



# Tracing The Growth Of The Global Community - A Population Forecasting Analysis



**TEAM HEAD : M. Vijayalakshmi**

**TEAM MEMBERS :**

1. S. S. Rubini
2. S. Viveka
3. R. Yuvarani

**CLASS: III B.SC. Mathematics.**

## **1. INTRODUCTION:**

### **1.1 Overview**

The world's population is more than three times larger than it was in the mid-twentieth century. The global human population reached 8.0 billion in mid-November 2022 from an estimated 2.5 billion people in 1950, adding 1 billion people since 2010 and 2 billion since 1998. The world's population is expected to increase by nearly 2 billion persons in the next 30 years, from the current 8 billion to 9.7 billion in 2050 and could peak at nearly 10.4 billion in the mid-2080s.

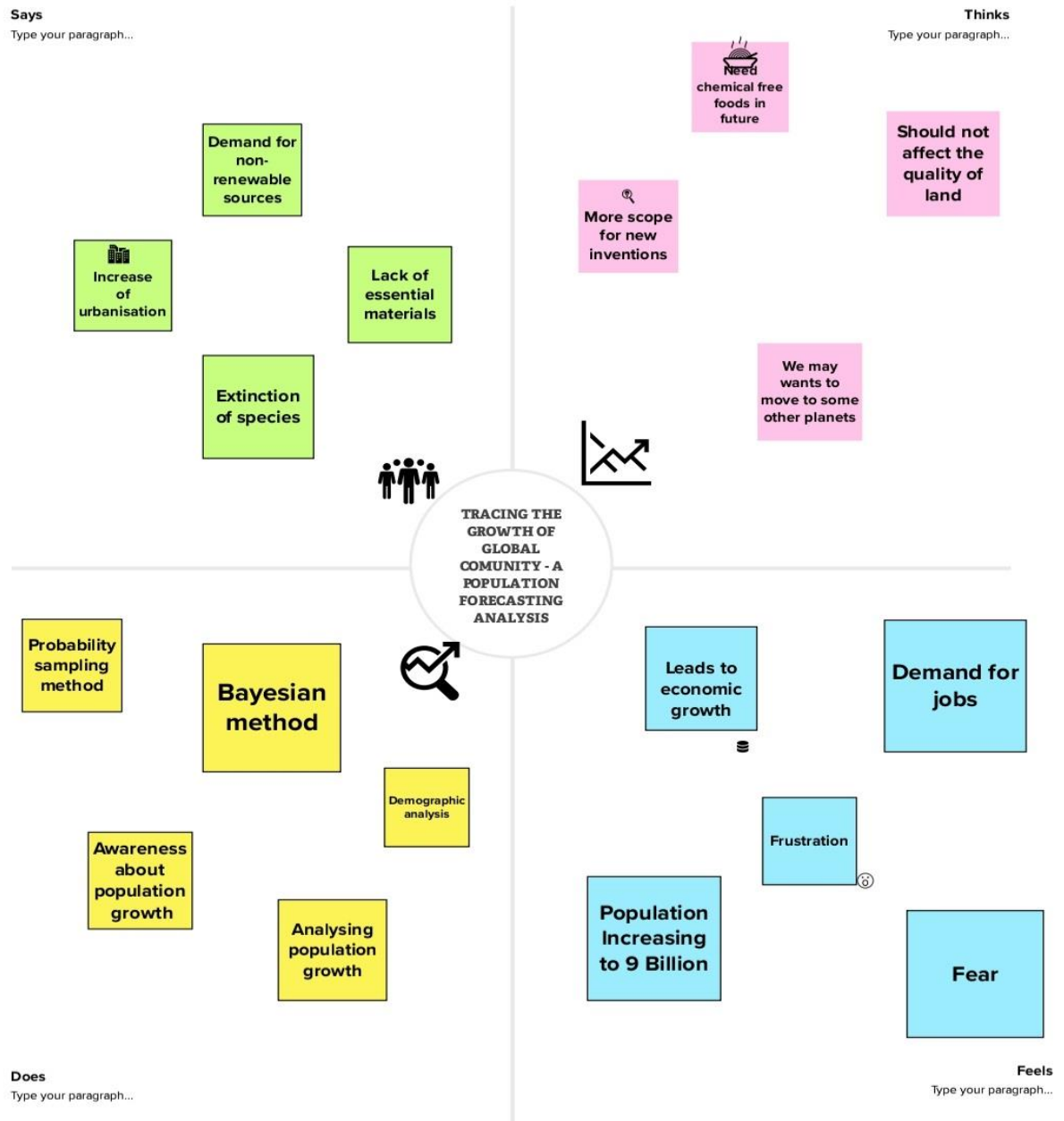
This dramatic growth has been driven largely by increasing numbers of people surviving to reproductive age, the gradual increase in human lifespan, increasing urbanization, and accelerating migration. Major changes in fertility rate have accompanied this growth. These trends will have far-reaching implications for generations to come.

### **1.2 Purpose:**

Forecasting population helps to pre-plan the needs of people. Accordingly we can construct buildings, transportations etc. So forecasting population helps to build a strong & developed community.

## 2. PROBLEM DEFINITION & DESIGN THINKING:

### 2.1 Empathy map



## 2.2. Ideation & Brainstorming Map

1

### Define your problem statement

What problem are you trying to solve? Frame your problem as a -How Might We statement. This will be the focus of your brainstorm.

