Seoul, South Korea led to a decrease in foot-traffic to neighborhoods/areas with more cases. These data were calibrated into an SIR model with a heterogenous population to account for infection transmission and economic outcomes. The authors find that, compared to a scenario with no disclosure, public disclosure led to a decrease in infection by 400,000 cases and deaths by 13,000 cases over a period of 2 years. The same policy is also expected to lower economic costs by 50%. Fernández-Villaverde and Jones (2020) extend the endogenous behavioral response by accounting for time-variation of infection rate or R_o parameter in SIR models.

[8]. Ludvigson et al. Ma, S., & Ng, S. (2020). Covid19 and the Macroeconomic Effects of Costly Disasters (Working Paper No. 26987; Working Paper Series). National Bureau of Economic Research

Find that, in a fairly conservative scenario without non-linearities, pandemics such as COVID-19 are tantamount to large, multipleperiod exogenous shocks. Using a 'costly disaster' index, the authors find that multi-period shocks in US (assumed to be a magnitude of 60 standard deviations from the mean of the costly disaster index for a period of 3 months) can lead to a 12.75 percent drop in industrial production, a 17 percent loss in service employment, sustained reductions in air travel, and macroeconomic uncertainties which linger for up to five months. Jordà et al. (2020) analyze the rate of return on the real natural interest rate (the level of real returns on safe assets resulting from the demand and supply of investment capital in a non-inflationary environment) from the 14th century to 2018. Theoretically, a pandemic is supposed to induce a downward negative shock on the real natural interest rate. This is because investment demand decreases due to excess capital per labor unit (i.e. a scarcity of labor being utilized), while savings flows increase due to either precautionary reasons or to replace lost wealth. The authors find that real natural rate remains depressed for a period of 40 years, decreasing to -1.5 percent within 20 years. Consumption patterns and debt responses from pandemic shocks have not been analyzed prior to

COVID-19. Using transaction-level household data, Baker et al. (2020a) find that households sharply increased their spending during the initial period in specific sectors such as retail and food spending. These increases, however, were followed by a decrease in overall spending. Binder (2020) conducted an online survey of 500 US consumers to understand their concerns and responses related to COVID-19, which indicated items of consumption on which they were spending either more or less.

[9]. Agarwal et al., Alomar, A., Sarker, A., Shah, D., Shen, D., & Yang, C. (2020). Two Burning Questions on COVID-19: Did shutting down the economy help. Can we (partially) reopen the economy without risking the second wave

Develop a synthetic control group from mobility restriction interventions applied in different countries to understand the trade-off between different levels of interventions in US. They find that a small decrease in mobility reduces the number of deaths; however, after registering a 40 percent drop in mobility, the benefits from mobility restrictions (in terms of the number of deaths) diminish. Using a counterfactual scenario, the authors find that lifting severe mobility restrictions and retaining moderate mobility restrictions (e.g. by imposing limitations in retail and transport locations) might effectively reduce the number of deaths in US. Others such as Rampini (2020) make the case for sequential lifting of lockdown measures for the younger population at the initial stages followed by the older population at later stages.

CHAPTER 3

PROBLEM STATEMENT

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 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.

CHAPTER 4

SYSTEM ANALYSIS

4.1 Hardware Requirements

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

Hardware requirements

- PROCESSOR : Intel Core ,i5
- RAM : 1 GB
- HARD DISK : 80 GB

4.2 Software Requirements

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

Software requirements

- OPERATING SYSTEM : Windows 7/ XP/8/10
- WEB BROWSER :GOOGLE CHROME OR ANY COMPATIBLE BROWSER
- FRONT END: HTML, CSS, JAVA SCRIPT.
- SERVER SIDE SCRIPT : PHP
- DATABASE :MYSQL
- WEB SERVER : APACHE

CHAPTER 5

SYSTEM DESIGN

5.1 ER Notation

There is no standard for representing data objects in ER diagrams. Each modeling methodology uses its own notation. The original notation used by Chen is widely used in academics texts and journals but rarely seen in either CASE tools or publications by non-academics. Today, there are a number of notations used; among the more common are Bachman, crow's foot, and IDEFIX.

All notational styles represent entities as rectangular boxes and relationships as lines connecting boxes. Each style uses a special set of symbols to represent the cardinality of a connection. The notation used in this document is from Martin. The symbols used for the basic ER constructs are:

- **Entities** are represented by labeled rectangles. The label is the name of the entity. Entity names should be singular nouns.
- **Relationships** are represented by a solid line connecting two entities. The name of the relationship is written above the line. Relationship names should be verbs
- **Attributes**, when included, are listed inside the entity rectangle. Attributes which are identifiers are underlined. Attribute names should be singular nouns.
- **Cardinality** of many is represented by a line ending in a crow's foot. If the crow's foot is omitted, the cardinality is one.

Existence is represented by placing a circle or a perpendicular bar on the line. Mandatory existence is shown by the bar (looks like a 1) next to the entity for an instance is required.

Optional existence is shown by placing a circle next to the entity that is optional.

5.2 Entity Relationship Diagram

In software engineering, an entity–relationship model (ER model) is a data model for describing the data or information aspects of a business domain or its process requirements, in an abstract way that lends itself to ultimately being implemented in a database such as

a relational database. The main components of ER models are entities (things) and the relationships that can exist among them. Entity–relationship modelling was developed by Peter Chen and published in a 1976 paper. However, variants of the idea existed previously, and have been devised subsequently such as super type and subtype data entities and commonality relationships.

An entity–relationship model is a systematic way of describing and defining a business process. The process is modelled as components (entities) that are linked with each other by relationships that express the dependencies and requirements between them, such as: one building may be divided into zero or more apartments, but one apartment can only be located in one building. Entities may have various properties (attributes) that characterize them. Diagrams created to represent these entities, attributes, and relationships graphically are called entity–relationship diagrams. An ER model is typically implemented as a database. In the case of a relational database, which stores data in tables, every row of each table represents one instance of an entity. Some data fields in these tables point to indexes in other tables; such pointers represent the relationships.

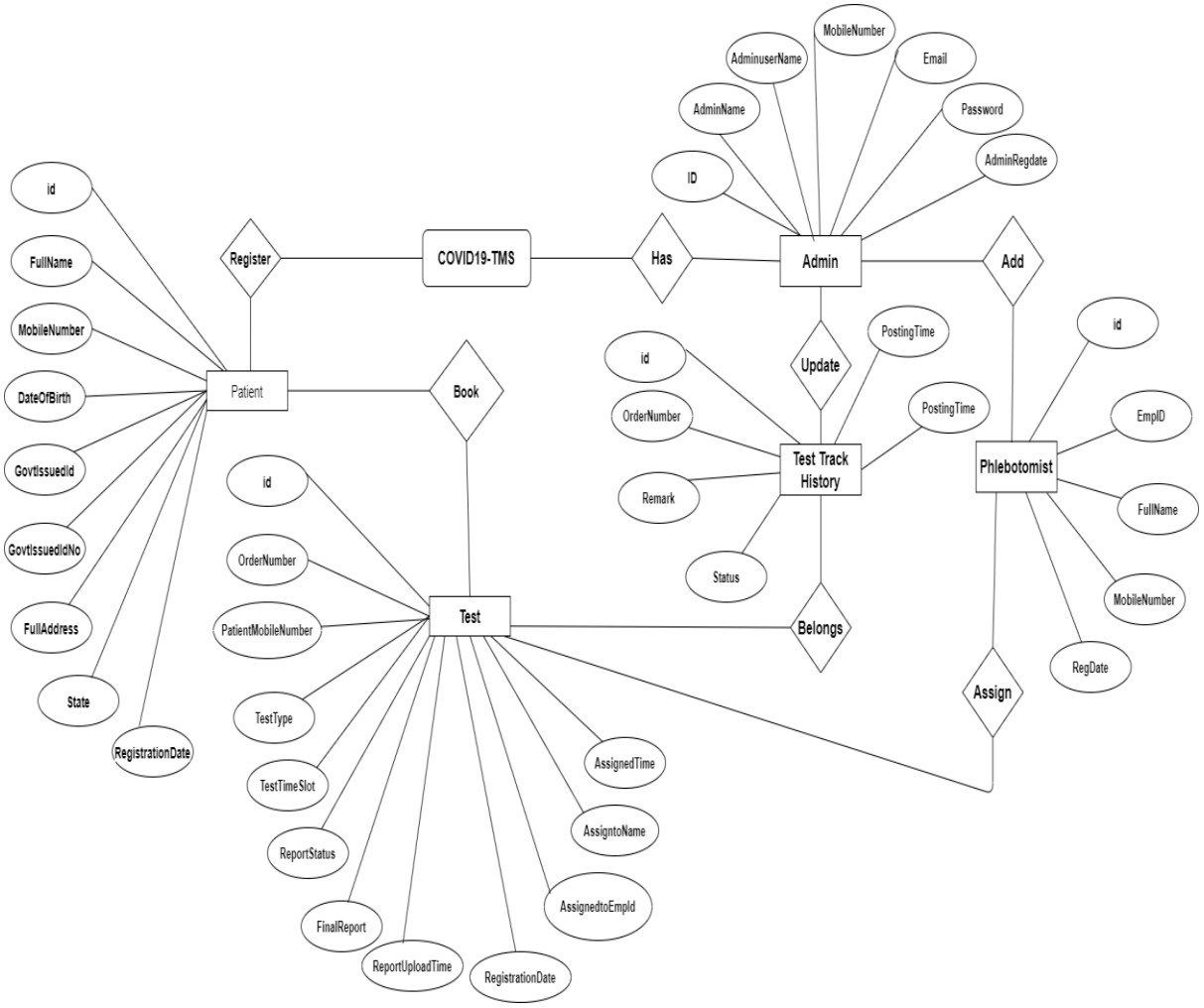


Fig 5.1 : E-R Diagram

This three schema approach to software engineering uses three levels of ER models that may be developed.

5.3 UML Diagram

Actor:

A coherent set of roles that users of use cases play when interacting with the use `cases.

Use case: A description of sequence of actions, including variants, that a system performs that yields an observable result of value of an actor.
UML stands for Unified Modeling Language. UML is a language for specifying, visualizing and documenting the system. This is the step while developing any product after analysis.

The goal from this is to produce a model of the entities involved in the project which later need to be built. The representation of the entities that are to be used in the product being developed need to be designed.

5.4 Usecase Diagram

Use case diagrams model behavior within a system and helps the developers understand of what the user require. The stick man represents what's called an actor.

Use case diagram can be useful for getting an overall view of the system and clarifying that can do and more importantly what they can't do.

Use case diagram consists of use cases and actors and shows the interaction between the use case and actors.

- The purpose is to show the interactions between the use case and actor.
- To represent the system requirements from user's perspective.
- An actor could be the end-user of the system or an external system.

A Use case is a description of set of sequence of actions. Graphically it is rendered as an ellipse with solid line including only its name. Use case diagram is a behavioral diagram that shows a set of use cases and actors and their relationship. It is an association between the use cases and actors. An actor represents a real-world object. Primary Actor – Sender, Secondary Actor Receiver.

