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Safe shopping using Google Analytics to Fight the Battle against Coronavirus!

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ABSTRACT

Corona Virus began in 2019 in China and has now spread across the world. This virus destroyed many economies and lives along with it. People fought against this virus and developed its vaccine. Now, the same corona virus has modified itself and is spreading across nations. India is also getting affected by it. As this virus became even more deadly than before. And don't have an effective countermeasure against it. This paper is made to make people understand about the spread of corona and how to stay away from it even in public places where we need to go just to meet our life requirements. Like in nearby shops where people stand close to one another and unknowingly get affected by coronavirus. This paper describes a system through which anyone inside India belonging from any place can stay away from markets and crowded places. This paper describes a "We Care System" using it we can change the speed of corona affecting Indian society. As we know more than 55% of people getting affected from corona are getting affected during general interactions in public places like shopping malls, shops, etc. This paper will help people to stay away from public places as much as possible. It will help them interact with shops and establish a proper communication between the customer and shopkeeper. So, one can order all the things he needed for his household using this system. At most he just needs to go and collect those items from a trusted shop and come home. This will reduce time spent during shopping to 5-6 minutes. So now no waiting in queues for hours and getting what you want along with staying away from corona. This entire system will not only help you but will also help Indian economy. As all the money will be spent in nearby shops this won't let Indian economy fall apart and even help India people to rise and think about their own good for a greater cause.

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1. INTRODUCTION

Coronavirus which was earlier seen as a disease in animals has now created a major threat to the lives of human beings. Earlier society witnessed diseases like SARS in 2002 and MERS in 2011 which were also from China and were also very harmful diseases for human beings. This disease has caused a worldwide pandemic situation and it has become a national duty for every citizen of their country to join their hands and fight against this corona to live life freely again. [3]

It has been proved in many researches that the spread if this disease is airborne and a person can also catch it if he or she touches the infected place. Also it has been noted that the disease is not getting spread via blood and blood products, or by mosquitoes. It has also been witnessed that the spread of coronavirus is reduced by increased temperatures. The speed of propagation of coronavirus is reduced in increased temperatures and humidity. [4]

It has been reported that 42% of coronavirus cases are been seen in the age group of 18 to 40 and on taking a closer look at the situation, it has been seen that the coronavirus is a major threat to people who are older and among those who are already suffering from some disease other than corona already. If a person is already suffering from a disease other than corona and if he or she catches corona then it becomes easier for the corona disease to aggravate the situation and make it even worse for the patient. So it is highly recommended that people already suffering from a disease stay at home and stay as much safe as they can otherwise it could even be a threat to their lives too.[3]

In India the first case of corona was witnessed on 30th January and the patient travelled from wuhan to kerala which caused the complete india to start the problem. As all know India is not a big country in terms of area with respect to population and the indian population has crossed 130+crores which is the second largest population. So in a country like India, it is already an issue to maintain social distancing among people and with this large population it becomes very easy for the virus like corona to spread fast. Although in the early stage of corona itself the government took strict actions to control the widespread but creating lockdown conditions caused the government to lower the economy and the poor people also suffered a lot. Since it has been seen that in India there are many people who work on a daily wage basis and they have very little savings too, hence coronavirus caused many of them to travel back to their hometowns on foot and many people had to sell off their household items to run their houses.

Coronavirus is that curse which is not ready to stop and is increasing day by day without any

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stoppage. Whenever society thinks that now it's time for it to stop then it encounters that the cases have increased again. Coronavirus has changed the people's lifestyle. Now people cannot go anywhere without wearing masks, even if they go they always have to keep in mind that they don't have to touch anything and maintain social distancing at all times. The process not only stops here, after returning from outside all the items need to be sanitized and it is preferred that the person also take a bath after returning home as it reduces the threat. Corona has made people of every country live a threatful life. Due to this threat only it has been recorded that many people have undergone depression like situations and many mental problems.