⌚ 5 minutes

**PROBLEM**  
Tracing the growth the of global community: A population forecasting Analysis



### Key rules of brainstorming

To run a smooth and productive session

- Stay on topic
- Encourage wild ideas
- Defer judgment
- Listen to others
- Go for volume
- If possible, be visual

2

### Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TP

You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

Vijayalakshmi M



Rubini S



Viveka S



Yuvani R

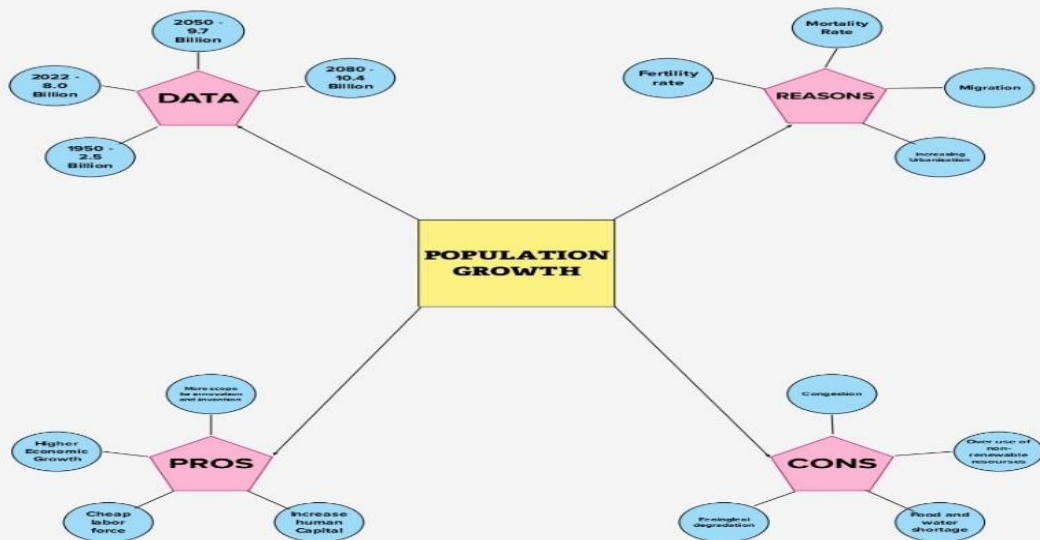


3

### Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes



4

## Prioritize

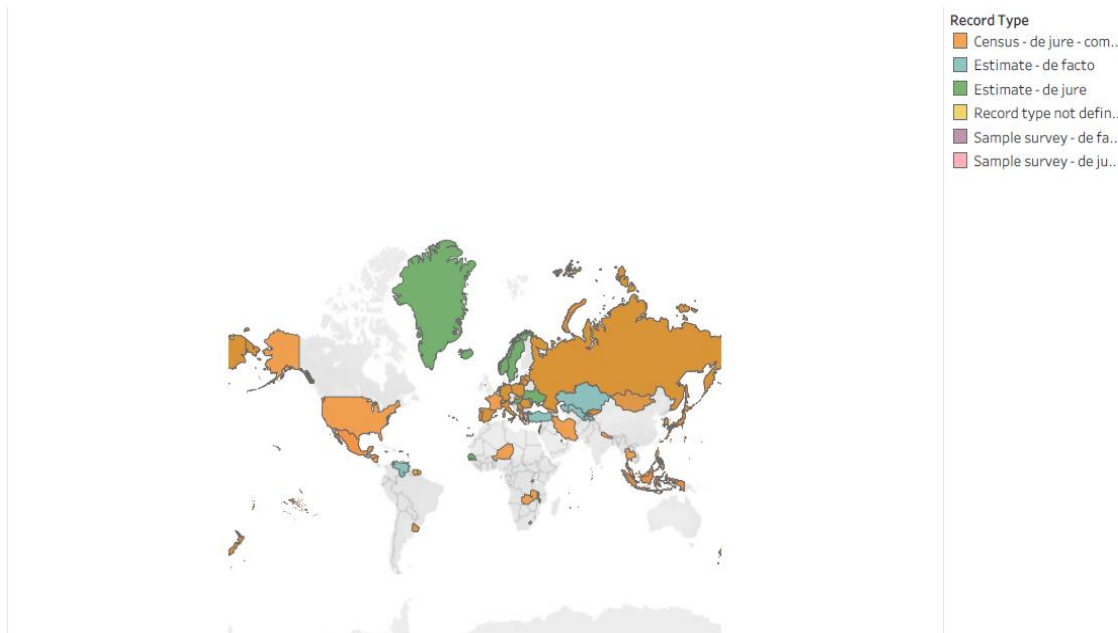
Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