Usecase Diagram

Admin

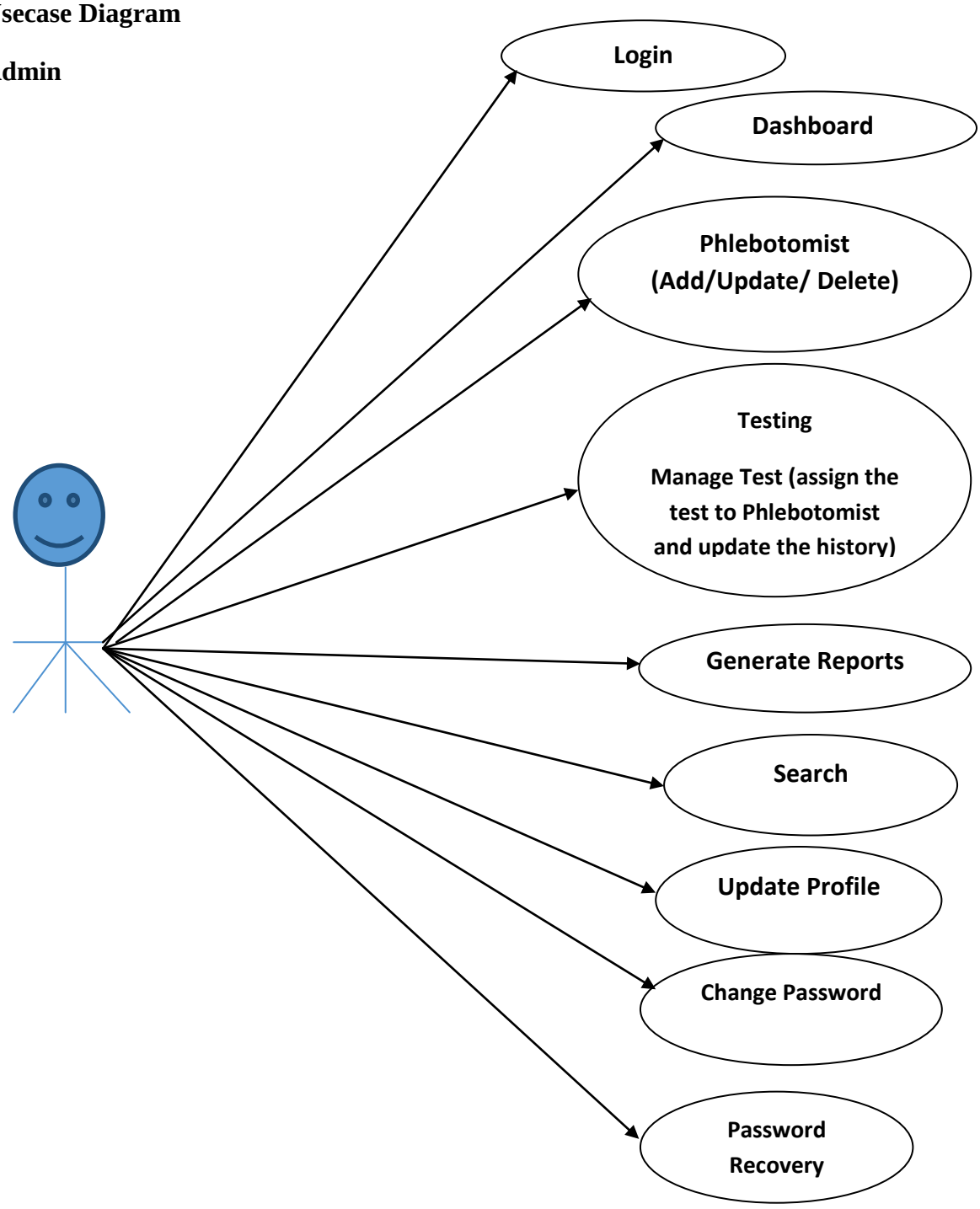


Fig 5.2 : Usecase Diagram (Admin)

Users (Patient)

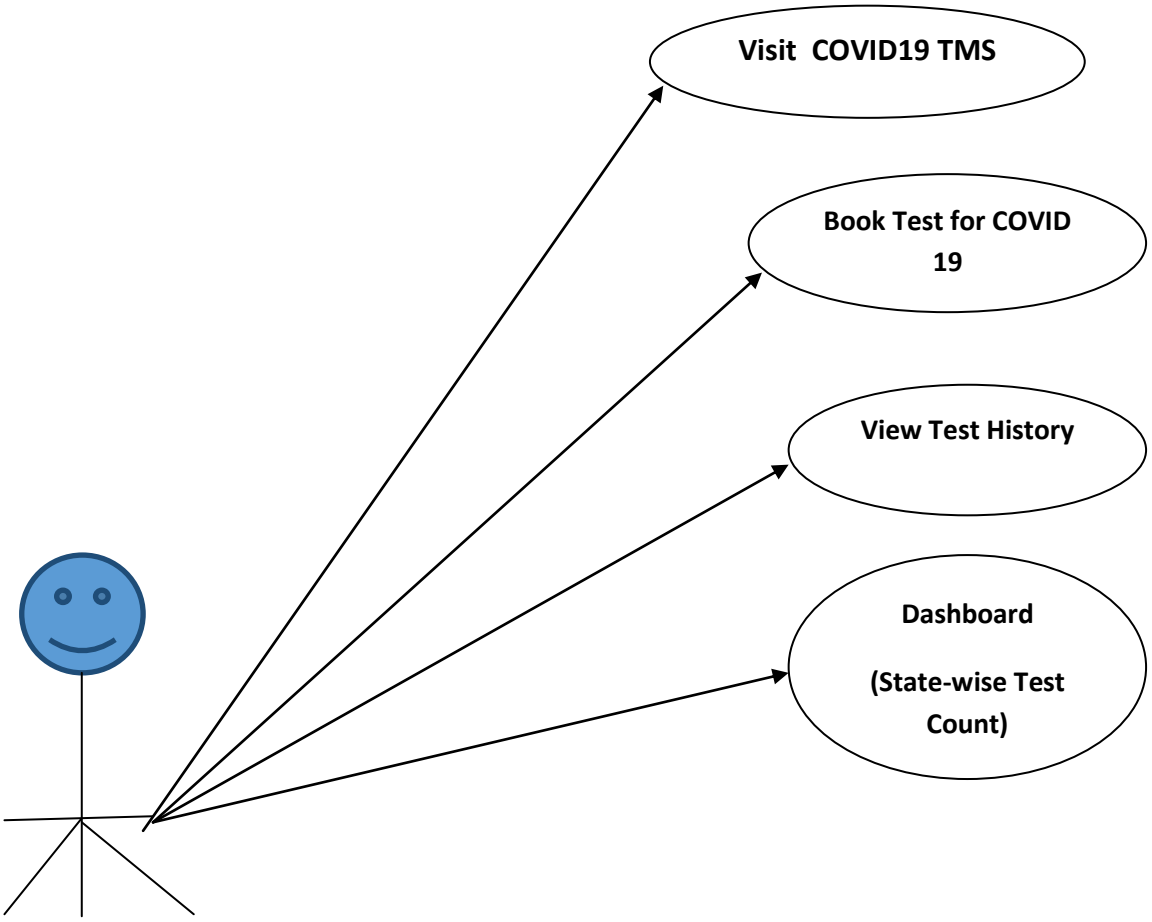
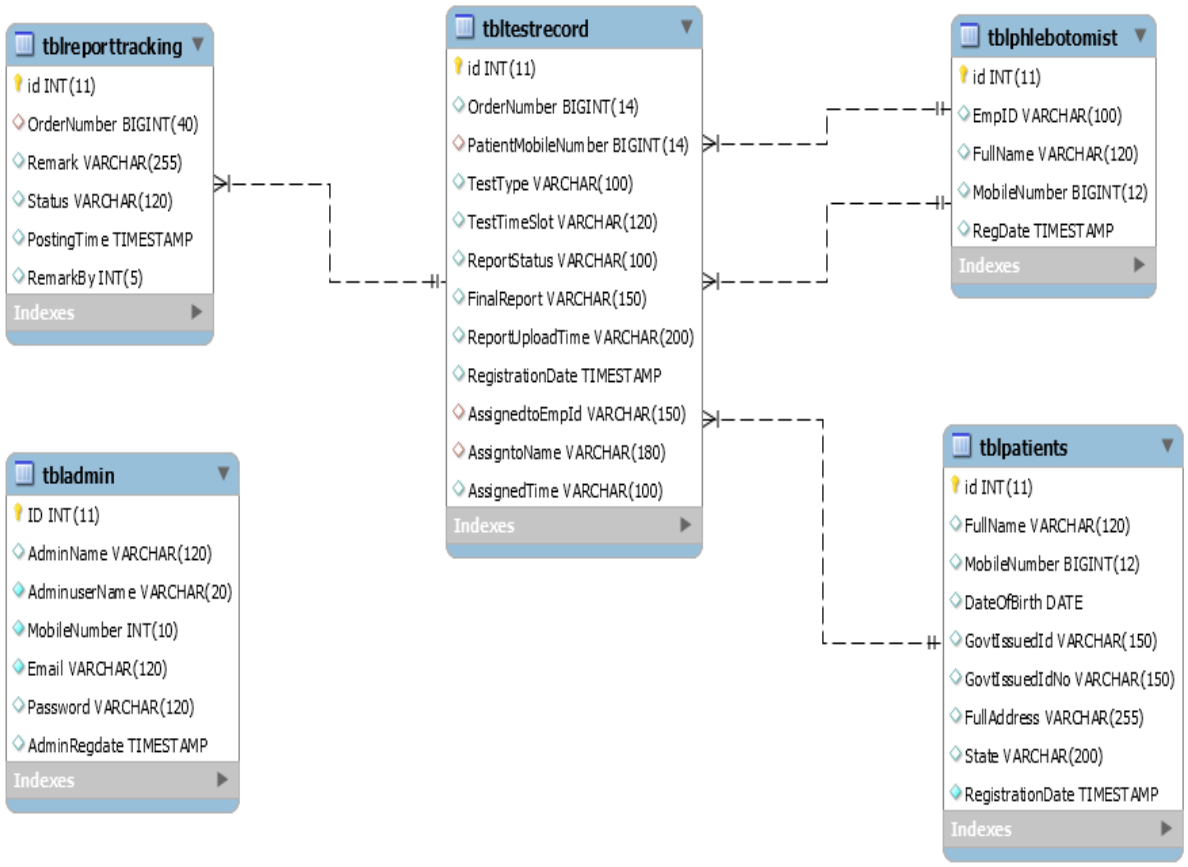


Fig 5.3 : Usecase Diagram (Patient)

5.5 Class Diagram

A description of set of objects that share the same attributes operations, relationships, and semantics



5.6 MySQL Data Tables

Admin Table

This store admin personal and login details.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	**ID**	int(11)			No	*None*		AUTO_INCREMENT
2	**AdminName**	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
3	**AdminuserName**	varchar(20)	latin1_swedish_ci		No	*None*		
4	**MobileNumber**	int(10)			No	*None*		
5	**Email**	varchar(120)	latin1_swedish_ci		No	*None*		
6	**Password**	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
7	**AdminRegdate**	timestamp			Yes	current_timestamp()		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	ID	0	A	No	

tblpatients

This table store the data of patient personal Information.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	FullName	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
3	MobileNumber	bigint(12)			Yes	*NULL*		
4	DateOfBirth	date			Yes	*NULL*		
5	GovtIssuedId	varchar(150)	latin1_swedish_ci		Yes	*NULL*		
6	GovtIssuedIdNo	varchar(150)	latin1_swedish_ci		Yes	*NULL*		
7	FullAddress	varchar(255)	latin1_swedish_ci		Yes	*NULL*		
8	State	varchar(200)	latin1_swedish_ci		Yes	*NULL*		
9	RegistrationDate	timestamp			No	current_timestamp()		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	5	A	No	
MobileNumber	BTREE	No	No	MobileNumber	5	A	Yes	

tbltestrecord

This table stores the patient test record details.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	OrderNumber	bigint(14)			Yes	*NULL*		
3	PatientMobileNumber	bigint(14)			Yes	*NULL*		
4	TestType	varchar(100)	latin1_swedish_ci		Yes	*NULL*		
5	TestTimeSlot	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
6	ReportStatus	varchar(100)	latin1_swedish_ci		Yes	*NULL*		
7	FinalReport	varchar(150)	latin1_swedish_ci		Yes	*NULL*		
8	ReportUploadTime	varchar(200)	latin1_swedish_ci		Yes	*NULL*		
9	RegistrationDate	timestamp			Yes	current_timestamp()		
10	AssignedtoEmpId	varchar(150)	latin1_swedish_ci		Yes	*NULL*		
11	AssigntoName	varchar(180)	latin1_swedish_ci		Yes	*NULL*		
12	AssignedTime	varchar(100)	latin1_swedish_ci		Yes	*NULL*		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	6	A	No	
OrderNumber	BTREE	No	No	OrderNumber	6	A	Yes	

tblreporttracking

This table stores the tracking details of tests.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	OrderNumber	bigint(40)			Yes	*NULL*		
3	Remark	varchar(255)	latin1_swedish_ci		Yes	*NULL*		
4	Status	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
5	PostingTime	timestamp			Yes	current_timestamp()		
6	RemarkBy	int(5)			Yes	*NULL*		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	12	A	No	

tblphlebotomist

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	id	int(11)			No	*None*		AUTO_INCREMENT
2	EmpID	varchar(100)	latin1_swedish_ci		Yes	*NULL*		
3	FullName	varchar(120)	latin1_swedish_ci		Yes	*NULL*		
4	MobileNumber	bigint(12)			Yes	*NULL*		
5	RegDate	timestamp			Yes	current_timestamp()		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	3	A	No	
EmpID	BTREE	No	No	EmpID	3	A	Yes	
FullName	BTREE	No	No	FullName	3	A	Yes	

This table stores the phlebotomist information.