This pandemic has caused a lot to mankind. The livelihood of people have been destroyed. Hereby are some of the enlisted points which covers the harsh effects of corona on the common people:

- Unemployment - Due to corona, business of many people have undergone huge loss which led to the stage of unemployment. The newly graduated people are facing issues while getting a job since the required people for a company are very less. In India where the employment rate was recorded as 39.4% in 2019 has now dropped to 27.2% in 2020.
- Food shortage - Since this pandemic time, people are not getting paid much and hence the quality and quantity of the food supply chain also got reduced. The poor people were finding it very difficult for them to survive in such a situation. The Food shortage became a cherry on top for those who couldn't afford it.
- Curfew like situation - Since the start of the pandemic people have seen the news for curfew and lockdown all over the world. Such a situation not only causes physical illness but also mental illness too. Curfew and lockdown created situations like food shortage and it majorly affected the people who made their earnings on a daily wage basis.
- More sanitisation - It has been identified by many that if anyone wants to protect themselves from corona the only thing they need is sanitisation. Sanitisation has become a key factor for prevention from corona. It has added an additional expenditure for the poor and they need to crave and work more hard to get those extra pennies.
- Limited resources - Since this pandemic has started, the import and export of various items have been reduced which further has led to shortage of resources in the market. The quality and quantity of products have declined and consumers are left with minimal choices.
- Increased leisure time - Since the start of Corona people have faced many lockdown situations in which they are not allowed to go out and work from home was encouraged. This has led to a late back attitude among many people. The productivity level of people

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has significantly affected.

- Reduce pollution level - With closure of construction activities and no vehicular traffic on roads, the level of pollution has significantly reduced all over the world. In a recent survey Delhi has made place in one of the clean cities in terms of pollution.
- Reduced economy - With disruption in demand and supply in the market the growth of the country has been severely affected. India has witnessed one of the greatest fall in the growth rate thereby causing a great impact on the economy.
- Very large fall in transport via air, road and railway - With lockdown situations throughout the world, transport facilities were shut down and it impacted various people who were stuck in various parts of the countries and found it very challenging to come back to their hometown.
- Festivals disrupted - India is a country of festivals. So in places like India festivals play a major role in disrupting social distancing and hence it forces the government to make the people perform their festivals without social gathering and in a quiet and pleasant manner.
- No new movie release - Lockdown has impacted movie theatres and the industry. Many theatres were forced to shut down due to heavy losses. It has reduced the choices for people as no new movie released for hard core movie lovers. The money invested for creating a movie has gone in vein due to onspot cancellation of the bookings.
- Crime increased - Recent surveys have thrown light on the increased rate of crime in the country and world over. India alone has witnessed 50 percent increase in crime rate due to job losses and increased poverty. When poverty hits people often forgets their ethics and moral values which further lead to crime. Many cases are being reported in newspapers and media regarding the increased crime post lockdown.

2. METHODOLOGY

2.1 RELATED WORKS

Corona Virus or COVID-19 spread has caused mass destruction. This deadliest virus is transmitted by close contact so the situation urges the need for social distancing.[3] Analysis has been made to make people aware of the harmful effects of coronavirus. Many a times we have seen that people tend to shop from the places they trust the most.[2] There has been scenarios when people choose online mode of shopping over offline and in the current scenario it is best for people to shop online since it would encourage more social distancing.[1] Also the analysis have been made on the basis of customer's repurchase intention. The quality and service offered

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by the store whether online or offline servers a major role in governing which side customers would choose for shopping.

We have also seen in various approaches the way we can smartly track the everyday expense of a consumer. Such methods are better served in situations where there is risk of losing data and also in cases where people find it boring to calculate what they spent on was worthy or not. [9] We always want to buy things from a shop which is trusted and is recommended by most. So in several researches we have seen how location based notification allows users to get an enhanced experience on what they are buying.[7]

In several researches we saw how the process workflow is conducted and how the person remains in a queue based system until all its requirements are completed and all the process flow is terminated. [8] With fast pace in online shopping, the most important factor for consideration has been how to reduce the customers valuable time and give a precise search result. The use of auto tagging and geo tagging has been serving the same for many. [13] Google analytics have served with all its great strengths to the market. It has made the process of analysis and production of visualisation for the same to be an easy and efficient process.[15][12]

Real-time packet switching has always been a concern for various developers especially when the traffic to the site is under play. So the use of FCFS and EDF scheduling algorithms has reduced the load on site traffic and also provides better networking. [10][5]

As far as security is concerned in a website the least we can do is to add an otp based email verification system. The system would allow only verified customers to access the resources. Several researches have proved that otp based login is better than traditional password as it offers better reliability and also encourages an extra layer of security to a website.[11][14]

In India, the first lockdown was announced on 23rd March 2020 which allowed only the essential item shops to open with required social distancing and that too for limited hours. The limitation in time caused a panic situation among people regarding the goods being finished and the supply being stopped. So the panic like situation caused a great elevation in the corona figures. Corona has become a fear factor for many people in India. People want to buy goods from outside but there is always a fear inside them of getting caught with Corona. Lifestyle of people and their ways of seeing things have disrupted. India is a country where people have festivals every now and then, and people have to sacrifice their prestigious festivals due to this covid situation and preventing themselves and their loved ones from corona.

