TRACING THE GROWTH OF GLOBAL COMMUNITY: A POPULATION FORECASTING ANALYSIS

PROJECT SUBMITTED TO BHARATHIYAR UNIVERSITY FOR NAAN MUDHALVAN SCHEME

FOR THE AWARD OF THE DEGREE OF

B.Sc.PHYSICS

Submitted By

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1. INTRODUCTION:

OVERVIEW

In the solution of any planning problem, the planner either makes an explicit forecast, or makes some implicit assumption about the population for which he is planning. "Population" includes much more than mere numbers of people. The planner must know what kind of people live in his planning area, what types of lives they lead, and would like to lead, how long they will live, and how long they will reside in the particular area; and who will replace them when they move out or die; how many children they will have (and would like to have under different conditions), whether these children will live in the area, and many other factors.

Many communities have installed facilities which have become useless because predicated on faulty estimates of future population, or they have failed to install facilities where justified by future population. A common example of such errors is the newly constructed school in an area where the population is aging rather than being replaced by young, child-bearing families. Sewer systems have been expensively developed only to be later replaced because the population soon was double or triple what was anticipated for the area. Narrow streets have been later widened at great

expense. On the other hand, land often has been overly zoned for commercial purposes in the expectation of a vast increase in population which did not materialize. Or land was zoned for potential capacities in some cities of whole state or even the entire population of the country. Prematurely subdivided land is plaguing many of our communities today.

PURPOSE

The next step is the analysis of current population so that the characteristics of future population may be assessed. In making a population estimate, the planner is not interested merely in how many people will be in his area in 1960 or 2000, but what kind of people they will be, in terms of age, sex, race, income. It is assumed that the planner will utilize population data collected by the U. S. Census which is available for many different sized areas — including groupings of residential blocks (census tracts) within large cities. Census data give information inter alia on age, race and sex classifications and characteristics of the labor force, all of which will be relevant at some level of the projection procedure.

The chief defect of census figures is that since the census is taken only every ten years, the data decrease in accuracy later in the decade. The Bureau of the Census does conduct sample studies of changes in the nation and of specific areas between censuses. These studies will be of general interest but in most cases the planner may need to supplement

decennial census data from local sources. Some states, such as Massachusetts, conducted population studies at the mid-point of the decade. The number of births and deaths are generally available from official city or state records of vital statistics. The number of households may be discovered through the records of the utilities companies. It is more difficult to obtain age and sex figures, although approximations and trends can be discovered from various agencies. School attendance figures are, at least in urban areas (and where available), a guide to changes in the school age population. The United States Employment Office issues social security cards to newcomers into the labor force. Migration figures can perhaps be estimated from the record of real estate offices, transportation agencies, telephone and utility companies. Although it is imperative that local resources be utilized between the decennial censuses, the 1950 U. S. Census preliminary reports have indicated that in many instances local figures were inaccurate, erring mostly by having overstated the local population.

A comparison should be made of current population data with that of the previous decades. In the study of the relationships between present and past data, trends may be discovered. For example, there may be a clear indication of an increasing number of older persons in the community. In determining a trend, care must be taken to see that the base period is selected properly, and that depression and war-time considerations are taken into account. A trend should be used in the study only if the reasons for its existence are

known. There is a danger of trying to see trend relationships which do not really exist and to project trend lines which are incorrect and misleading.