CHAPTER 6

IMPLEMENTATION

This project will be a desktop application to be developed in Dreamweaver CS3 having My SQL as backend.

• Database Design (My SQL)

• Form Design

• Coding

• Testing

• Wamp Server

6.1 Front end

HTML

HTML or Hyper Text Markup Language is the standard markup language used to create Web pages. HTML files and composes them into visible or audible Web pages. The browser does not display the HTML tags and scripts, but uses them to interpret the content of the page. HTML describes the structure of a Website semantically along with cues for presentation, making it a markup language, rather than a programming languageHTML5.

Hyper Text Markup Language is a markup language that web browsers use to interpret and compose text, images and other material into visual or audible web pages. Default characteristics for every item of HTML markup are defined in the browser, and these characteristics can be altered or enhanced by the web page designer's additional use.

CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to change the style of web pages and user interfaces written in HTML and XHTML, the language can

be applied to any kind of XML document, including plain XML, SVG and XUL. Along with HTML and JavaScript, CSS is a cornerstone technology used by most websites to create visually engaging WebPages, user interfaces for web applications, and user interfaces for many mobile applications.

CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content, such as semantically insignificant tables that were widely used to format pages before consistent CSS rendering was available in all major browsers.

Java Script

JavaScript is most commonly used as a client side scripting language. This means that JavaScript code is written into an HTML page. When a user requests an HTML page with JavaScript in it, the script is sent to the browser and it's up to the browser to do something with it.

There are a number of different places where JavaScript can be used but the most common place to use it is in a web page. In fact for most people using JavaScript, in a web page is the only place where they use it.

Let us consider web pages and just what purpose that JavaScript serves within the page.

The first requirement of web page is to define the content of the web page. This is done using a markup language that defines what each of the component parts of the content are. The language that is normally used to markup the content is HTML although XHTML can also be used if you do not require the pages to work in Internet Explorer.

PHP

PHP received mixed reviews due to lacking native Unicode support at the core language level. In 2005, a project headed by Andrei was initiated to bring native Unicode support throughout PHP, by embedding the International Components for Unicode (ICU)

library, and representing text strings as UTF-16 internally. Since this would cause major changes both to the internals of the language and to user code, it was planned to release this as version 6.0 of the language, along with other major features then in development.

However, a shortage of developers who understood the necessary changes, and performance problems arising from conversion to and from UTF-16, which is rarely used in a web context, led to delays in the project. As a result, a PHP 5.3 release was created in 2009, with many non-Unicode features back-ported from PHP 6, notably namespaces. In March 2010, the project in its current form was officially abandoned, and a PHP 5.4 release was prepared containing most remaining non-Unicode features from PHP 6, such as traits and closure re-binding.

6.2 Back End

MYSQL

My SQL "My S-Q-L", officially, but open-source relational database management system (RDBMS).It is named after co-founder Wideness's daughter, My SQL phrase stands for Structured Query Language.

The My SQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. My SQL was owned and sponsored by a single for-profit firm, the Swedish company AB, now owned by Oracle Corporation.

A popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, My SQL, Perl/PHP/Python." Free-software-open source projects that require a full-featured database management system often use My SQL.

WAMP

WAMP stands for "Windows, Apache, MySql, and PHP."WAMP is a variation of LAMP for windows systems and is often installed as software and is often installed as a software and is often installed as a software bundle. It is often used for web development and

internal testing, but may also be used to serve live websites. The most important part of WAMP package is Apache which is used run the web server within windows. By running a local Apache web server on a windows machine, a web developer can test webpage in a web browser without publishing them live on the internet.

6.3 Modules of Project

After all phase have been perfectly done, the system will be implemented to the server and the system can be used.

System Testing

The goal of the system testing process was to determine all faults in our project .The program was subjected to a set of test inputs and many explanations were made and based on these explanations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing

1. Unit testing

2. Integration testing

Unit Testing

Unit testing is commenced when a unit has been created and effectively reviewed .In order to test a single module we need to provide a complete environment i.e. besides the section we would require

- The procedures belonging to other units that the unit under test calls
- Non local data structures that module accesses
- A procedure to call the functions of the unit under test with appropriate parameters

1. Test for the admin module

- **Testing admin login form-**This form is used for log in of administrator of the system. In this form we enter the username and password if both are correct administration page will open otherwise if any of data is wrong it will get redirected

back to the login page and again ask the details.

- **Report Generation:** admin can generate report from the main database.

Integration Testing

In the Integration testing we test various combination of the project module by providing the input.

The primary objective is to test the module interfaces in order to confirm that no errors are occurring when one module invokes the other module. A single module we need to provide a complete environment i.e. besides the section we would require

- The procedures belonging to other units that the unit under test calls
- Non local data structures that module accesses