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In recent years, the number of people visiting supermarkets for purchasing commodities has increased. However the situation is not similar in the most part of the country where people are still dependent on kirana shops for purchasing the essential commodities. The lack of knowledge of operating the online grocery apps has led to a major crowding situation in the kirana stores due to lockdown thereby breaking the only solution to the further spread of covid i.e. social distancing. There were many steps taken by the kirana stores to prevent this covid situation but they failed when they saw a large gathering visiting their shops and breaking the basic norms of social distancing. The kirana stores not only faced trouble buying the commodities or goods from the custom but also they had troubles selling it back to the consumers. Although they worked really hard to maintain social distancing, they failed to deliver the most due to shortage of goods. Since they faced a lot of issues selling the goods, they had to reduce the labour cost which affected the families of the labour and intern they themselves had to work for longer hours than usual as they were the one responsible for bringing the goods for their community. The problem not only ended here. The one who had opened their shops were in trouble of how to manage but there were also many people who had to shut down their business and many had to incur many losses in their business due to lockdown.

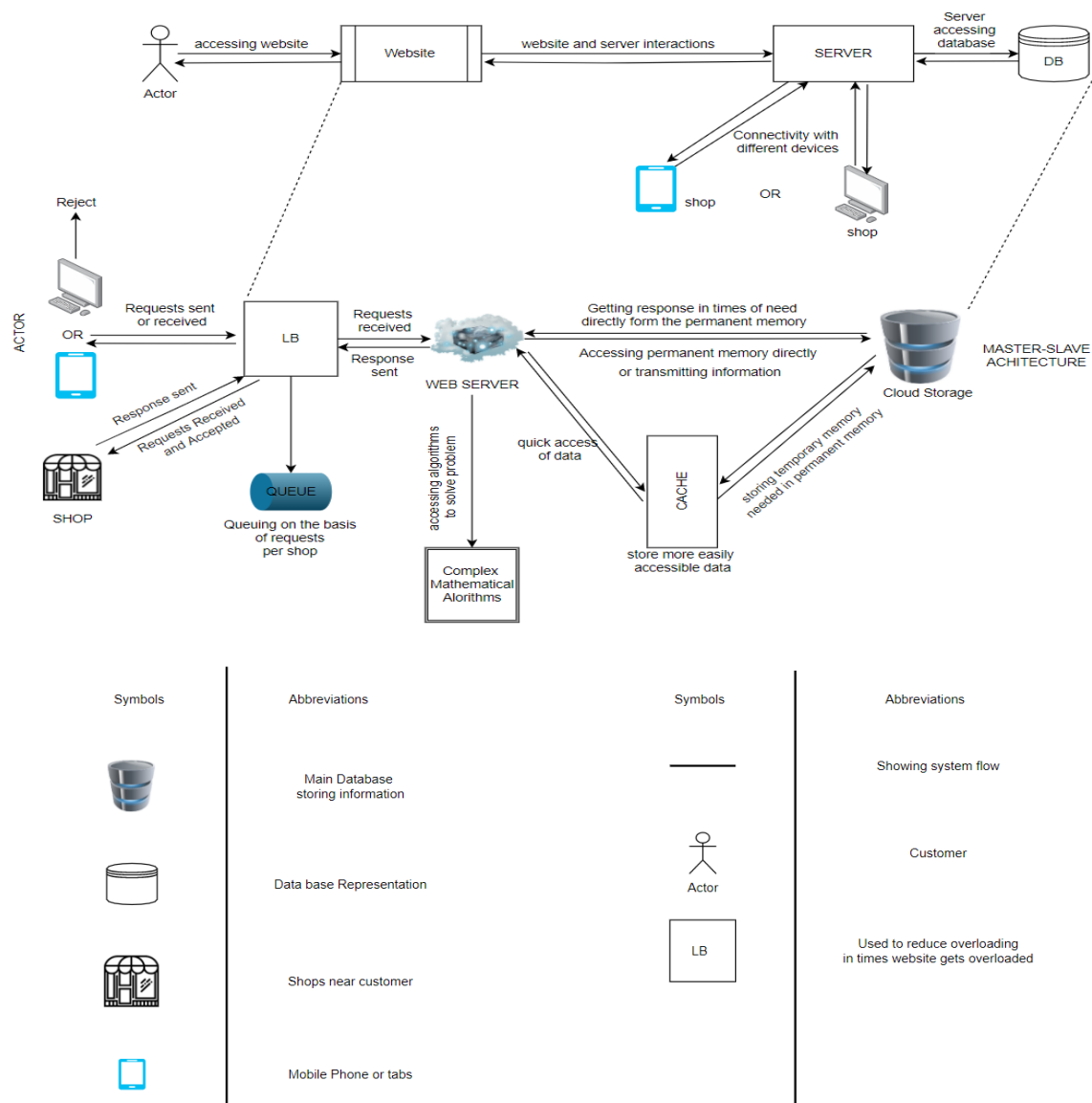
2.2 PROPOSED MODEL

People stay away from others and maintain social distance in most of the places but here even they are forced to come in contact and stand in queues. This is one of the reasons why India is producing almost 1 lakh victims every day. To stop this we have devised a user interactive modern UI based application totally made to reduce human interaction to its minimum level. This is made to help general people to stay away from crowded places where they are bound to go like shops, markets for their daily needs. This will help both the shopkeepers as there are too many people to handle at times and will also help common people as there time for shopping will be reduced to the minimum time possible.

People nowadays want to spend as less time as possible while shopping for basic needs and spend the most of their time earning enough money for their family. The system would enable them to keep the items in cart handy and would allow them to pick up the items in less time and would make their work and time management easy. They won't have to spend their valuable time in the shop and also they would be even preventing themselves from catching corona since

