

# Digitizing Urban Neighborhoods In Delhi

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**BTP Track:** Research

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## Student's Declaration

We hereby declare that the work presented in the report entitled "**Digitizing Urban Neighbourhoods In Delhi**" submitted by us for the partial fulfillment of the requirements for the degree of *Bachelor of Technology in Computer Science & Social Science* at Indraprastha Institute of Information Technology, Delhi, is an authentic record of our work carried out under guidance of **Dr. Praveen Priyadarshi**. Due acknowledgements have been given in the report to all material used. This work has not been submitted anywhere else for the reward of any other degree.

.....  
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**Place & Date: IIIT-D, 26 July 2022**

.....  
**Vikrant**

## Certificate

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

.....  
**Dr. Praveen Priyadarshi**

**Place & Date: IIIT-D, 26 July 2022**

## **Abstract**

Delhi is divided into eleven districts which have a total of thirty-three sub-districts. The website has a map starting from the district level and later going to the sub-district level as performed by the user. Digitizing neighborhoods of Delhi, a destination, a “Website” for every citizen, student, parent, historian, faculty, and more, where they can be provided all the information about a neighbor (place) in Delhi. Since this city promises a better life by providing many opportunities for a better life, the population has increased, and it also has multiple tourist attraction spots. To cope with the vast population, the government is trying to digitize any possible service so no person can be held behind due to labor limitations. This destination consists of History, Geography, Demography, Social/Culture Type, Economy, Landmarks, Schools/Universities, Parks, Rental Market, Property Prices, and many more. The information about all the parameters is collected manually via research and surveys done by students involved in the project.

**Keywords:** Delhi, Digitizing, neighborhood, website, research.

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## Work Distribution

This project mainly required two types of work initially: data collection and coding. And both kind of work is done by both of us equally.

### **Saurav Ranjan:**

Data Collection, Data Entry, Study, Survey

Structure, Design → District, Locality, UserInterface, Animation, Video, MapCreation

### **Vikrant:**

Data Tuning, Research, Study

Design → Homepage, Sub – district, Locality, Hyperlinking, GalleryFormation, NavigationBar

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# Chapter 1

## Introduction

### 1.1 What is Digitizing Neighborhood?

The era has come where everything is available to you at your fingertips. The city itself has become a software-based simulation; personal information is provided to service companies and apps so that a person can function efficiently in a city by getting most of from the same. People wanted to be self-dependent because the harsh truth is that rarely anyone is available to help out anybody selflessly. For this purpose, many techs giant companies provide helpful services to the people through their technology; the simplest example is a “Smartphone,” but the notable thing is that it is not only the smartphone that makes it Smart; instead, apps and functions are the essential factors. Some apps or websites provide the platform to buy or sell anything, find any place or building, and see the route to a site. In the given example, we can understand there would be a need for a map that will show the roads and everything present physically on the ground like buildings, streets, any landmark, river/drain, etc. The apps have digitized our area and made it easy for us to navigate. Similarly, what if we want to digitize a neighborhood? “A neighborhood is a geographically localized community within a larger city, town, suburb, or rural area. Neighborhoods are often social communities with considerable face-to-face interaction among members.” (Wikipedia) From the definition, it is clear that the neighborhood is not only geographical but also includes people, communities, or social lives. Digitizing a neighborhood means putting a natural area into a virtual world. All the information related to a neighbor, like History, Geography, Demography, Social/Culture Type, maps, locations, and housing info, would be there so that a person can imagine that locality and pull out any necessary detail. The social community detail should also be there in the system to go all virtual. Hence, putting these details on a system would be digitizing a neighborhood—a neighbor/locality which can be accessed online.

\*\*Note: Digitizing doesn't mean a computer-simulated environment here.

## 1.2 Motivation

This website's idea came after exploring Delhi while doing a project. Given Delhi is an urban space where we have many heritage sites and political institutes. As team members of the project, we faced challenges in exploring our areas in Delhi. Due to partial lockdown and the non-availability of information about a locality. Later our respective faculty suggested designing a website that can get you insights into Delhi so that everyone can access the information on possibly anything related to a locality in Delhi. Our vision is to make this website accessible and valuable to anyone, either a student, teacher, immigrant, or other.