CHAPTER 7

RESULTS

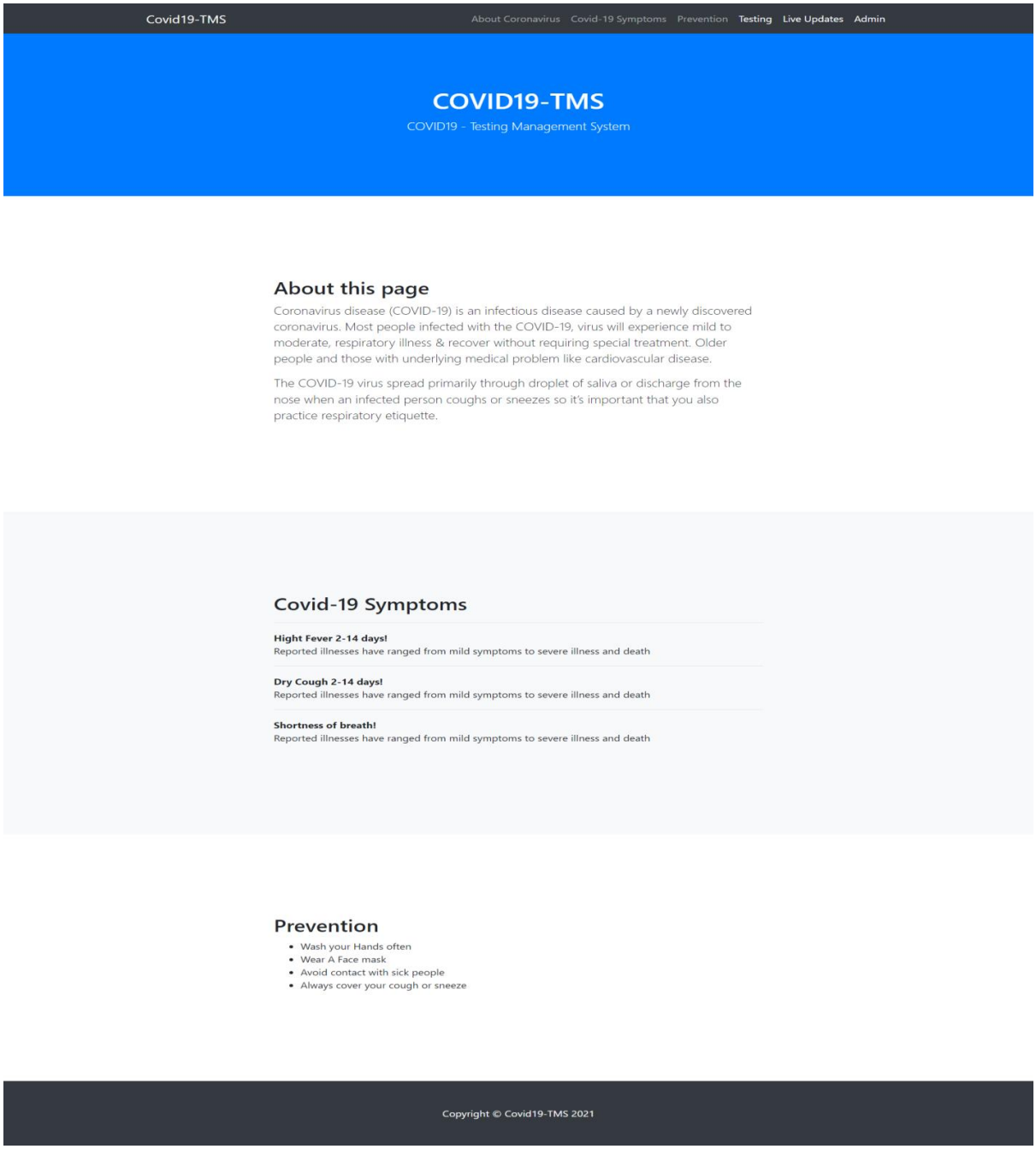


Fig 7.1 : Home Page View

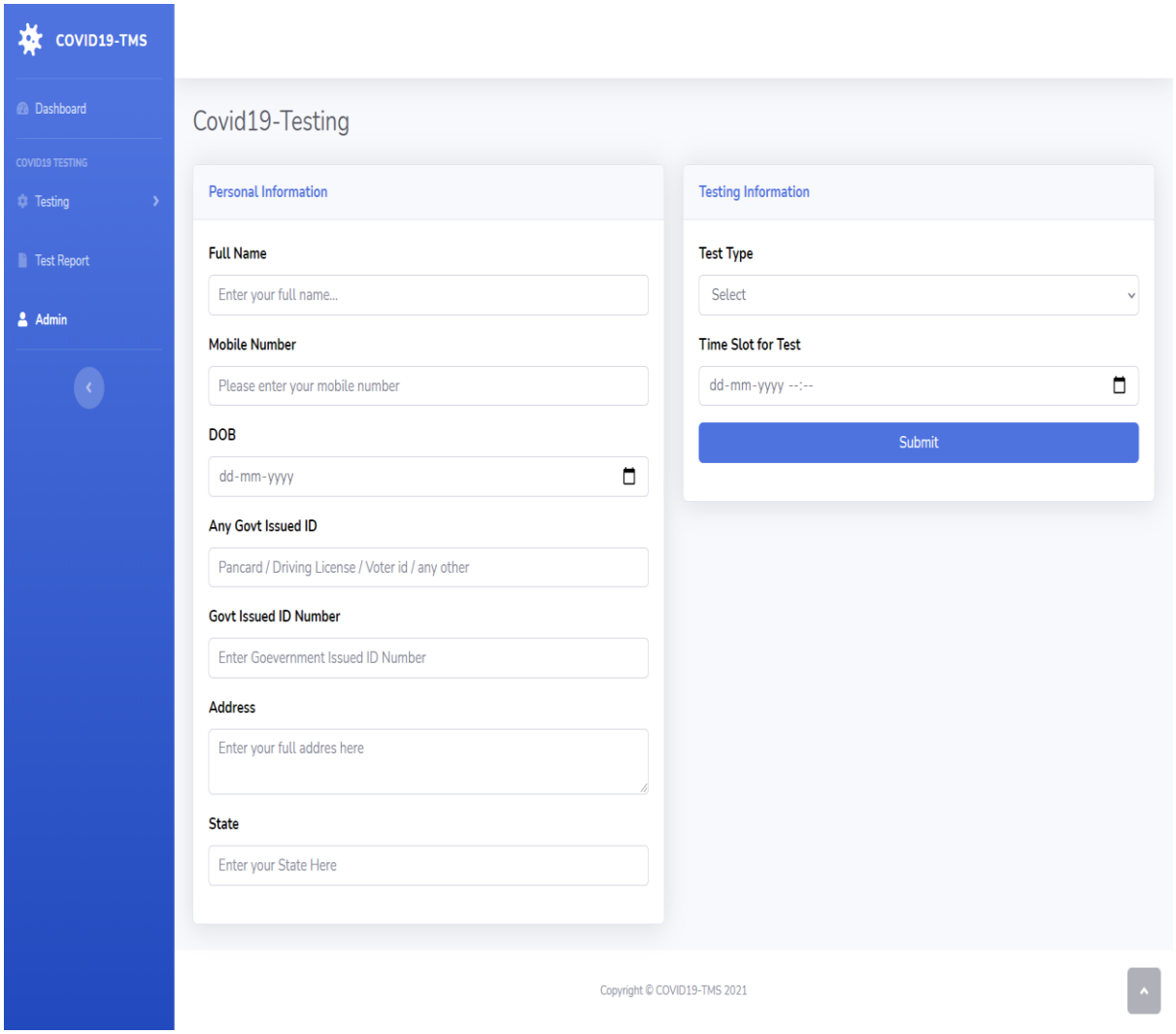


Fig 7.2 : New User (Patient) Test Booking

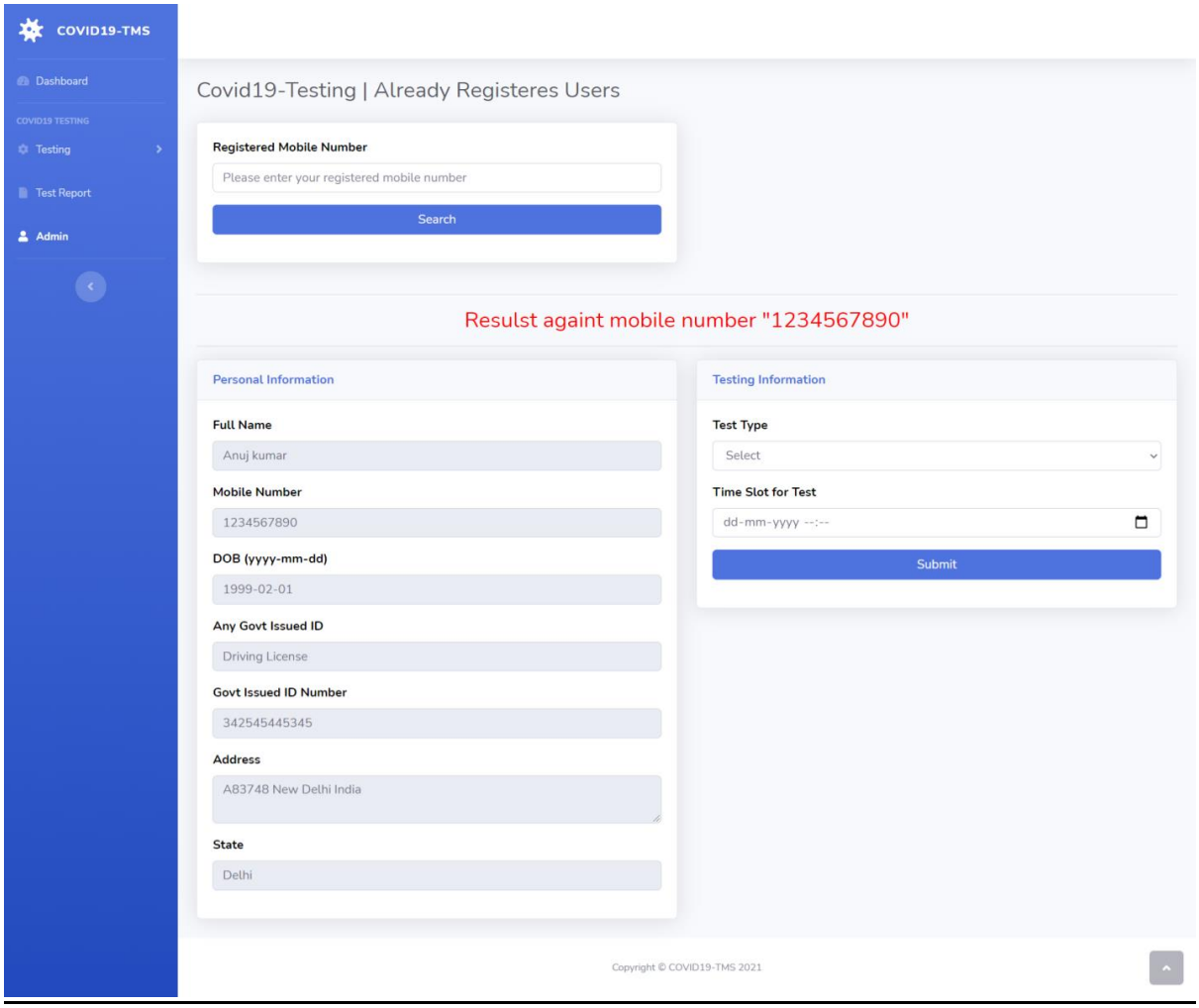


Fig 7.3 : Already Registered User (Patient) Test Booking

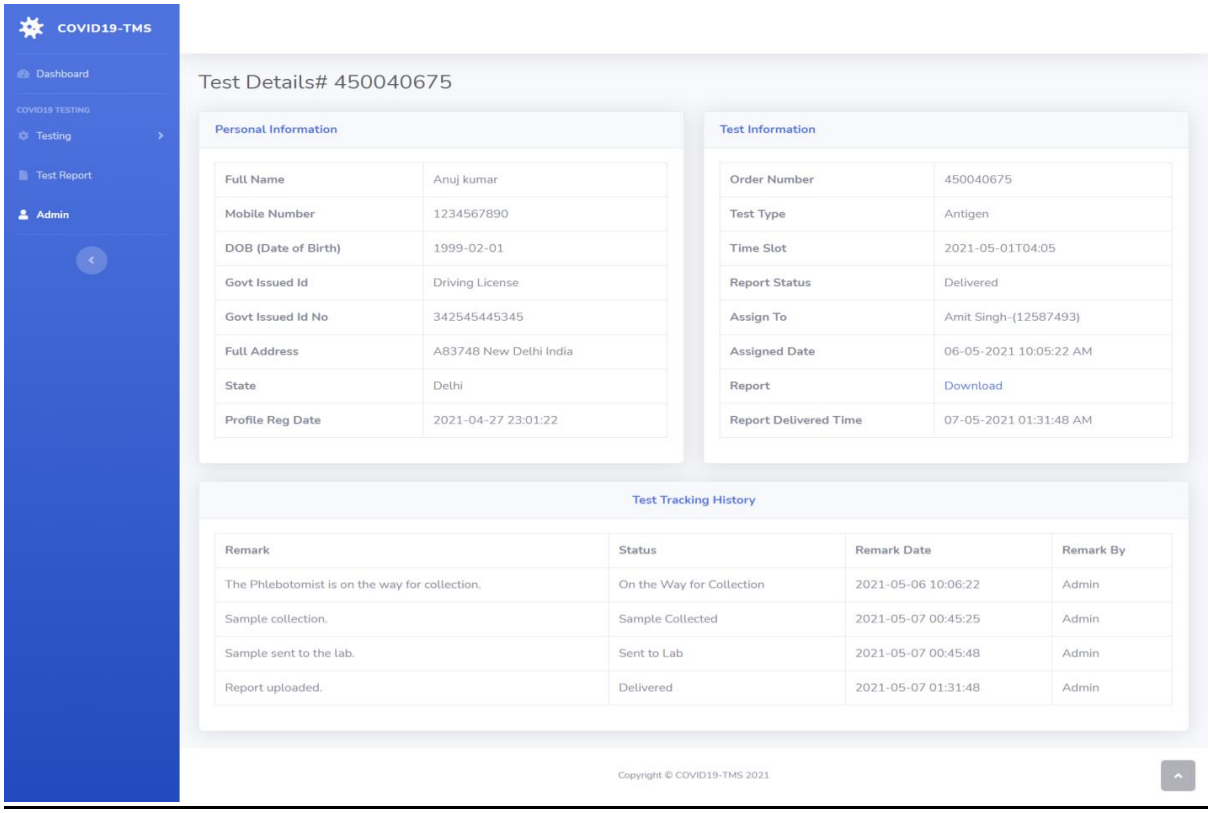


Fig 7.4 : User (Patient) Test Details