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prevention of corona demands maximum avoidance from the common public. In India there has been a substantial increase in the level of awareness among people since the corona times. People have become more careful and they try to avoid crowded places but this fails when it comes to basic needs. So through this application we would be able to deliver them their basic need items at their doorstep in no time and also with sanitisation and social distancing. They would be able to compare the price and products of various shops. This would enhance the shopkeepers income too and would allow him or her to know about what all items have been sold the most in their shop in a particular month. This would also alert the shopkeepers for the shortcomings of various goods in their shop.



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3. MODELLING AND ANALYSIS

3.1 INTERACTIVE CATEGORY BASED MODEL

Interactive User Interface basically means that the project which is made will be able to run and execute on any kind of browser which user finds suitable. The interface is going to be user friendly and can be easily understood by the common people. It would be easy for the common people to interact with such an interface and this would also create and spread awareness among people for being more digitized which is the next step for our new digital india. Such an interface helps to promote communication between shopkeepers and customers although not being physically present, hence promoting social distancing and contributing for the welfare of the country.

Interactive Category modal using different systems to identify different categories and supplying users with best types of product in that category. This modal can be used to improve existing systems and to enhance bandwidth of buying and selling to another level.

This modal is both user friendly and shopkeeper friendly. So, it will help the society to grow in a positive way. This is also made to stabilise Indian GDP.

This UI(User Interface) can run on smartphones as well so that people can communicate with shopkeepers for products they need as soon as possible. India is giving huge support to foreign companies and not giving importance to Indian Shopkeepers. So helps in their development as well.

This application works and follows along with any operating system and any device it is used upon. This helps people to have better communication with the people. People can use their email ids to access or to create an account in this application. This application follows all the modern methods used in present day applications and even provides data analysis which would benefit both customers and shopkeepers who are wishing to enrol inside this application.

Along with that this application is user friendly. So even a kid of small age can easily understand how this application works and can get anything he wishes for from any shop near him.

This application works from everywhere. It can accept any location inside India so this makes this application quite easy to use for anyone inside India.