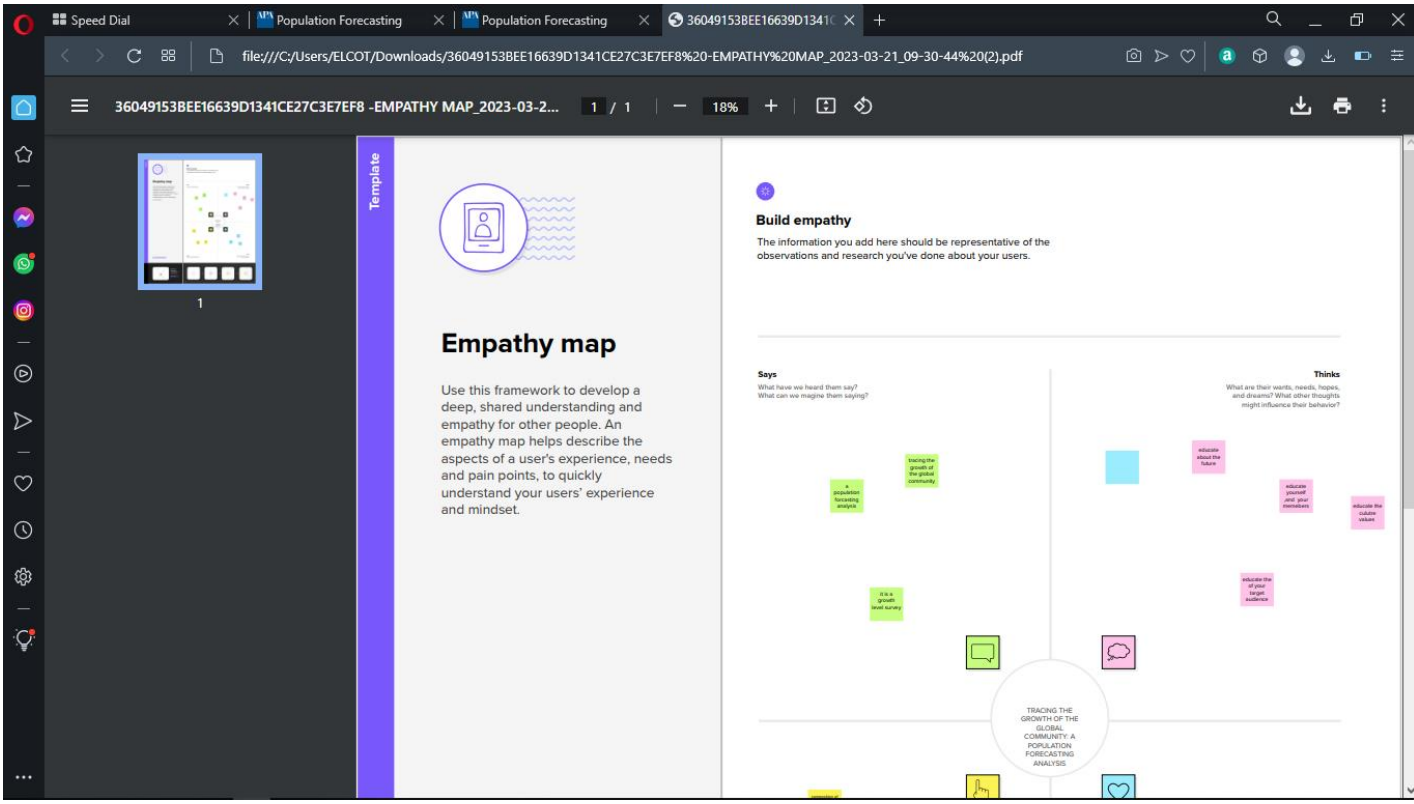
For example, using the late 1930's as an illustration of the base period, a trend of increasing marriages and birth rates can be shown since the early 1940' s, — a trend or "baby boom" which is still continuing. Projecting such a trend would indicate a large increase in births in the future. If birth rates or the number of births in the last 50–75 years are charted, however, the optimistic trend (indicated above) is seen as an upward hump in a trend that is generally headed downward. A decision must be made as to whether a new trend is emerging, or whether the longer base period should be used and there is an upward hump in the former trend.

year per nation, which amounts to an increase in CO2 every year. This will help researchers and environment experts to predict global warming. So countries should set a goal to decrease this amount yearly.