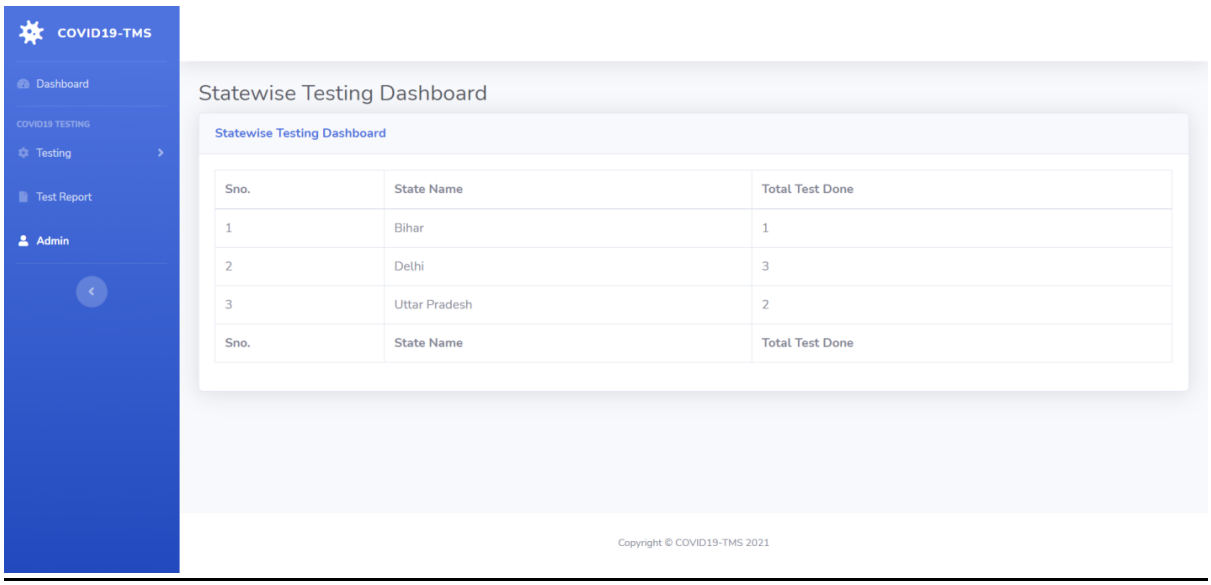


Fig 7.5 : State Wise Dashboard

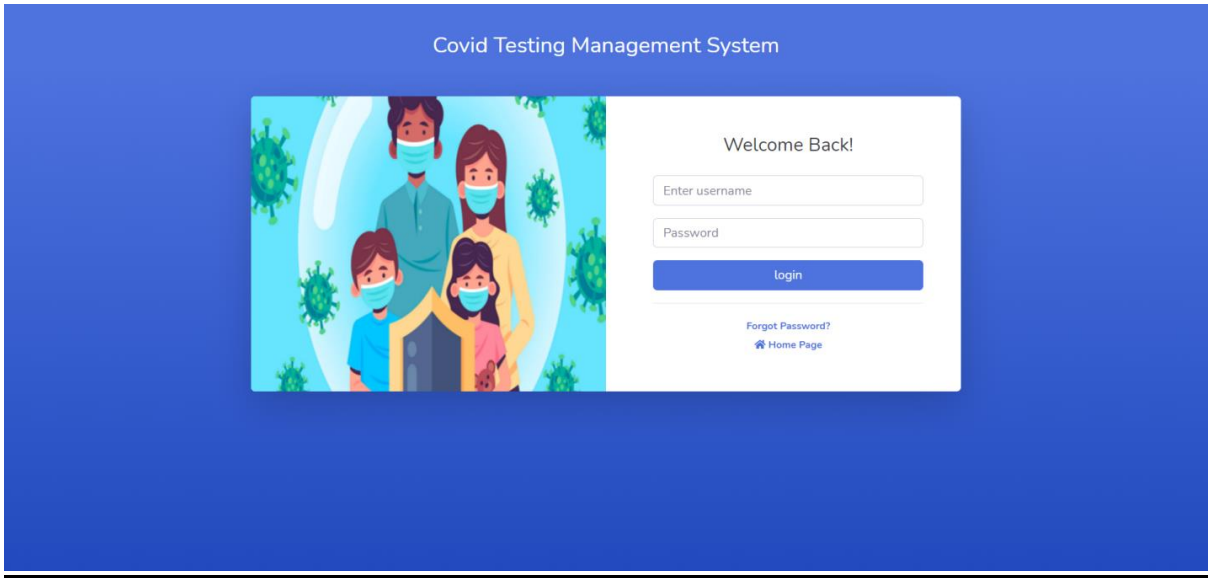


Fig 7.6 : Admin Login

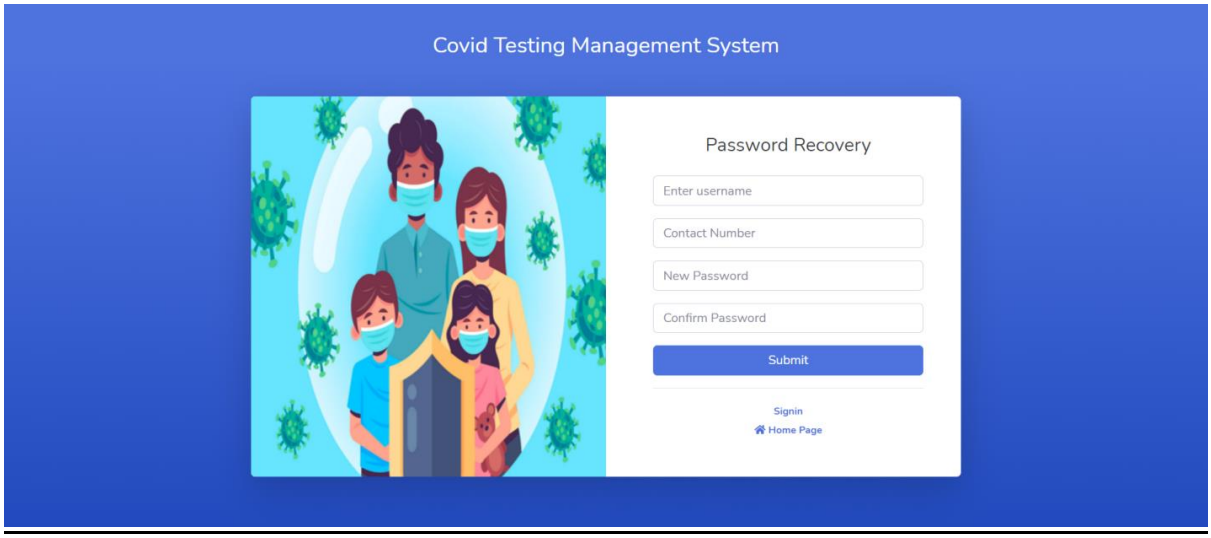


Fig 7.7 : Admin Passsword Recovery

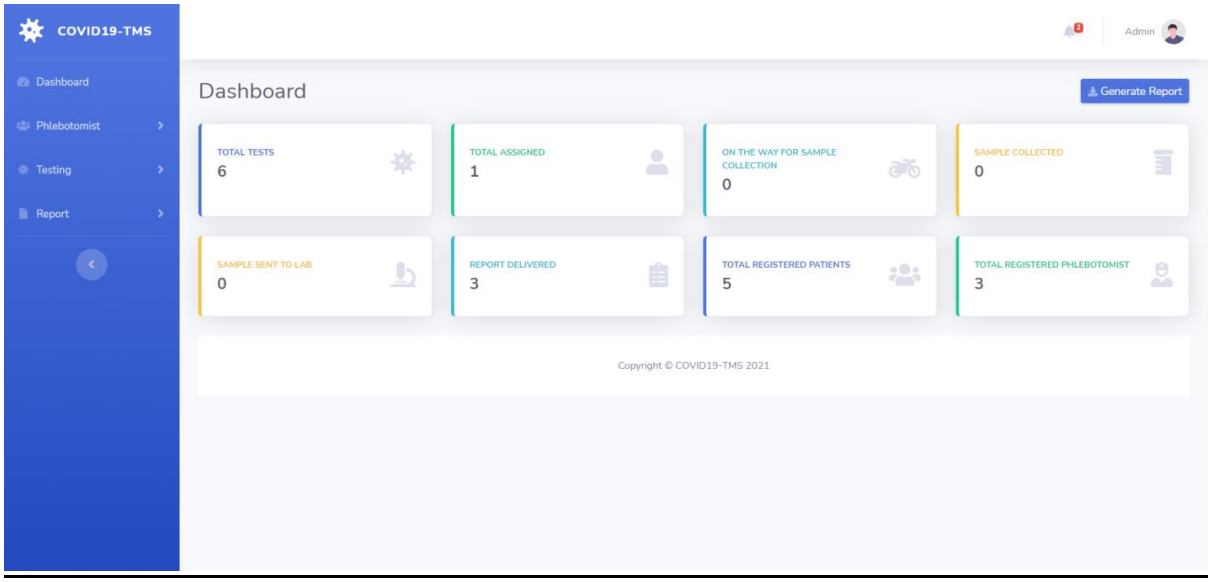


Fig 7.8 : Admin Dashboard

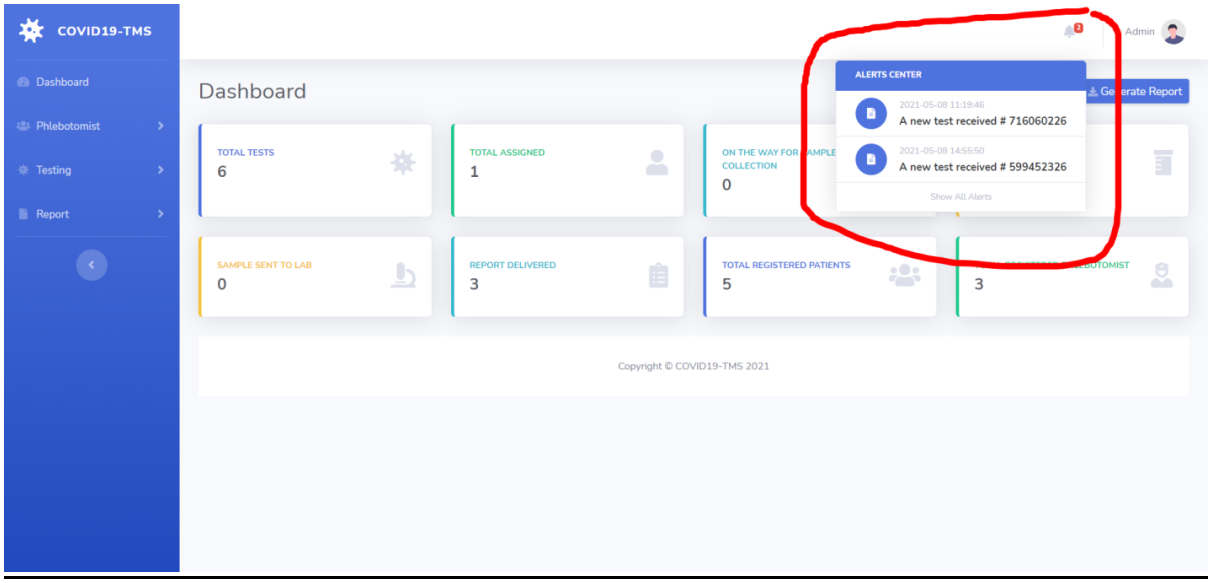


Fig 7.9 : Admin Notification