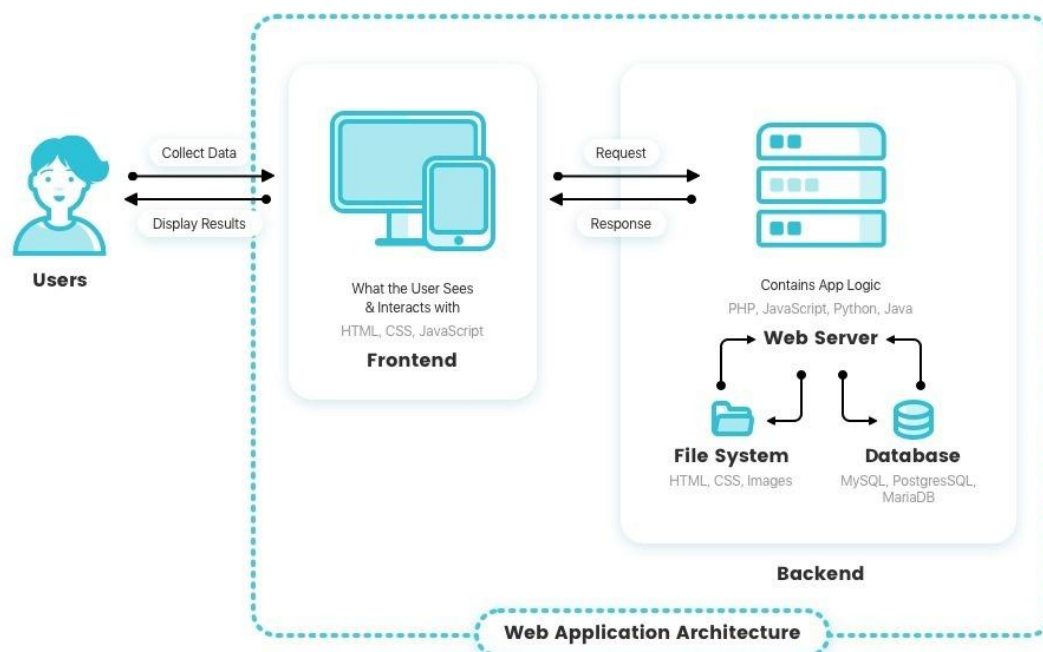
Basis requirements are very nominal in case of this application as it needs only phone or laptop, and network connectivity. So any layman can use it for their benefits as per their wish.

It provides notification features to get people updated about their orders. So all will be having a

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proper update of things they have ordered.

It asks for regular feedback from customers so that shops with better quality of products are highly rated and they can book products all they need though this application and need to just collect those items from shops so they don't have to wait in long lines in public places so hence this promotes social distancing as they get what they need and even communicate with least number of people possible. Hence we have tried to make it with maximum user interaction as possible so that its quality also increases as people start using it.



3.2 REVIEW PRODUCTS

This is a feature we thought is a very important feature needed between people and shopkeepers. It helps in benefiting both sides of the communication as it removes the only hurdle people face that is communication. We have tried to remove this hurdle by including this feature in this application. Here we are providing a chat feature between the shopkeeper and user.

This is put to simplify the needs of the customer and supply given by the shopkeeper. This can be used in many ways so that it can bring transparency in shop and customers deals. Using this a customer can send to shop what products he needs and accordingly shop can send the bill of the products customers need. If all the products are available then customers can say yes then products will be made ready for customers.

This will even customers further as they don't have to run around and find the products they need. If they ask any shop for a set of products they need. If the shops say they don't have it. So,

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this also saves time and fuel along with that and is also getting all what they want just on the press of a few clicks.

This will help to develop a proper two-way communication between shopkeeper and customer. Finally, both will be happy as their requirement will be fulfilled within a small slot of time. This will be quite beneficial for people in jobs or those who have less time spare and will help in maintaining social distancing on a large scale.

This inbuilt feature thus helps in revolutionizing the communication between people and customers. Here we are providing unique features to enhance communication. So you and the shopkeeper will only be able to access it, no one else will be able to access it. This will boost communication and remove boundaries between shopkeeper and Customer. So this chat app present in the review session will add great benefit for both Shopkeepers and for Customers as well. This will even be faster than all other online resources that people use to get what they need.