🕒 20 minutes

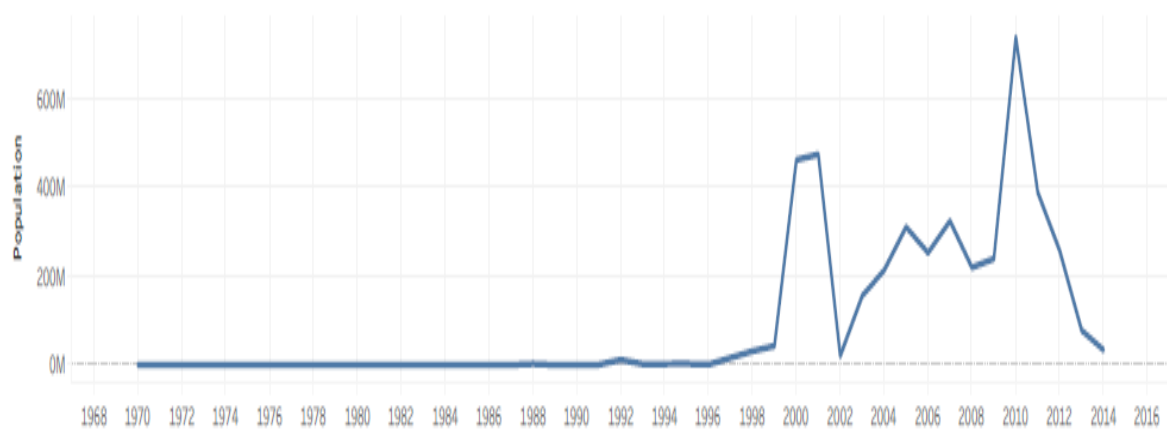


### 3.RESULT:

#### Sheet 1:



#### Sheet 2



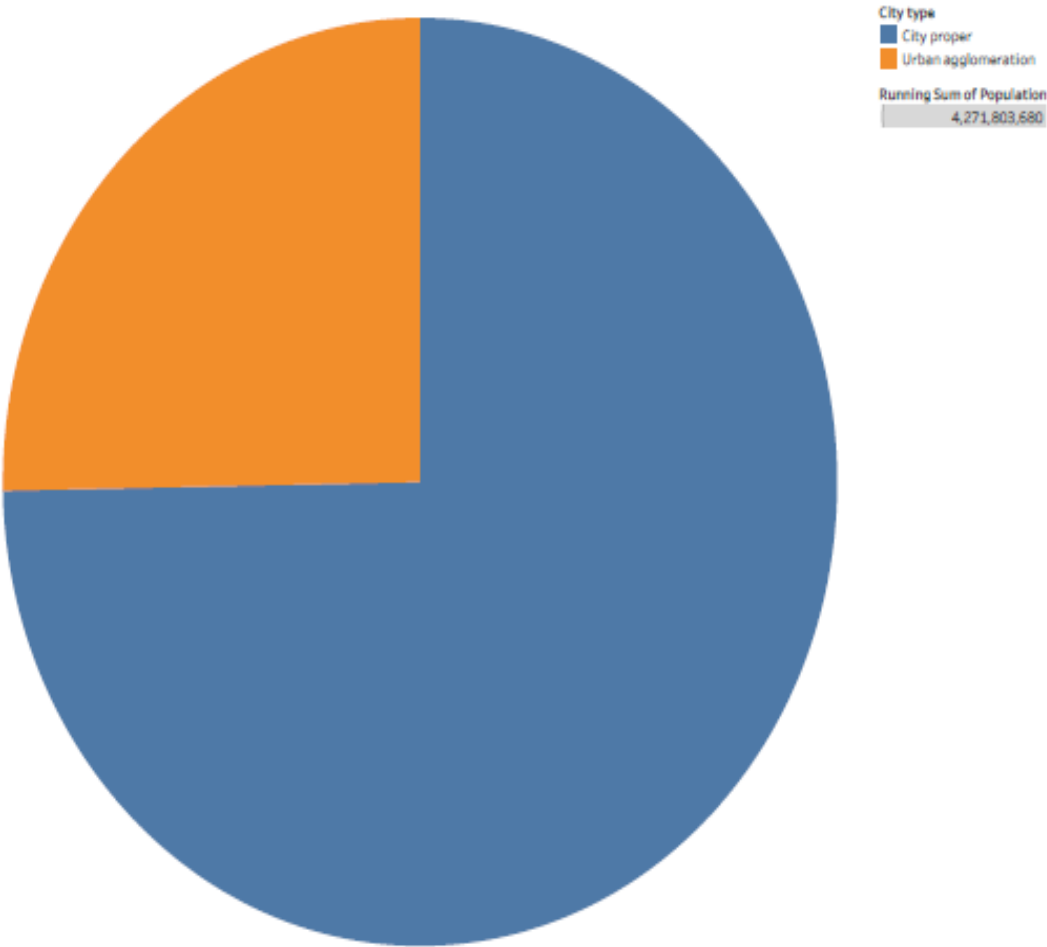
The chart displays the population of the United States from 1968 to 2016, categorized by sex. The Y-axis represents the population in millions, ranging from 0M to 400M. The X-axis represents the year, from 1968 to 2016. The Female population (blue line) is consistently higher than the Male population (orange line). Both populations show a significant increase starting around 1998, peaking around 2010, and then declining.

Year	Female (Population in Millions)	Male (Population in Millions)
1970	100	100
1972	100	100
1974	100	100
1976	100	100
1978	100	100
1980	100	100
1982	100	100
1984	100	100
1986	100	100
1988	100	100
1990	100	100
1992	100	100
1994	100	100
1996	100	100
1998	100	100
2000	240	230
2002	100	100
2004	150	140
2006	170	160
2008	140	130
2010	390	370
2012	180	170
2014	100	90
2016	100	100

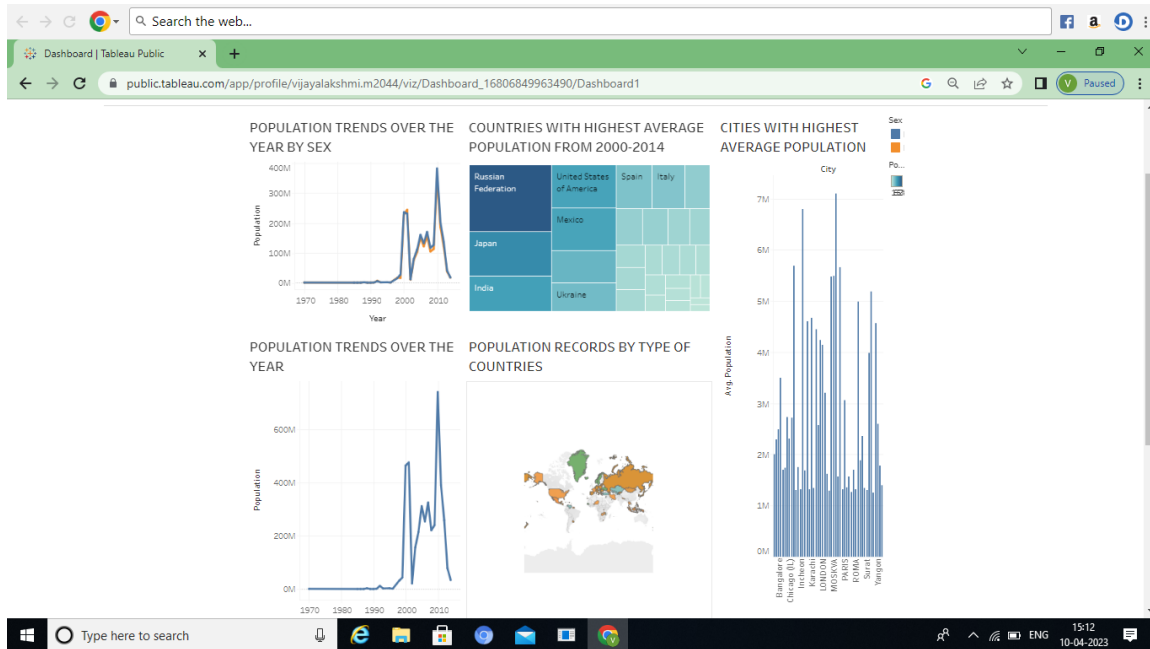
Country	Population
Russian Federation	15,216,550
United States of	627,655,861
Japan	
India	
Mexico	
Spain	
Italy	
Ukraine	