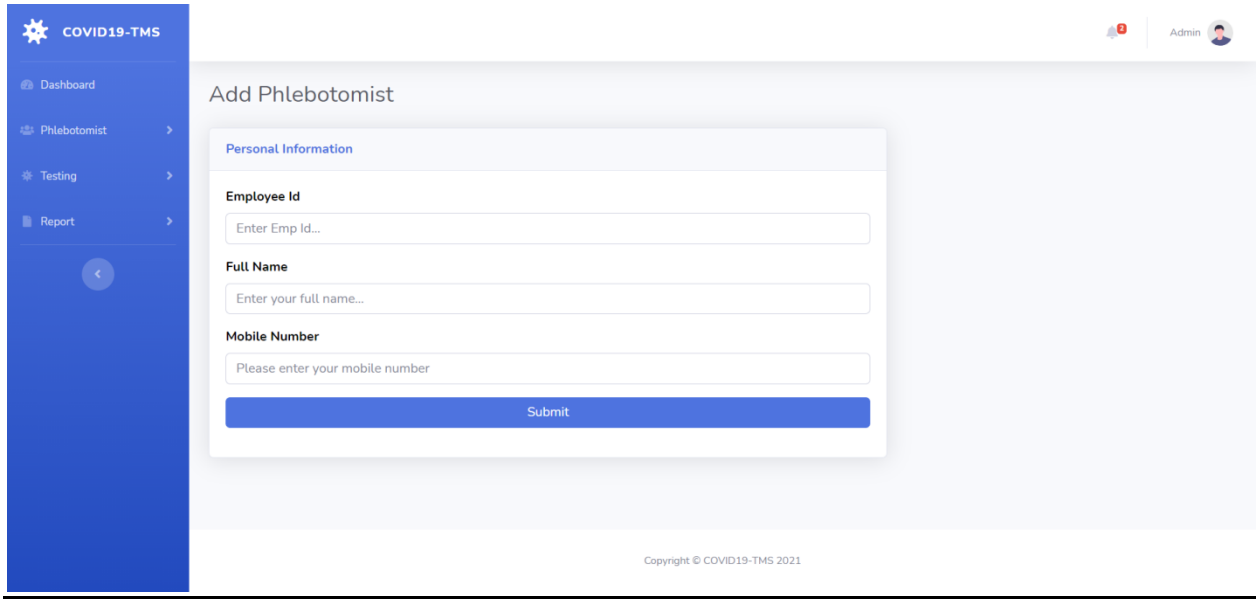


Fig 7.10 : Add Phlebotomist

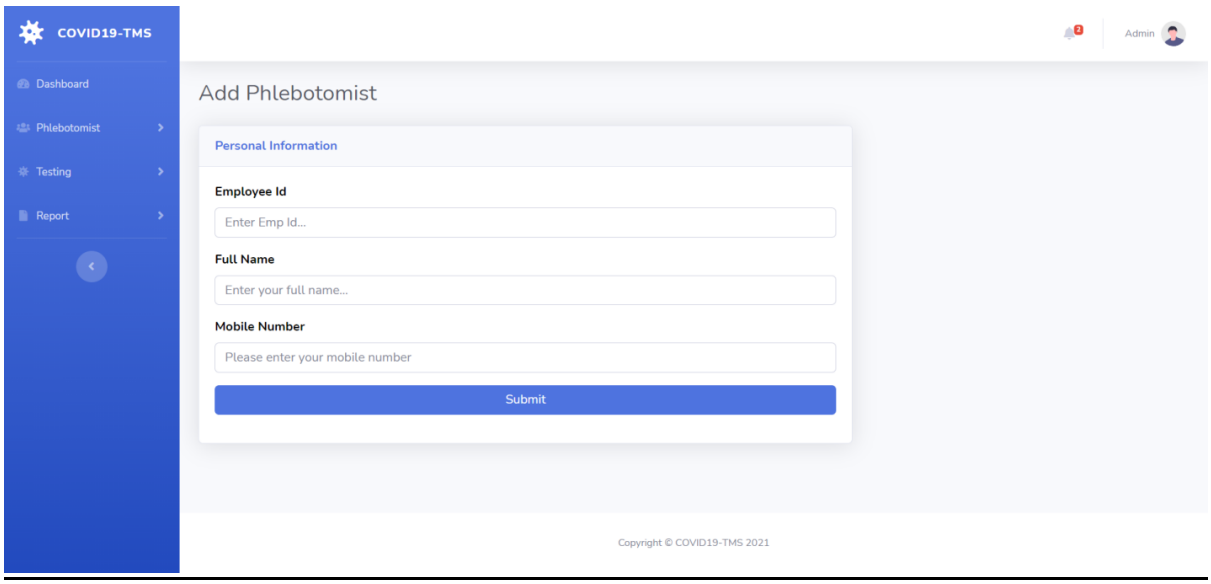


Fig 7.11 : Manage Phlebotomist

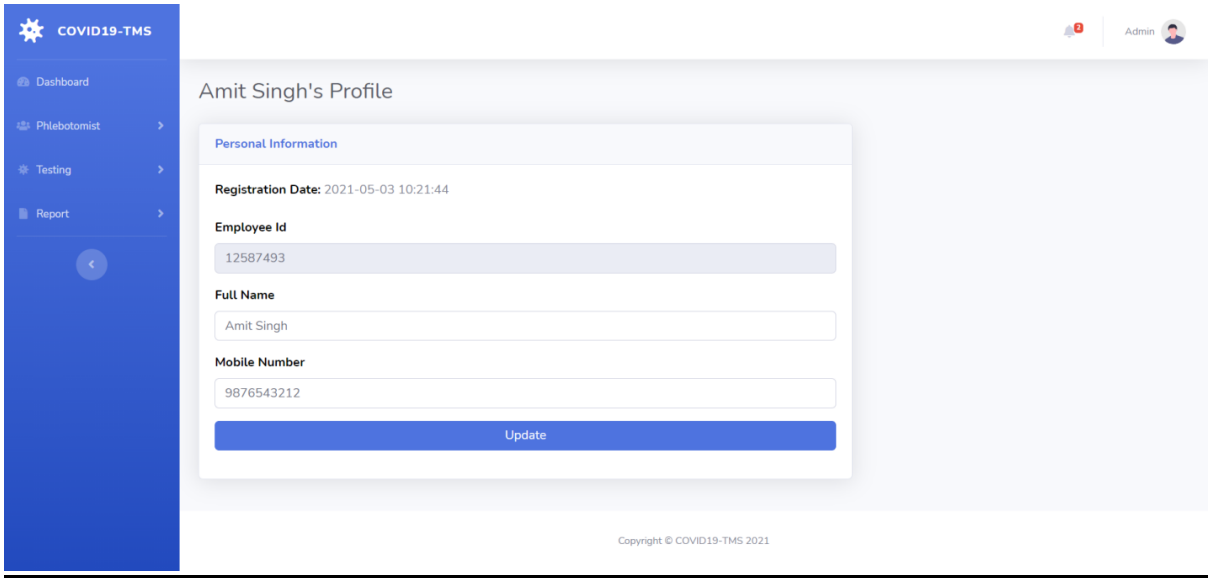


Fig 7.12 : Add/Update Phlebotomist Information

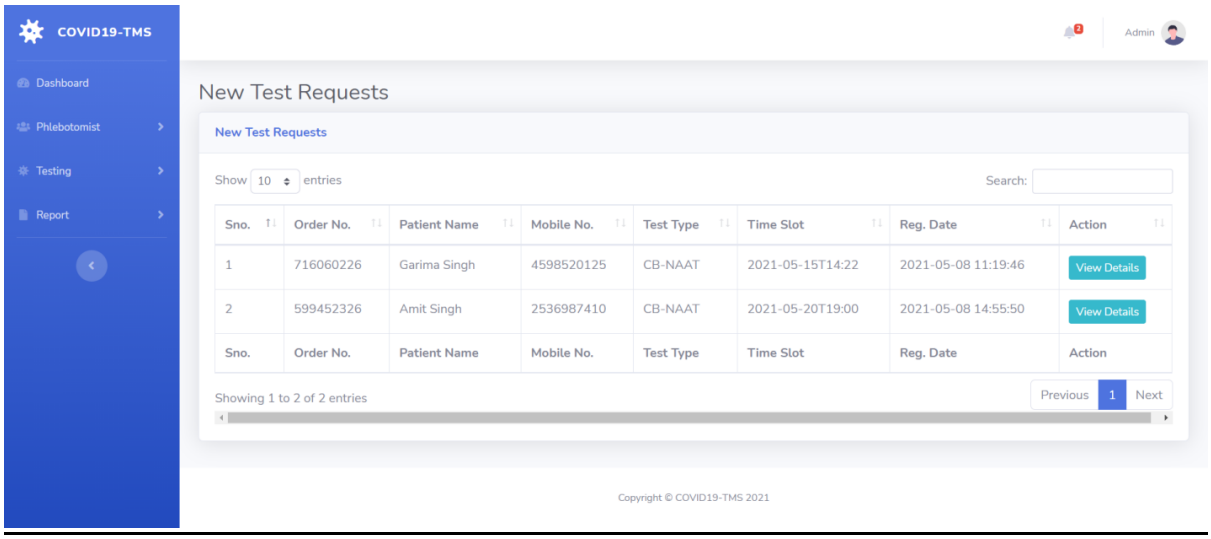


Fig 7.13 : New/Assigned/On the way for collection/Sample Collected / Sent to Lab / Delivered / All Tests