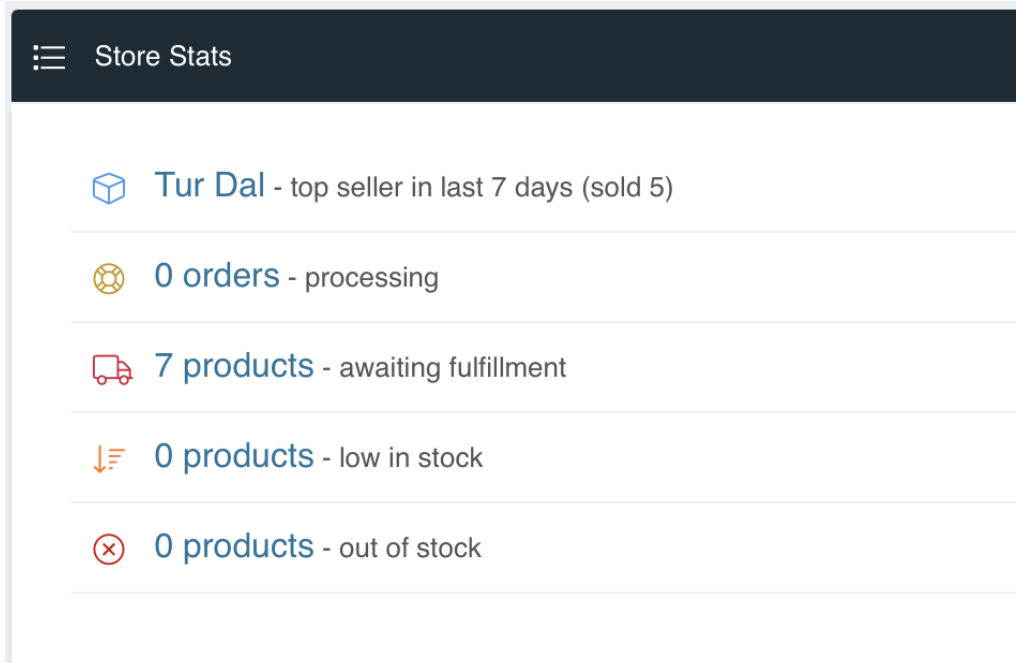
4. RESULTS AND DISCUSSION

As we have seen in various previously read papers, there was use of various techniques used for analysis and for convincing people for the importance of online shopping but the only thing which we felt was missing was the importance of the trust factor and the habitualness of one to buy items from nearby shops. So we devised a solution which would encourage not only online shopping but also a system which incorporates the nearby vendors to go online and advertise the products and services offered by them to all. The main goal of this system is to use data present within it to benefit both shopkeepers and customers who are going to use this application in the coming future. We have devised to use this method to improve the usage of this application form in future. Here we have tried implementing various analysis strategies that will help their particular application to grow.

These analysis skills will be used for the general benefit. Ways people will get benefited using this application are: -

- Shopping trends - This is basically dependent upon what people mostly need in an area. Suppose Ram likes chocolates children living near him also love chocolates. They all use this application for their requests from different shops. Then this will be shop on top of the priority. And people don't have to type the entire thing just need to click on it then select a shop they want it from. If the shopkeeper replies yes they have it then go and collect it from that particular shop. This even helps children as well as they now know which shop has the products they need.