## 1.3 Objective

### **“One destination to Delhi”**

- Access to details of stores, buildings, parks, hospitals, etc.
- Provide information about social life there.
- Should be helpful for research purposes
- Should be available for exploration

## Chapter 2

# Method and Challenges

### 2.1 Method

We started by analyzing the data we had to collect for the project's first phase. This also includes research on users, how they would like to use such a website, and the necessary functionalities they need to make them use the website. We asked our friends to get students' perspectives, our parents to get citizens' perspectives, a Delhi outsider friend, and a few others, including our advisor and URL members. We started gathering information on Delhi and studying it, like how the area is divided, how the government works, and the current facilities in Delhi. These were all essential parts of the website since all that information and data would be optimized for the site. We also had to check if any existing websites were made for the same purpose, but thankfully we didn't find any. After study and data collection, it was time to design and build the website.

We decided to build this website using HTML, CSS, and Javascript. These languages are necessary for a basic structure and design of a website.

- Structure
  - The website structure is decided to be kept simple at first. It includes a  
Homepage → District → Sub-district → Locality phases of navigation.



- Design

- Homepage:

- \* Consists navigation tab
    - \* Website's views and ratings
    - \* Map of Delhi- divided into districts
    - \* Introductory Video to website
    - \* News (Delhi)
    - \* Trending (Delhi)
    - \* Team Introduction

- District:

- \* Navigation tab
    - \* District's introduction
    - \* Sub-district's map
    - \* Gallery

- Sub-district::

- \* About sub-district
    - \* Feature Section
    - \* All localities in this sub-district

- Locality:

- \* Navigation tab
    - \* About locality
    - \* All nearby information with a map

- User Interface

- It is kept simple and easy
  - It includes scrolling, clicking, and hovering at various places
  - “Jump to up” button is also included
  - Click Logo - To jump to the homepage

## 2.2 Challenges

There have been some challenging features that we could not overcome yet. The Homepage has a map of Delhi divided into districts. Hence, we must set the clicking coordinates accurately so that the user don't direct to another district if clicked near borders. The phase-to-phase transition might get time-consuming for users to reach a particular locality. Still, if we are to avoid this, then users won't get the other details like the story of that area, where the site actually resides in Delhi, and many more.

Another challenge was to make data available offline. To implement this we needed to connect the website to database using PHP. But server was not able connect properly. After many attempts of debugging we still hasn't able to implement this.

In our previous BTP Presentation we were advised to include a 'Crime Index' of a area on the website. We did look it up on the browser but unfortunately there is no such API or data available/exist on the internet. So, we couldn't pull any data regarding this.

The publishing of the website is not decided yet due to various reasons. To begin with, there are areas in website that we need improve because some features need high level skills. Publishing on GitHub can be a temporary solution but it won't make any difference. Another thing is, GitHub is flushing some files which are important for the Website to run. The reason is still not known yet.

## Chapter 3

### Result

We have accomplished our goal for the South-West District. The website is functional for the South-West district. It is named “DizDel,” which means Digitizing Delhi. Users can read and know stories, information, images, maps, and other details about this district.

## Chapter 4

# Limitations and Future work

### 4.1 Limitations

#### 4.1.1 Real-Time Information

One of the main objectives of this website is to be providing real-time information, which means all the data and information available on the website should be up-to-date. However, this kind of feature needs constant maintenance. Either it can be done manually or by an automatic updater. Since such a large area, updating manually would be tedious and weary. An automatic update would also require sharp skills and programming.

#### 4.1.2 Bulk data

We wanted to go to the atomic level of a locality and provide its information. But the problem with this is that we have limited localities with all information. Therefore, we were bounded to do only one district. The challenge is to collect the details about other areas. And it would be huge data collection. It is known that books and other websites can provide us with data, but it would likely be only the locality's crux and limited. There are few suggestions for this problem, but they are currently not feasible. The first is to make a team of researchers to visit and report; the other is crowd-sourcing.

### **4.1.3 Data Verification**

Crowd-sourcing is one of the feasible options for the future. However, it is also not reliable. Since anyone can send/provide information, it would be challenging to verify it. The data are in bulk, and it may also be possible that there would be multiple different data for the same locality. People can also fake the information. Therefore, verifying the data would also be a hurdle even after surpassing all other challenges.

## **4.2 Future Work**

To reach a particular locality, a user must move phase-to-phase on the website, which would be time-consuming. We tried to optimize it as much as we could, and designed a better structure so that the user won't miss out on any detail and, at the same time, would be directed to that locality. The backend work is done in the form of data collection via a form on the website. The data manipulation is something which can be done in the future.

We have to research and collect information on other districts by ourselves to provide some facts about Delhi that people never heard of. Therefore, in conclusion, we need to work on the Tech and the Non-tech area. Some improvement has to be made, and more researches are to be done to make this website more functional, user-friendly, and useful, which is our main motive.

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