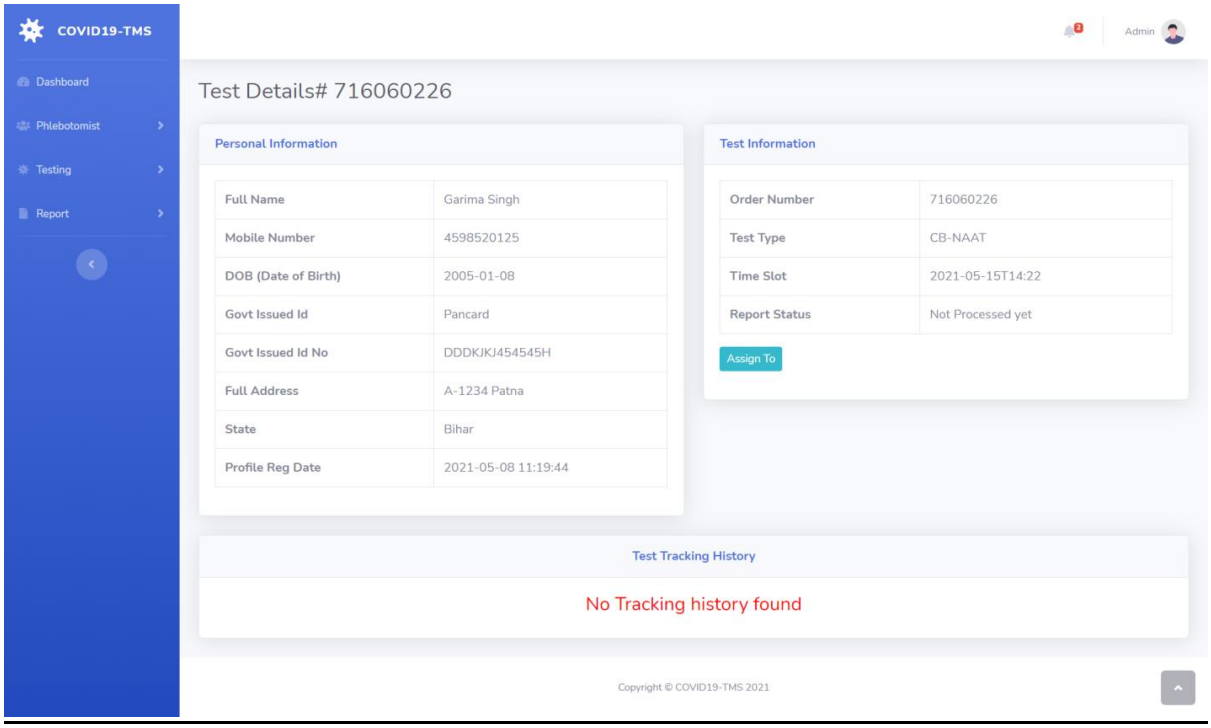


Fig 7.14 : Test Details-1

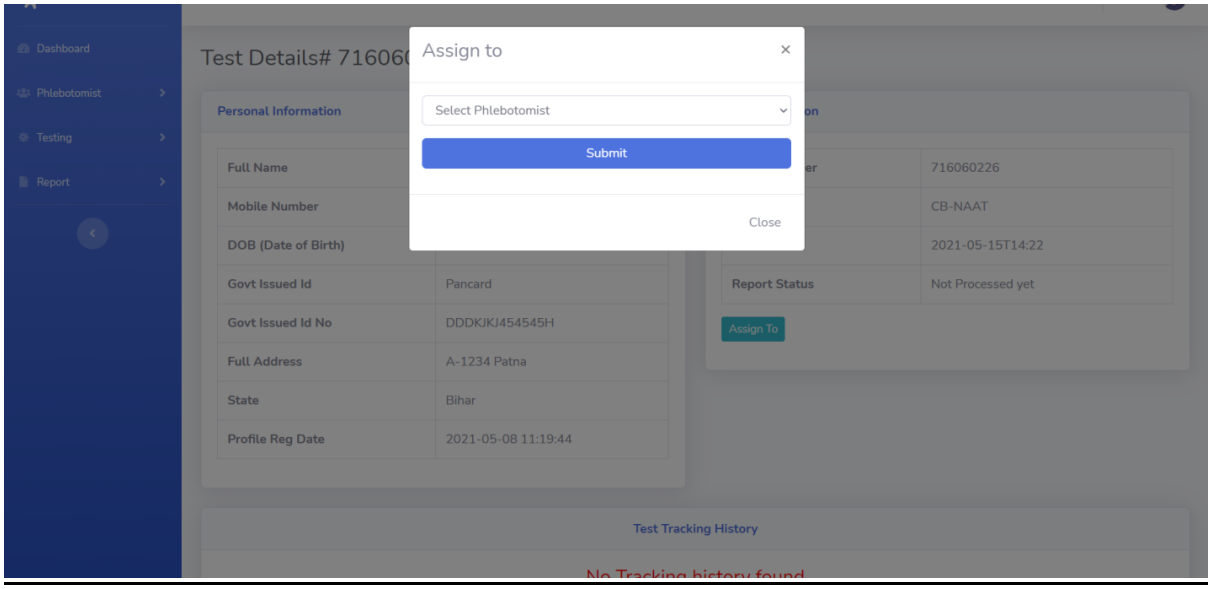


Fig 7.15 : Assigned to

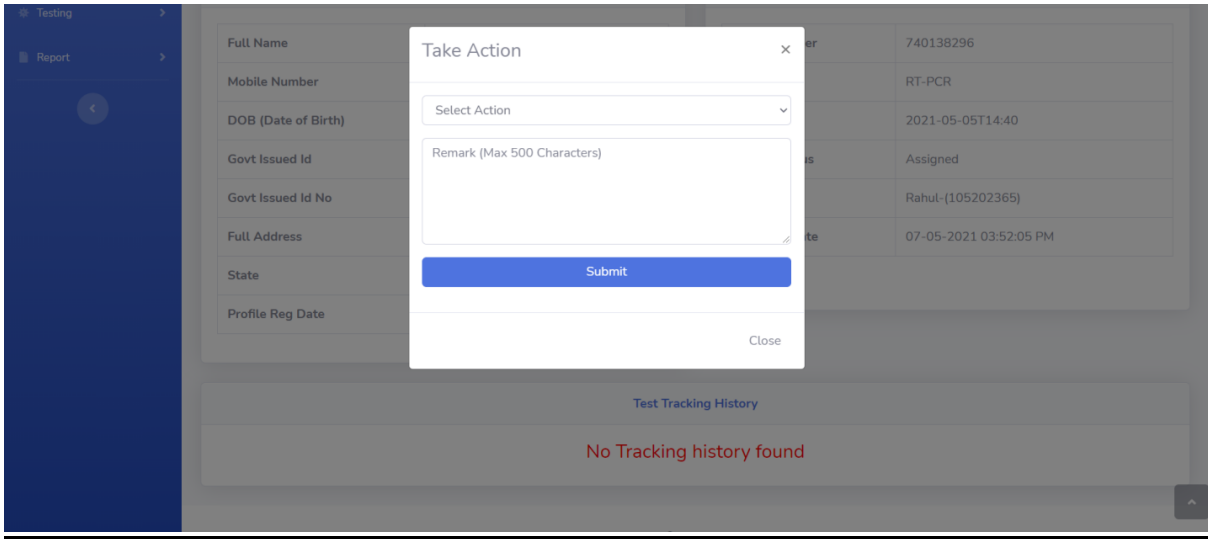


Fig 7.16 : Take Action

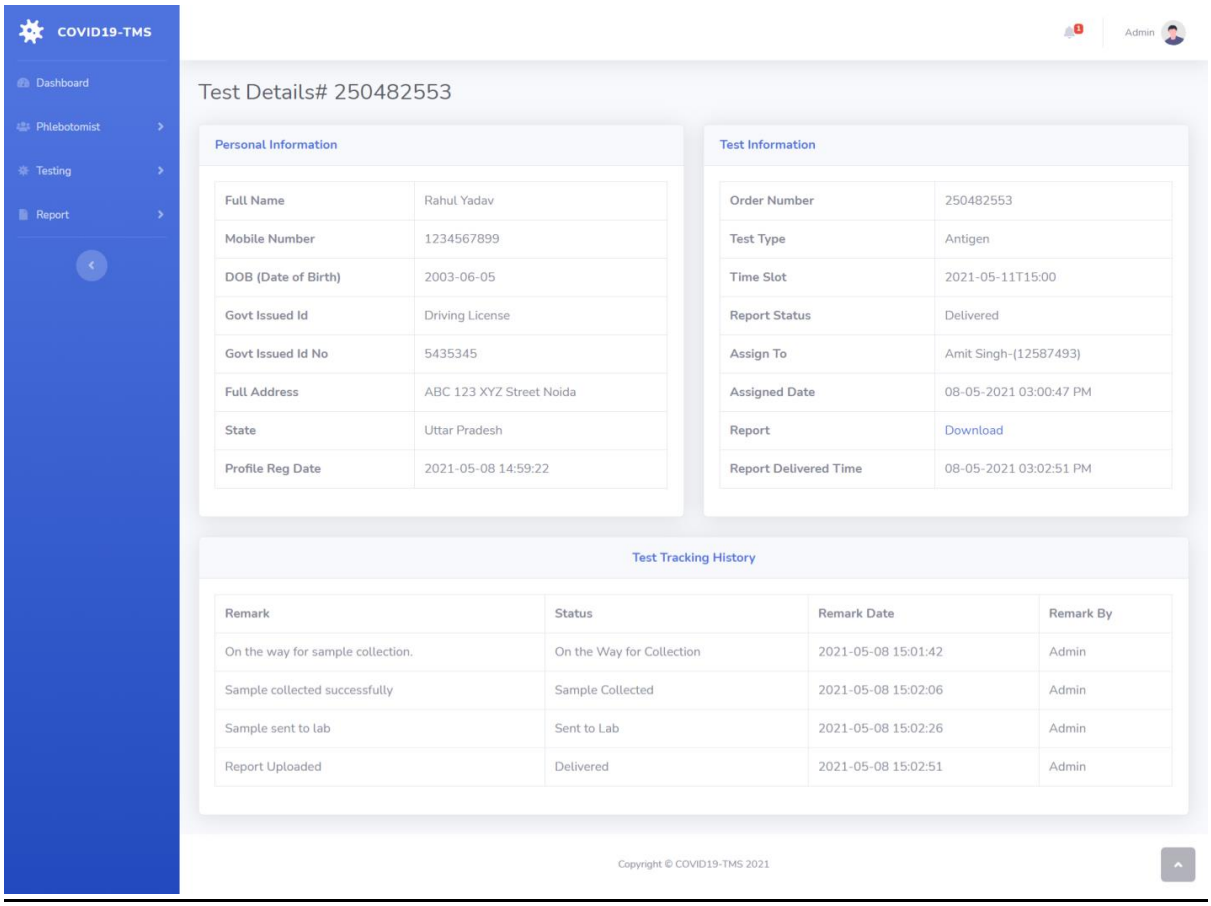


Fig 7.17 : Test Details Admin

Reports

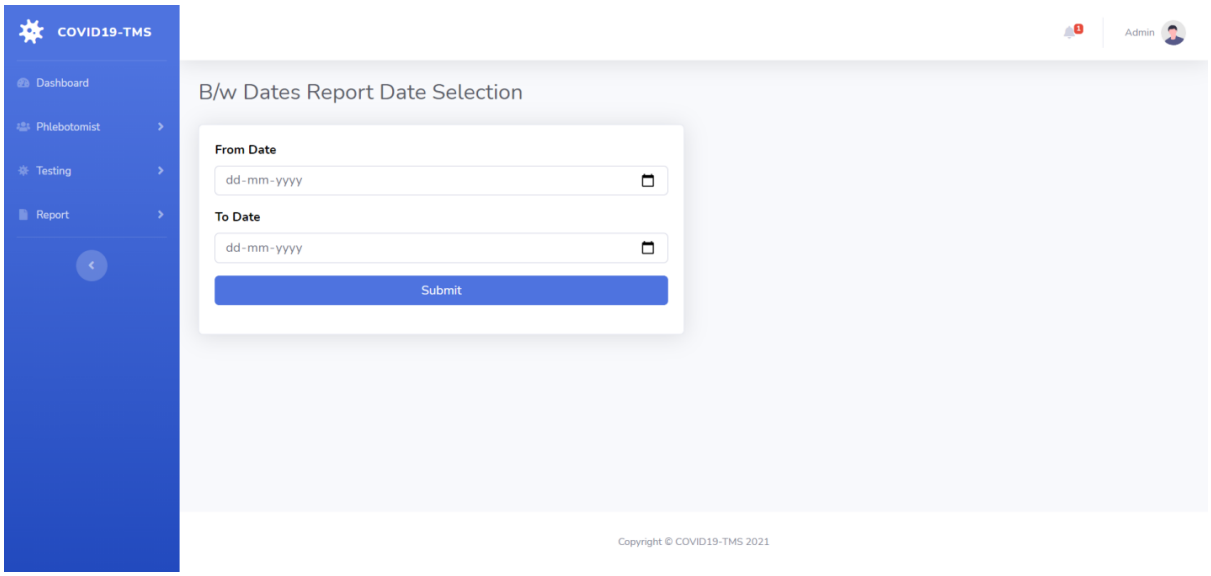


Fig 7.18 : B/w Dates Report Date selection

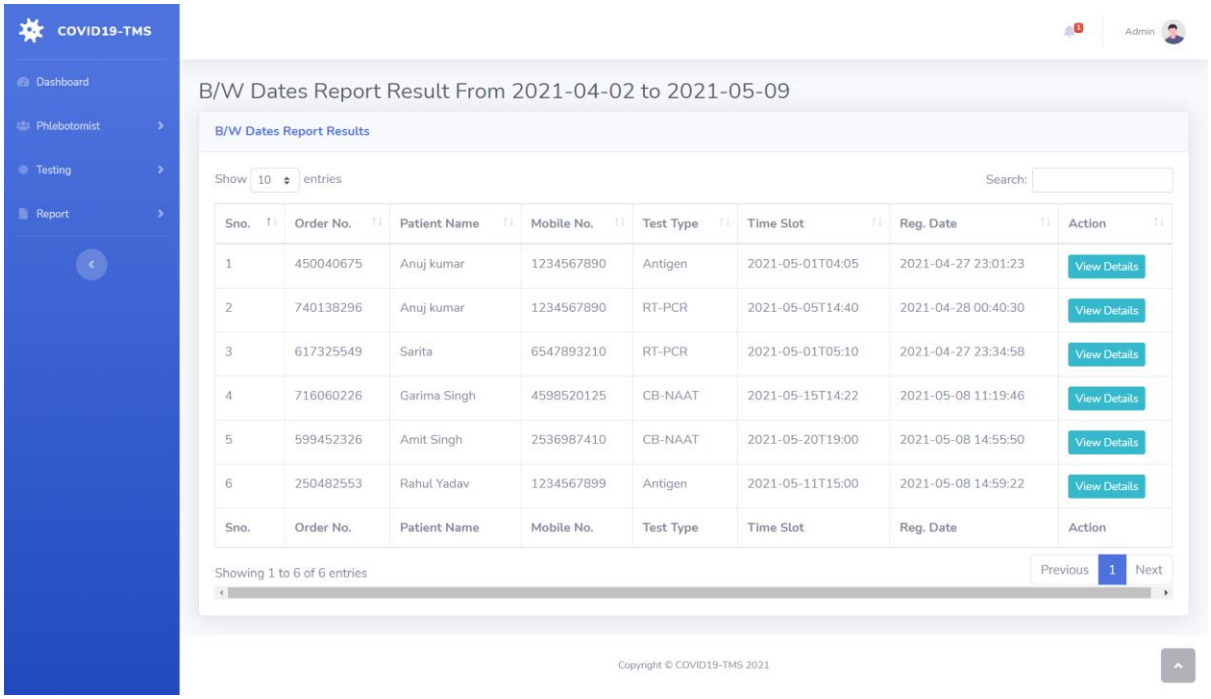


Fig 7.19 : Between Dates Test Result

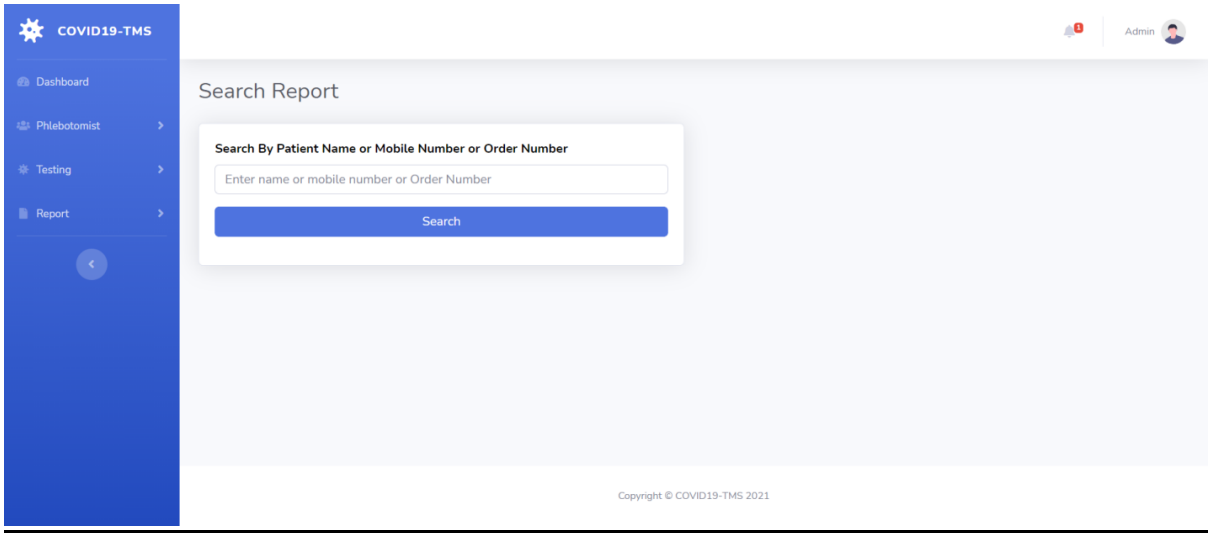


Fig 7.20 : Search Report

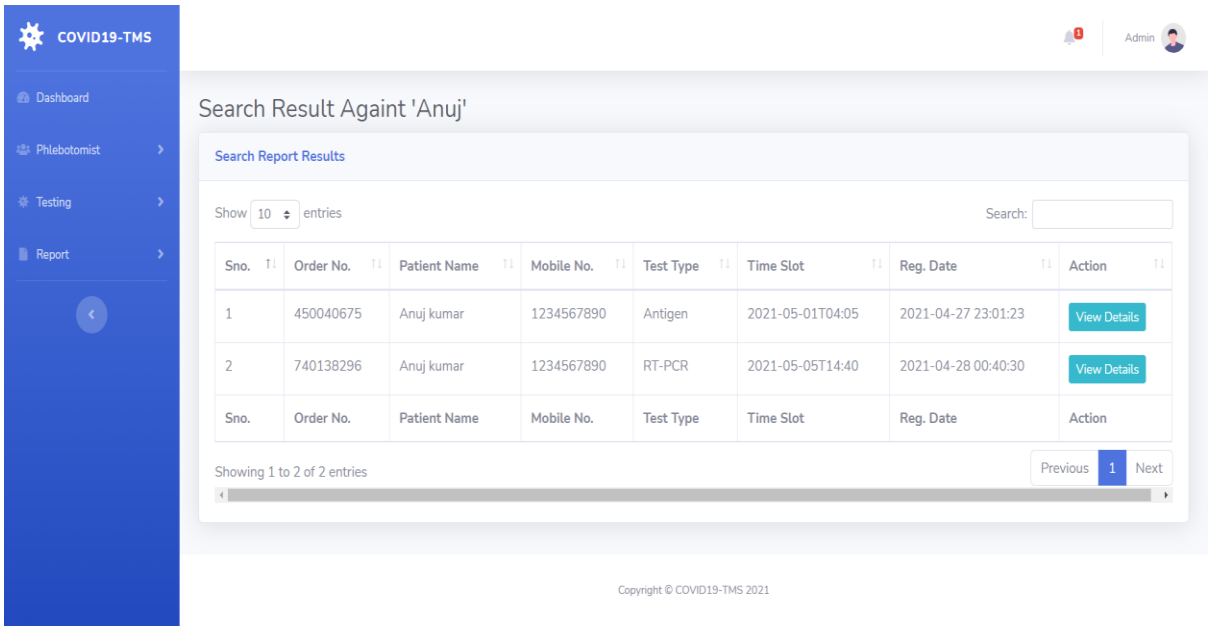


Fig 7.21 : Search Report Result

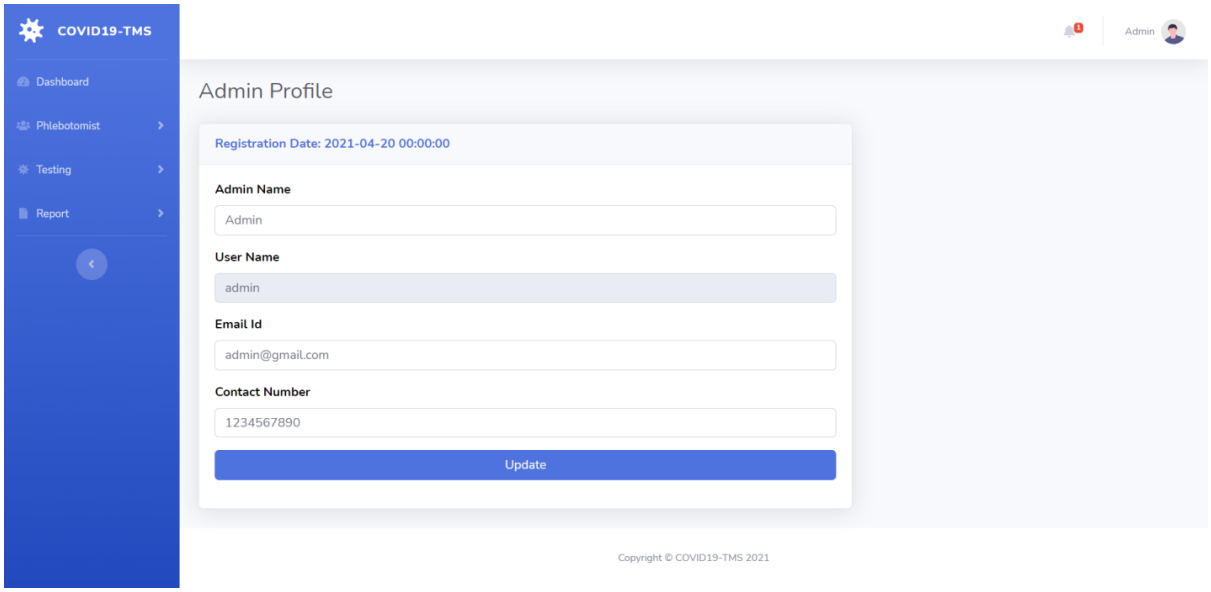