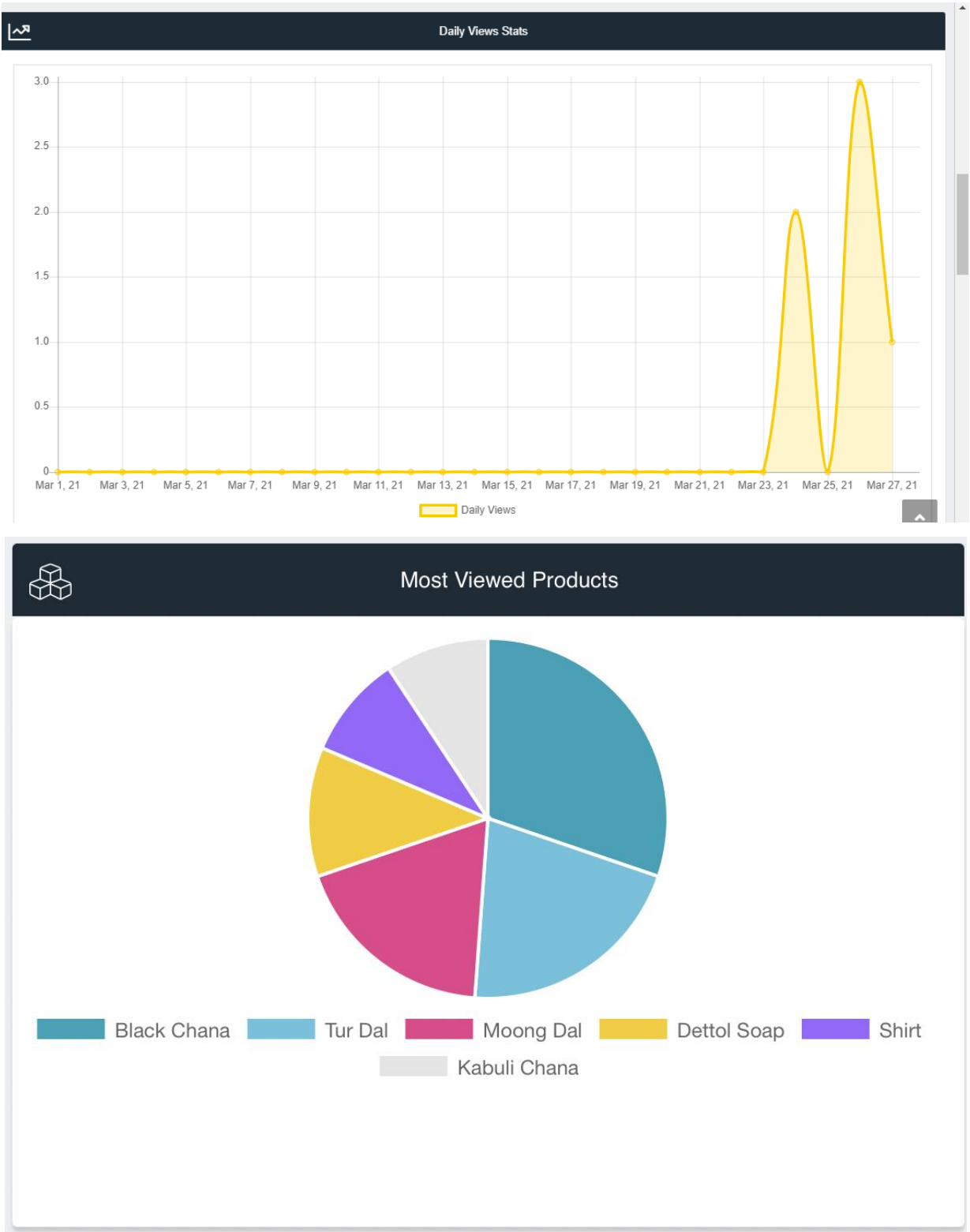
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- Rating and review writing - this is a feature that can be taken advantage of by Customers. By this feature people will be able to understand the quality of items present in that particular shop. So those shops with better quality products will be highly rated; this rating will be given to shops by customers after they buy a particular product from them. Review writing features will also be provided that will either increase or decrease the reputation of a particular shop. This review can be accessed by all so shopkeepers won't do things that they are not supposed to like selling expired or poor quality products to any customer. So all the customer rights will be followed and this will bring transparency in shopkeeper and Customer business.
- Changes due to rating - this will change the priority order if a shop is poorly rated it will be placed below at the time when you are selecting any shops from nearby. If it is highly rated then it will of course be placed on the top depending on the products and services they have provided.
- Total Grocery Cost(Smart Buy) - this will show you the total amount you have spent in the past 1 month in grocery and products that you needed. This will even help you to give a rough estimate of things that you basically need for a rough estimate of 1 week. This will help you to buy things that are needed for a household for their basic needs. Select them if you need them.

This helps us to enhance communication behaviour from Customers and from the Shopkeepers side. This helps our application to be as useful as other modern applications used by people on the present day.

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5. CONCLUSION AND FUTURE WORK

This system is made to help people and society to move forward in a positive direction. Considering all possible accounts we have developed this paper to improve the relationship between shopkeeper and customer. Through this paper will make the lives of people a lot easier than it already is. Corona has affected the lives of people in a negative sense. This system is made in such a way that it will decrease the effect of corona on the lives of general people. Using this system users can identify which shop to choose near him to get the best quality products on the basis of product rating and other things we have included inside it. Here we have used Google Analytics to enhance Analysis to the next level and provide proper messages to customers and shopkeepers. This system will help to reduce crowded places to a minimum number.

This project can be further improved upon by testing and implementing newer and better algorithms. Now this paper lacks data storage functionality in our system but if this idea moves in forward direction we can add an AWS console for Cloud Storage. This project can be further improved by using Cloudwatch for monitoring the entire system. If our website moves in a positive direction we will like to use more data visualization tools to get a better idea of functionality of the entire system.

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