City	Avg. Population (M)
Ahmedabad	2.2
ANKARA	2.5
Bangalore	2.6
BANGKOK	3.6
BERLIN	1.8
Busan (P.)	1.8
Chennai	2.8
Chicago	2.4
Ciudad de Mexico	2.8
Delhi	5.8
Houston	1.4
Hyderabad	1.8
Incheon	1.4
Istanbul	6.8
Izmir	1.8
JAKARTA	4.7
Kanpur	1.4
Karachi	4.8
KIEV	1.4
Kolkata	4.6
Lahore	2.6
LIMA	4.3
LONDON	4.2
Los Angeles	3.3
MADRID	1.6
Mashhad	1.3
MEXICO CITY	5.6
MOSKVA	5.7
Mumbai	7.2
NAIROBI	1.6
New York	5.8
Osaka	1.4
PARIS	3.1
Philadelph.	1.4
Pune	1.6
Quezon City	1.3
RIYADH	1.8
ROMA	1.4
SEOUL	5.1
SINGAPORE	2.0
St. Petersburg	2.4
Surabaya	1.4
Surat	1.4
TEHRAN	4.0
Tihran	5.3
Tlaquepaque	1.2
TOKYO	4.7
Yangon	2.7
Yokohama	1.8
Zapopan	1.4

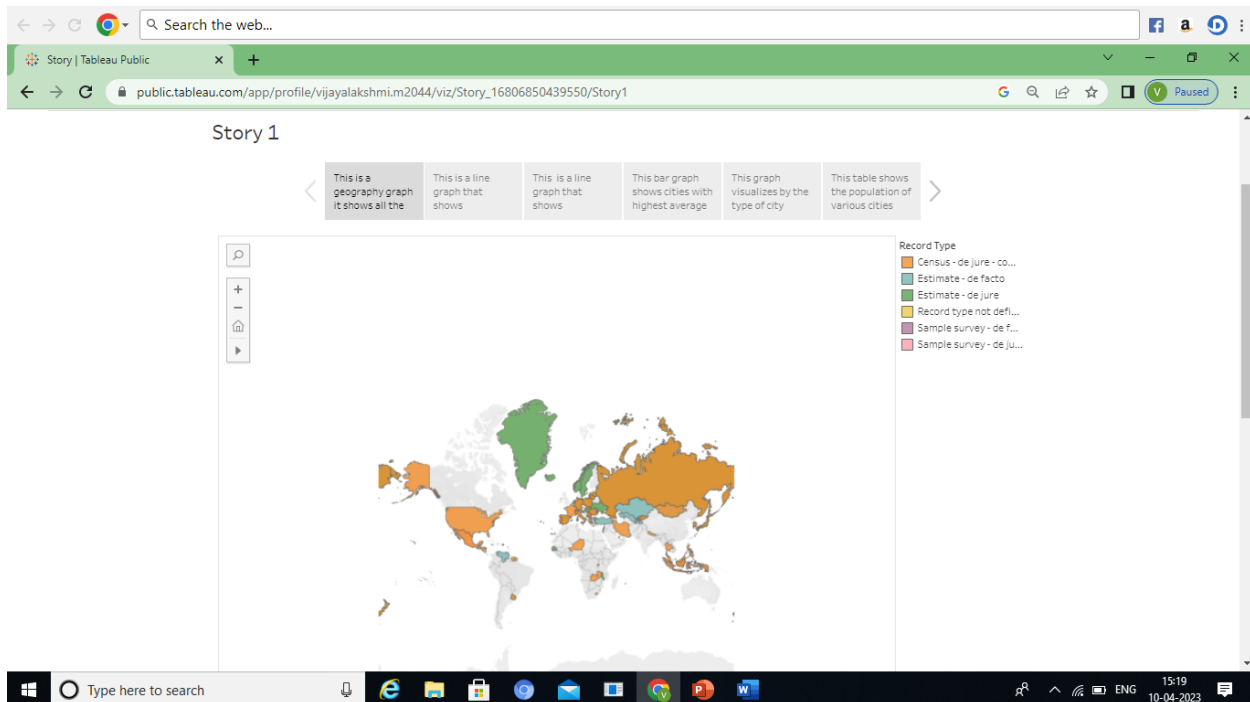
Sheet 6:



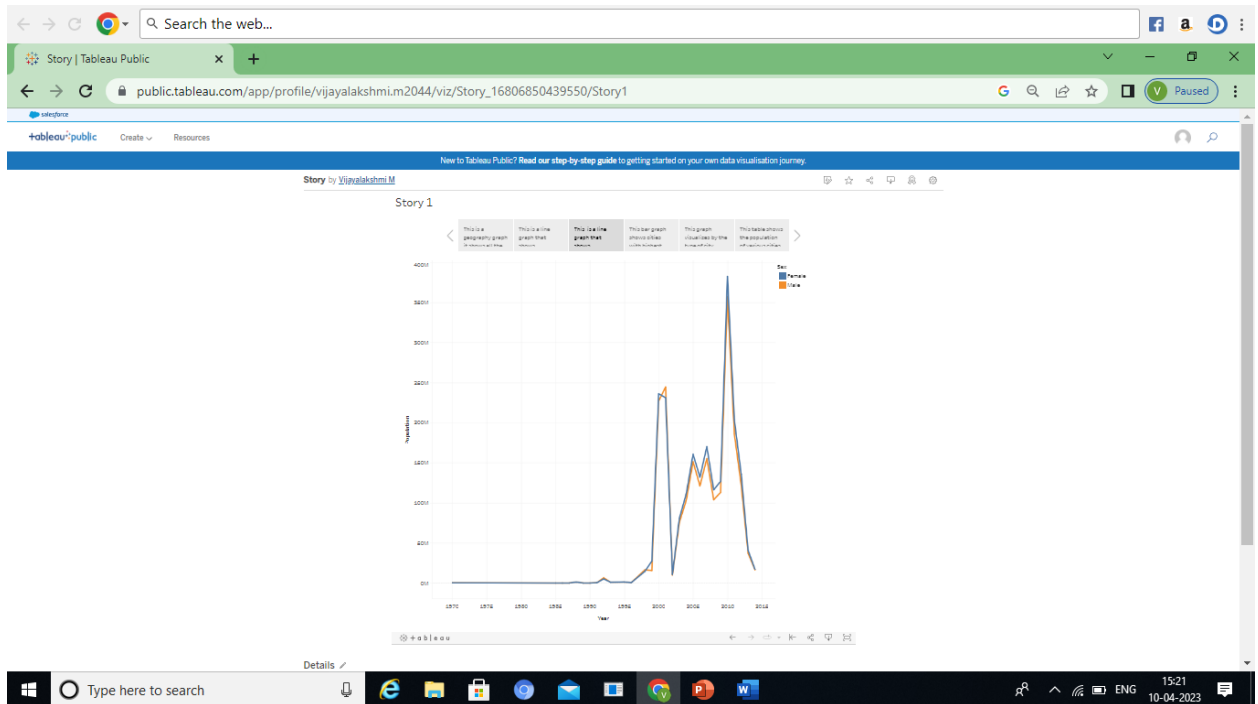
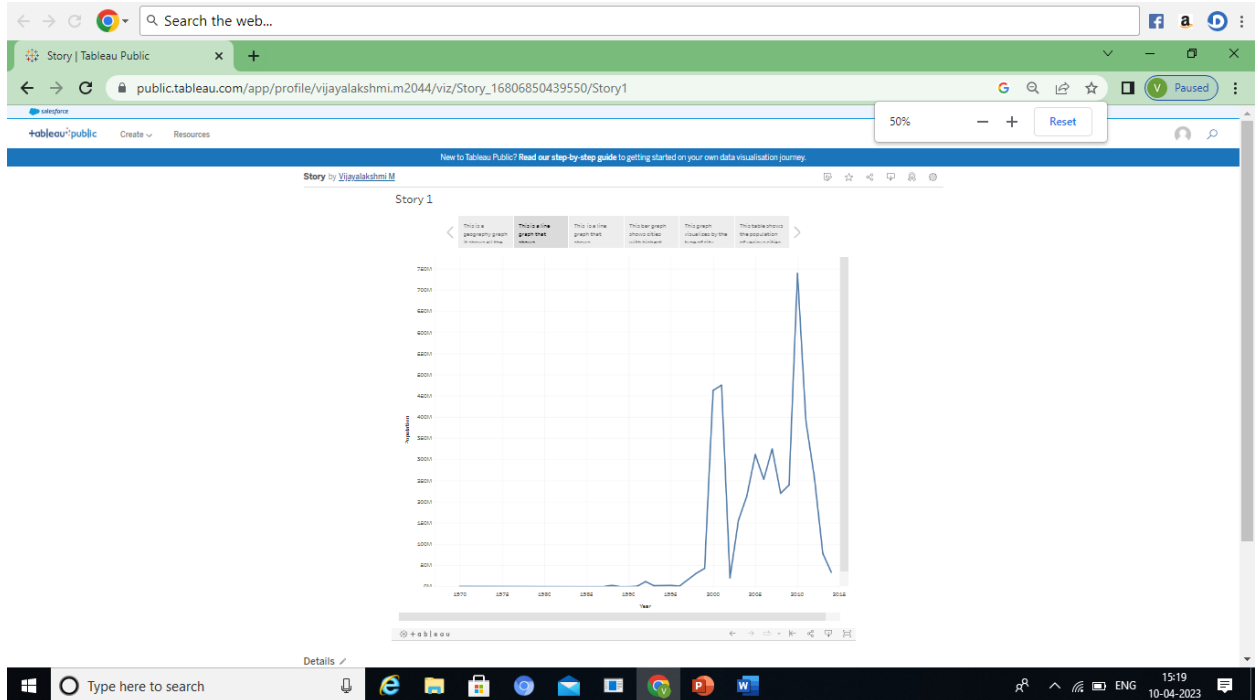
## DASHBOARD:

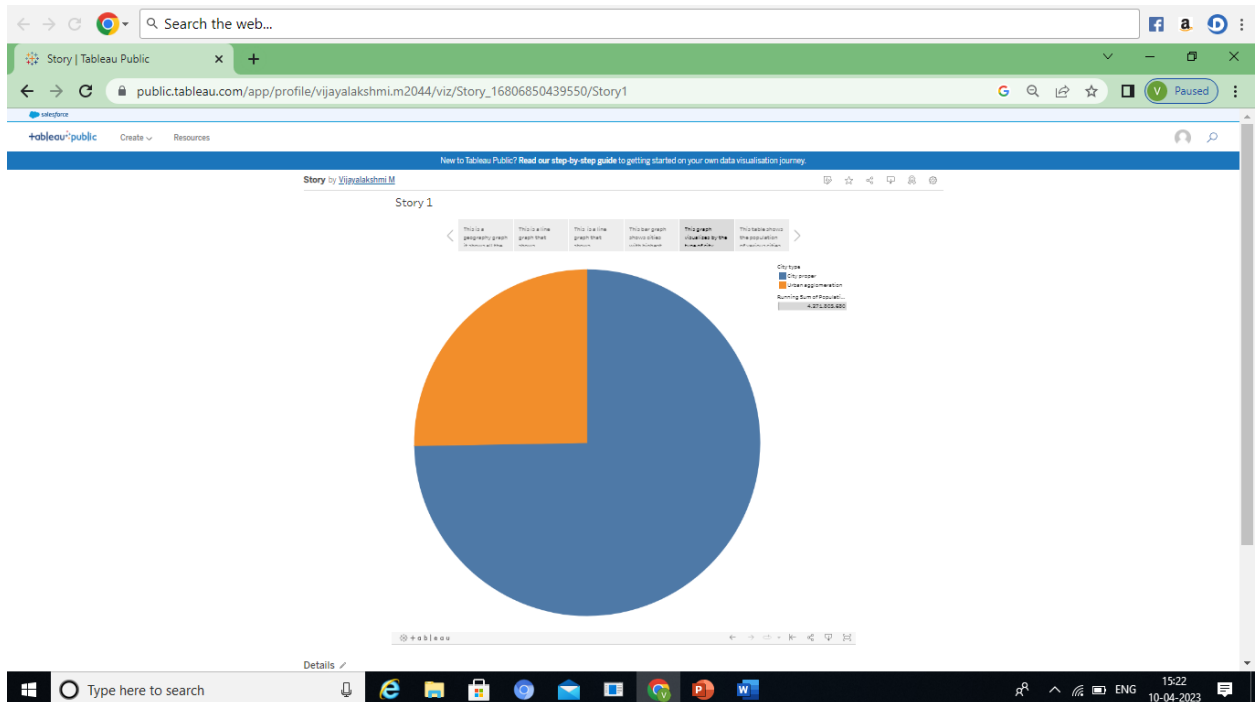
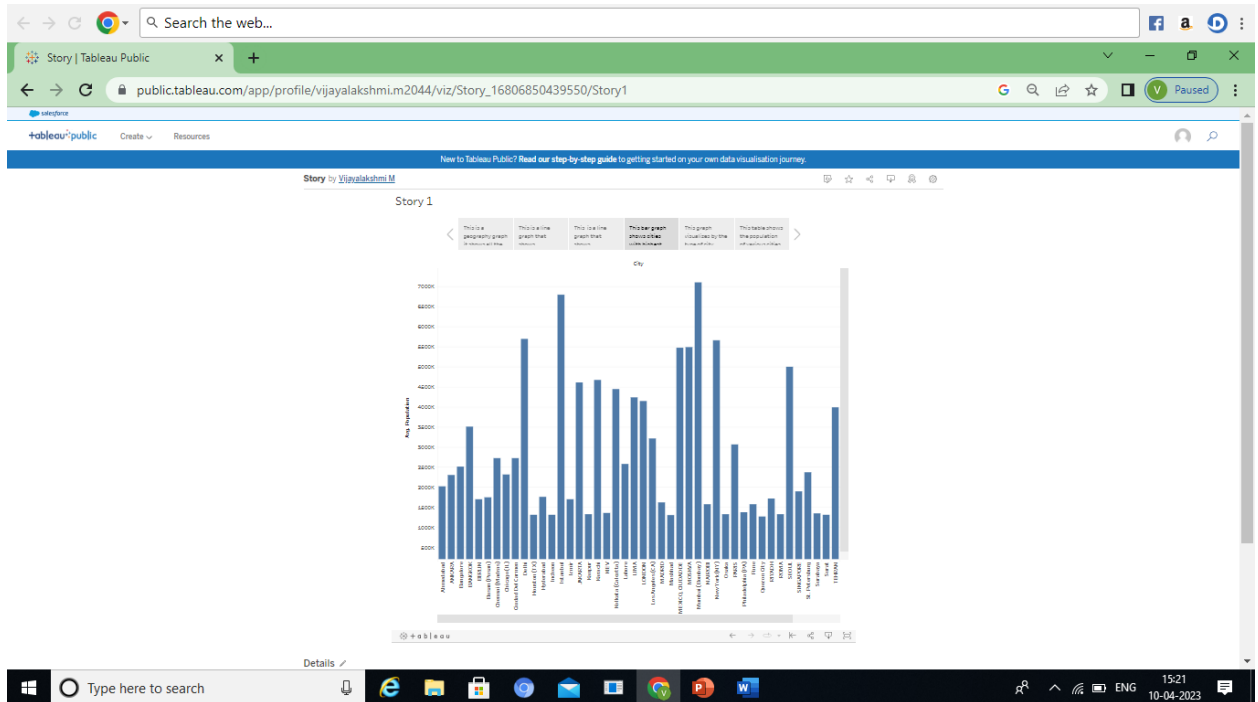


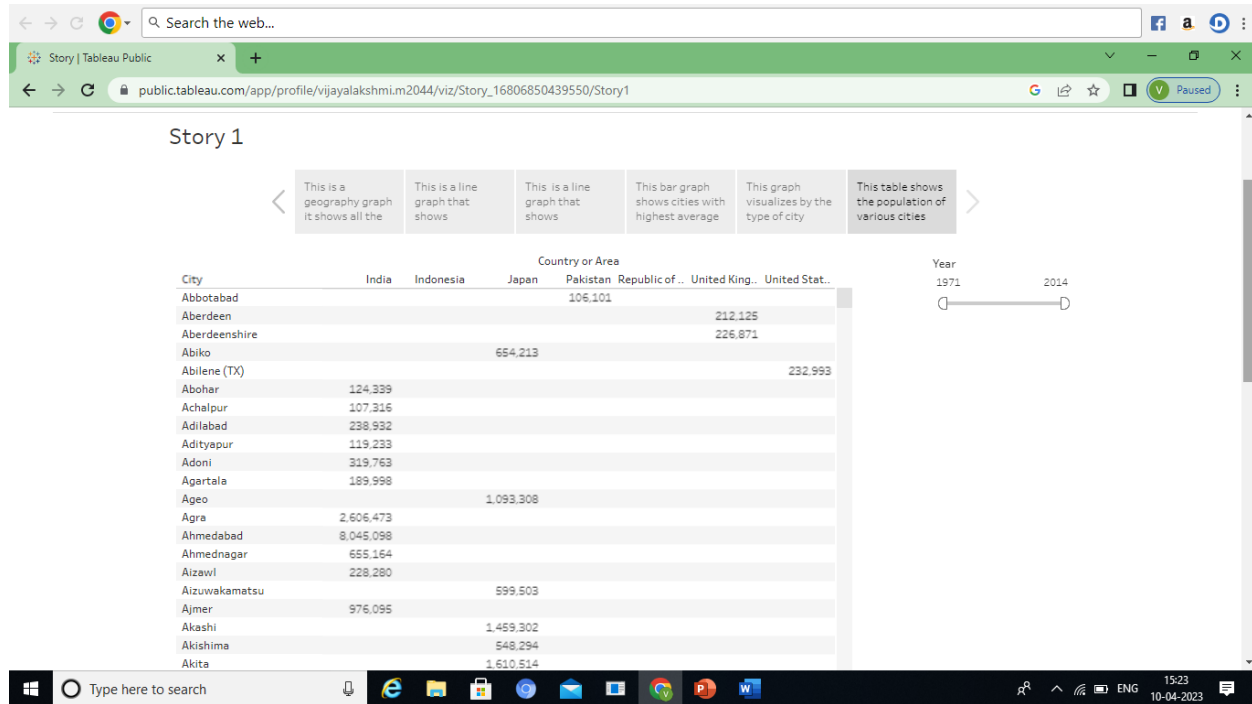
## STORY:











## 4. ADVANTAGES AND DISADVANTAGES:

### Advantages:

It is important to have high quality statistics on the population and projections of the population, for policy development and for planning and providing public services. Their uses include:

- central and local finance allocation;
- informing local and national policy;
- childcare and schools planning;
- housing and land use planning;
- health care planning;
- modelling and projecting health care indicators;
- weighting surveys;
- benchmarking other projections and as a control for smaller area projections;
- looking at the implications of an ageing population;
- making national and international comparisons.