Fig 7.22 : Admin Profile

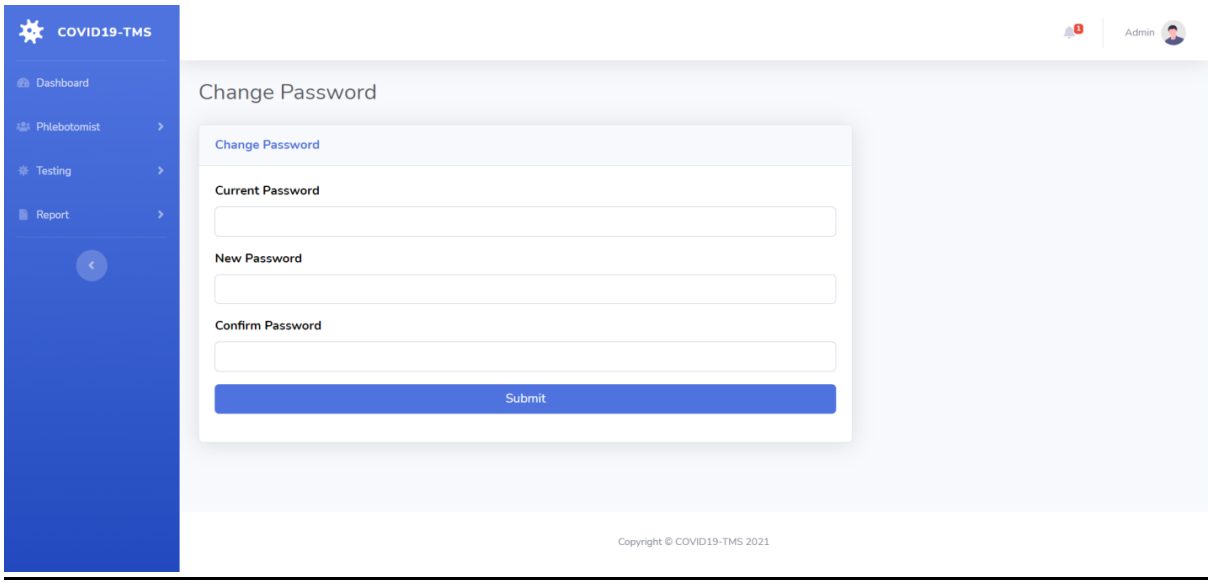


Fig 7.23 : Admin Change Password

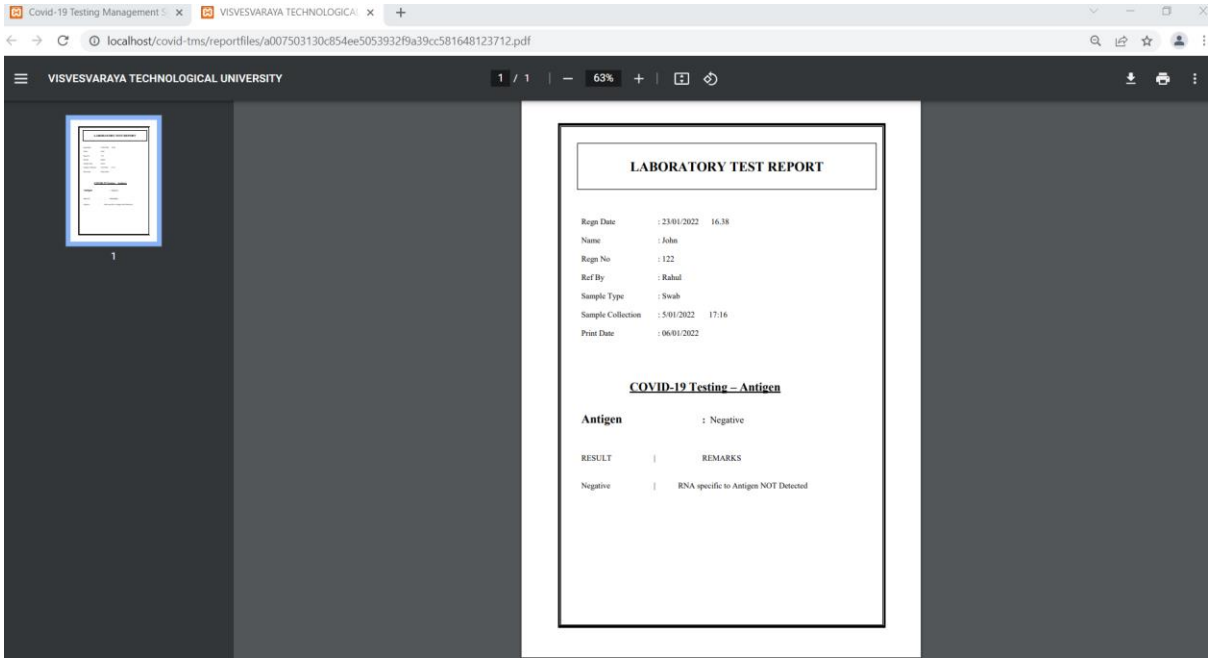
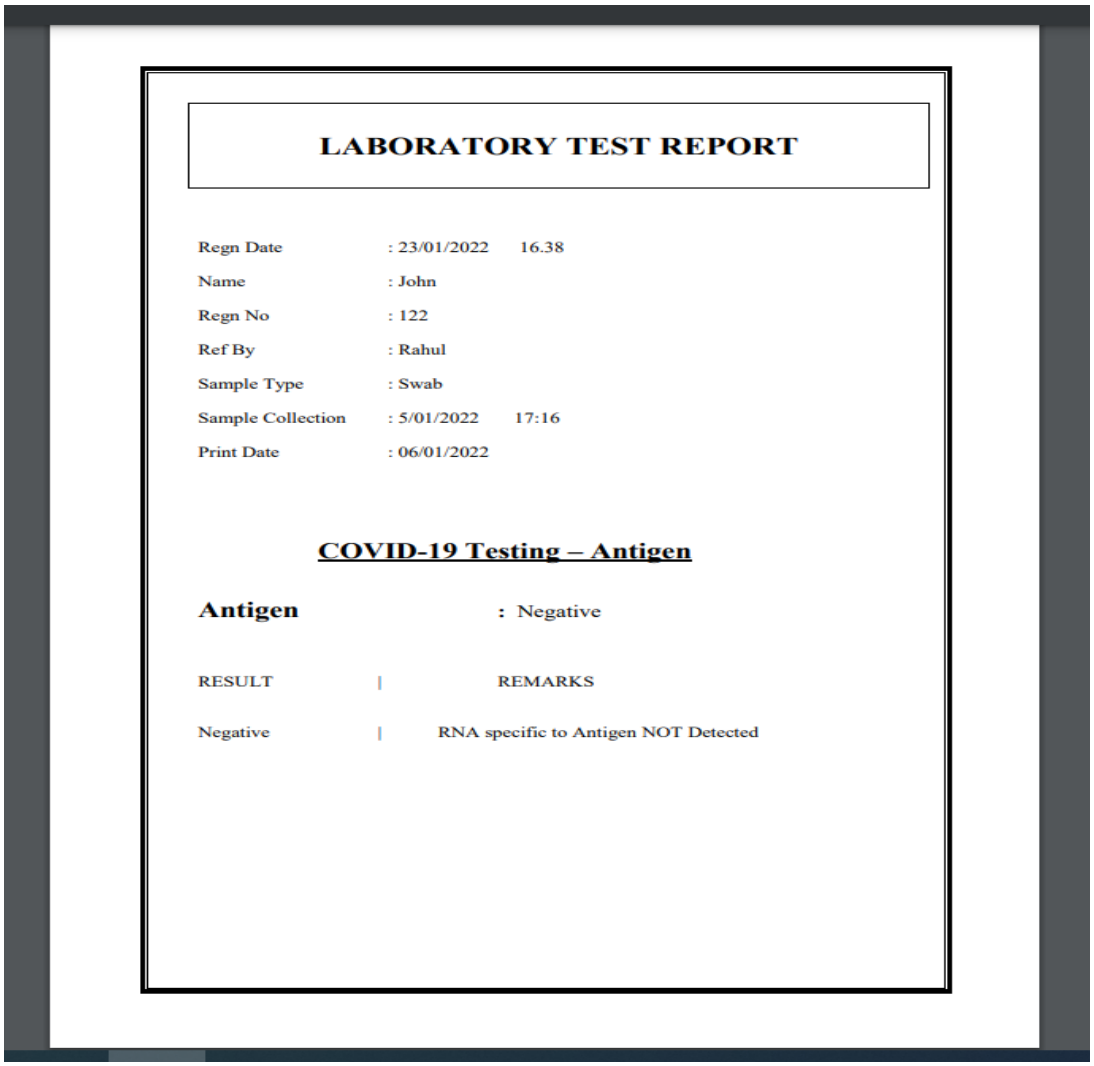


Fig 7.24 : COVID-19 Test Report



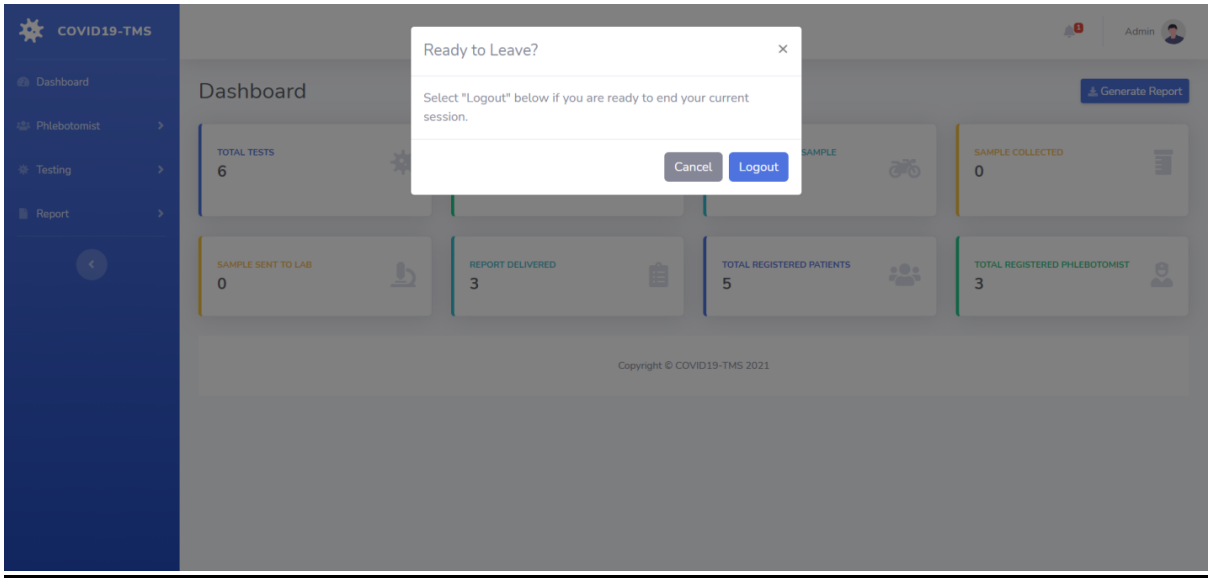


Fig 7.25 : Admin Logout

CONCLUSION

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

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Effectiveness of social distancing strategies for protecting a community from a pandemic with a datadriven contact network based on census and real-world mobility data. MIT Connection Science, 13.

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