**Disadvantages:**

- Population forecasts try to estimate the rate of population growth. However, unpredictable factors can change fertility rates, mortality rates, or migration rates, which can cause difficulty in forecasting.
- Certain government policies are making it easier and more socially acceptable to use contraception and abortion methods. Likewise, some countries are instituting pro-natalist policies to encourage fertility.
- Malthusian catastrophe refers to a scenario where overpopulation would compromise global food security, leading to mass starvation.
- In the future, food production be increased by innovations such as genetically modified crops, more efficiently employing agricultural technology, and aquaculture. This would raise the limit on the number of people the world can support.

**5.APPLICATIONS**

As we are analysing about population growth we can predict earlier about the increased pressure on natural environment and should eradicate the disadvantages raised by over population. And also there will be more shortage of water because of increased population this can be avoided by taking some precautionary steps .

As population growth leads to congestion and more waste creation so we should create awareness earlier by forecasting population growth. Population forecasting is important since it helps people i.e government, researchers make decisions about the future.

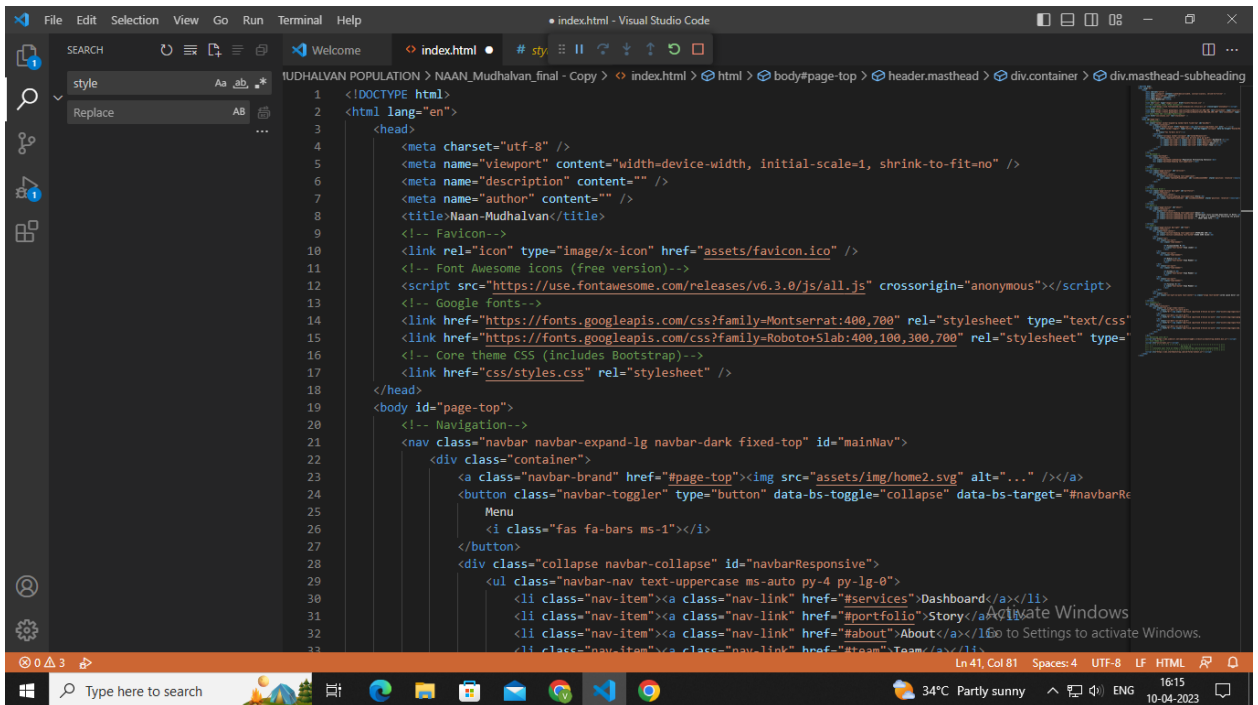
**6.CONCLUSION:**

Here we analysed the global population growth by creating Empathy map, Brainstorming and visualized the data using Tableau. Thus this project helps to develop a better society.

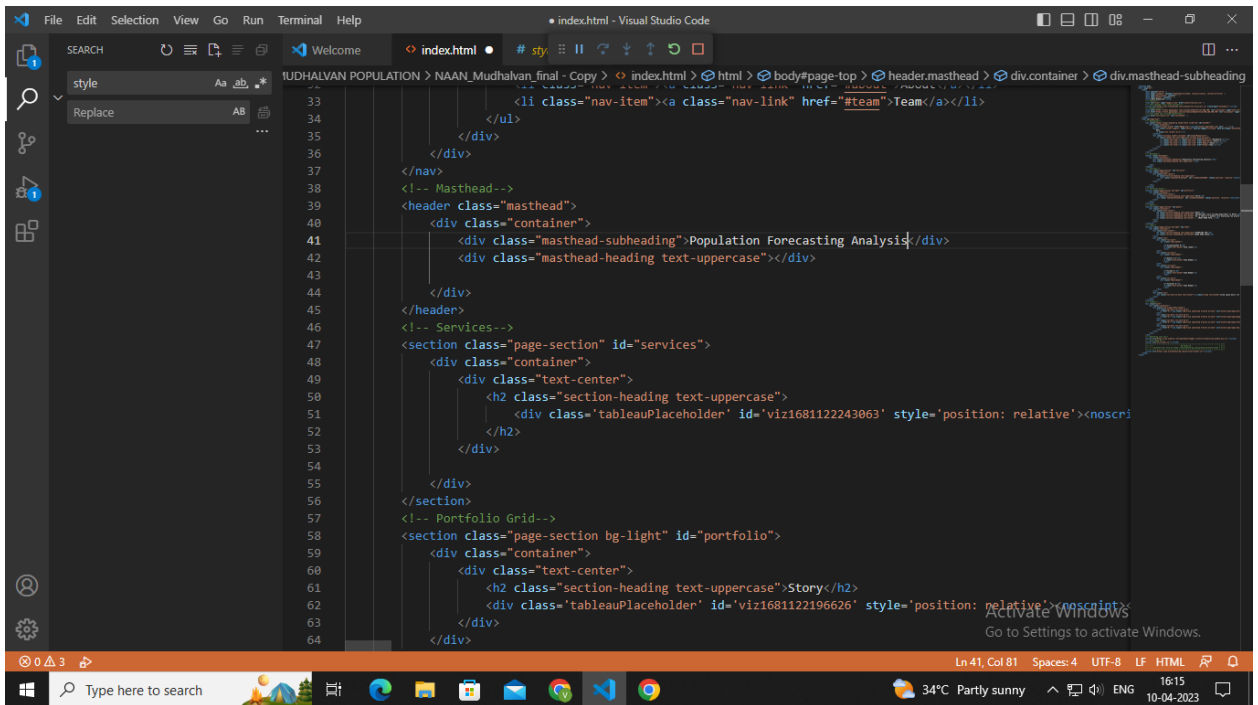
**7.FUTURE SCOPE:**

We can enhance the result in future by if any pandemic arises. We can use our analysis in future to make a better community. If any situation changes we can easily modify the visualisation.

## 8. APPENDIX:



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8" />
5   <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
6   <meta name="description" content="" />
7   <meta name="author" content="" />
8   <title>Naan-Mudhalvan</title>
9   <!-- Favicon -->
10  <link rel="icon" type="image/x-icon" href="assets/favicon.ico" />
11  <!-- Font Awesome icons (free version) -->
12  <script src="https://use.fontawesome.com/releases/v6.3.0/js/all.js" crossorigin="anonymous"></script>
13  <!-- Google fonts -->
14  <link href="https://fonts.googleapis.com/css?family=Montserrat:400,700" rel="stylesheet" type="text/css" />
15  <link href="https://fonts.googleapis.com/css?family=RobotoSlab:400,100,300,700" rel="stylesheet" type="text/css" />
16  <!-- Core theme CSS (includes Bootstrap) -->
17  <link href="css/styles.css" rel="stylesheet" />
18 </head>
19 <body id="page-top">
20   <!-- Navigation -->
21   <nav class="navbar navbar-expand-lg navbar-dark fixed-top" id="mainNav">
22     <div class="container">
23       <a class="navbar-brand" href="#page-top"></a>
24       <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarResponsive"
25         <!-- Menu -->
26         <i class="fas fa-bars ms-1"></i>
27       </button>
28       <div class="collapse navbar-collapse" id="navbarResponsive">
29         <ul class="navbar-nav text-uppercase ms-auto py-4 py-lg-0">
30           <li class="nav-item"><a class="nav-link" href="#services">Dashboard</a></li>
31           <li class="nav-item"><a class="nav-link" href="#portfolio">Story</a></li>
32           <li class="nav-item"><a class="nav-link" href="#about">About</a></li>
33           <li class="nav-item"><a class="nav-link" href="#team">Team</a></li>
34         </ul>
35       </div>
36     </div>
37   </nav>
38   <!-- Masthead -->
39   <header class="masthead">
40     <div class="container">
41       <div class="masthead-subheading">Population Forecasting Analysis</div>
42       <div class="masthead-heading text-uppercase"></div>
43     </div>
44   </header>
45   <!-- Services -->
46   <section class="page-section" id="services">
47     <div class="container">
48       <div class="text-center">
49         <h2 class="section-heading text-uppercase"></h2>
50         <div class="tableauPlaceholder" id="viz1681122243063" style="position: relative;"><noscript>
51           <h2>
52         </div>
53       </div>
54     </div>
55   </section>
56   <!-- Portfolio Grid -->
57   <section class="page-section bg-light" id="portfolio">
58     <div class="container">
59       <div class="text-center">
60         <h2 class="section-heading text-uppercase">Story</h2>
61         <div class="tableauPlaceholder" id="viz1681122196626" style="position: relative;"><noscript>
62           <h2>
63         </div>
64       </div>
65     </div>
66   </section>
67 </body>
68 </html>
```



```
69   <div class="text-center">
70     <h2 class="section-heading text-uppercase">Story</h2>
71     <div class="tableauPlaceholder" id="viz1681122196626" style="position: relative;"><noscript>
72       <h2>
73     </div>
74   </div>
75 </div>
76 </section>
77 </body>
78 </html>
```

```
67 <section class="page-section" id="about">
68 <div class="container">
69 <div class="text-center">
70 <h2 class="section-heading text-uppercase">About</h2>
71 <h3 class="section-subheading text-muted">Rajapalayam rajus'College,Department of Maths</h3>
72 <h3 class="section-subheading text-muted">We, a team of 4 members are analysing the growth
73 <h3 class="section-subheading text-muted">... SMART WORK PAYS...</h3>
74 </div>
75 </div>
76 </section>
77 <!-- Team -->
78 <section class="page-section bg-light" id="team">
79 <div class="container">
80 <div class="text-center">
81 <h2 class="section-heading text-uppercase">SPARKLERS 360</h2>
82 <h3 class="section-subheading text-muted">VIDEO GAME SALES</h3>
83 </div>
84 <div class="row">
85 <div class="col-lg-4">
86 <div class="team-member">
87 <h4>Vijayalakshmi M</h4>
88 <p class="text-muted">Team Leader</p>
89 </div>
90 </div>
91 <div class="col-lg-4">
92 <div class="team-member">
93 <h4>Rubini S S</h4>
94 <p class="text-muted">Team Member</p>
95 </div>
96 </div>
97 </div>
98 </div>
99 </section>
```

```
120 <div class="py-5">
121 <div class="container">
122 <div class="row align-items-center">
123 <div class="col-md-3 col-sm-6 my-3">
124 <a href="#">
127 <a href="#">
130 <a href="#">
133 <a href="#"></script>
140 <!-- Core theme JS -->
141 <script src="js/scripts.js"></script>
142 <!-- *****
143 <!-- * * SB Forms JS * *
144 <!-- * * Activate your form at https://startbootstrap.com/solution/contact-forms * *
145 <!-- *****
146 <script src="https://cdn.startbootstrap.com/sb-forms-latest.js"></script>
147 </body>
148 </html>
149
```



# THANK YOU