Analysing Global Co2 Emission across countries from 1975 to 2020. This dataset contains a record of Co2 Emission by each Country and Region of Earth, here we are going to analyse and visualise Country wise,

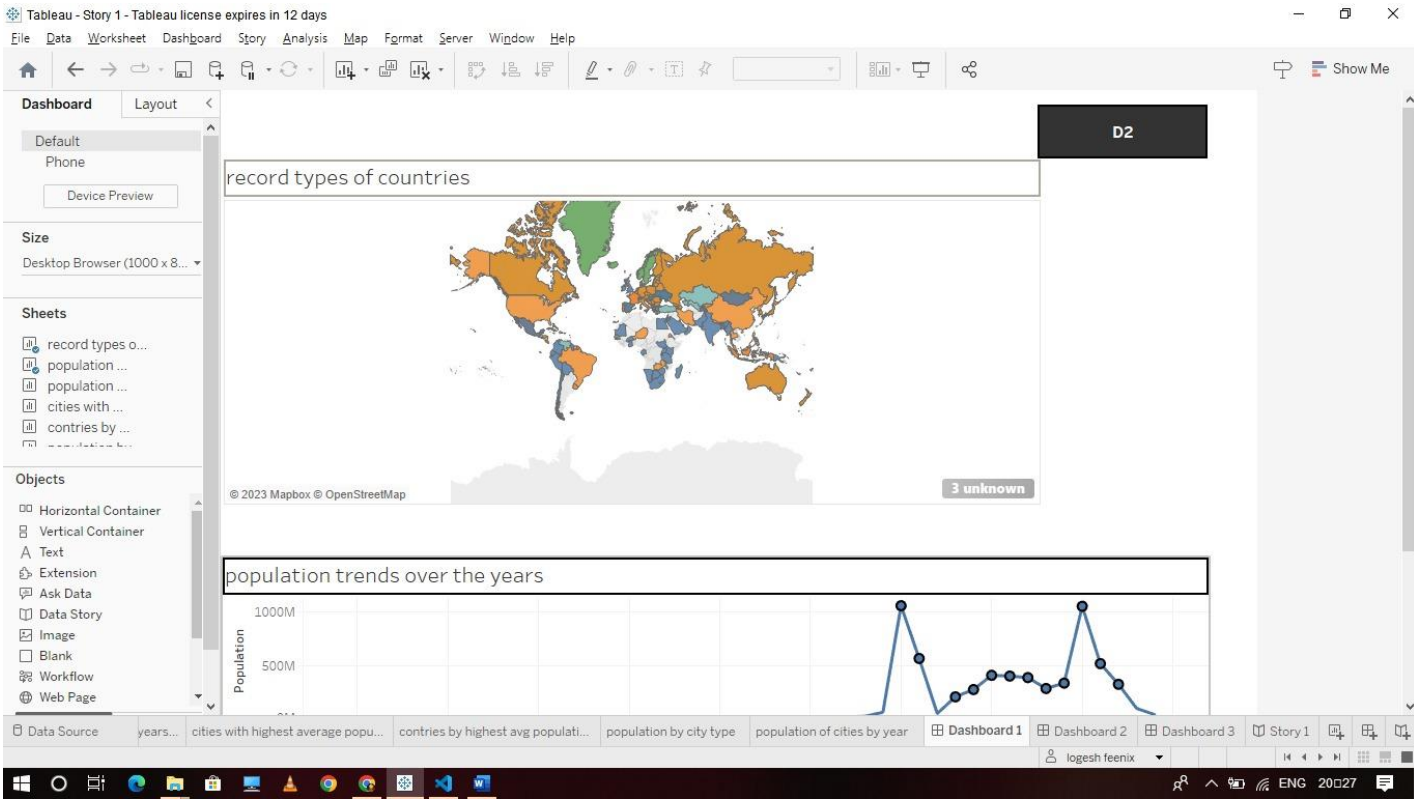
2.PROBLEM DEFINITION & DESIGN THINKING

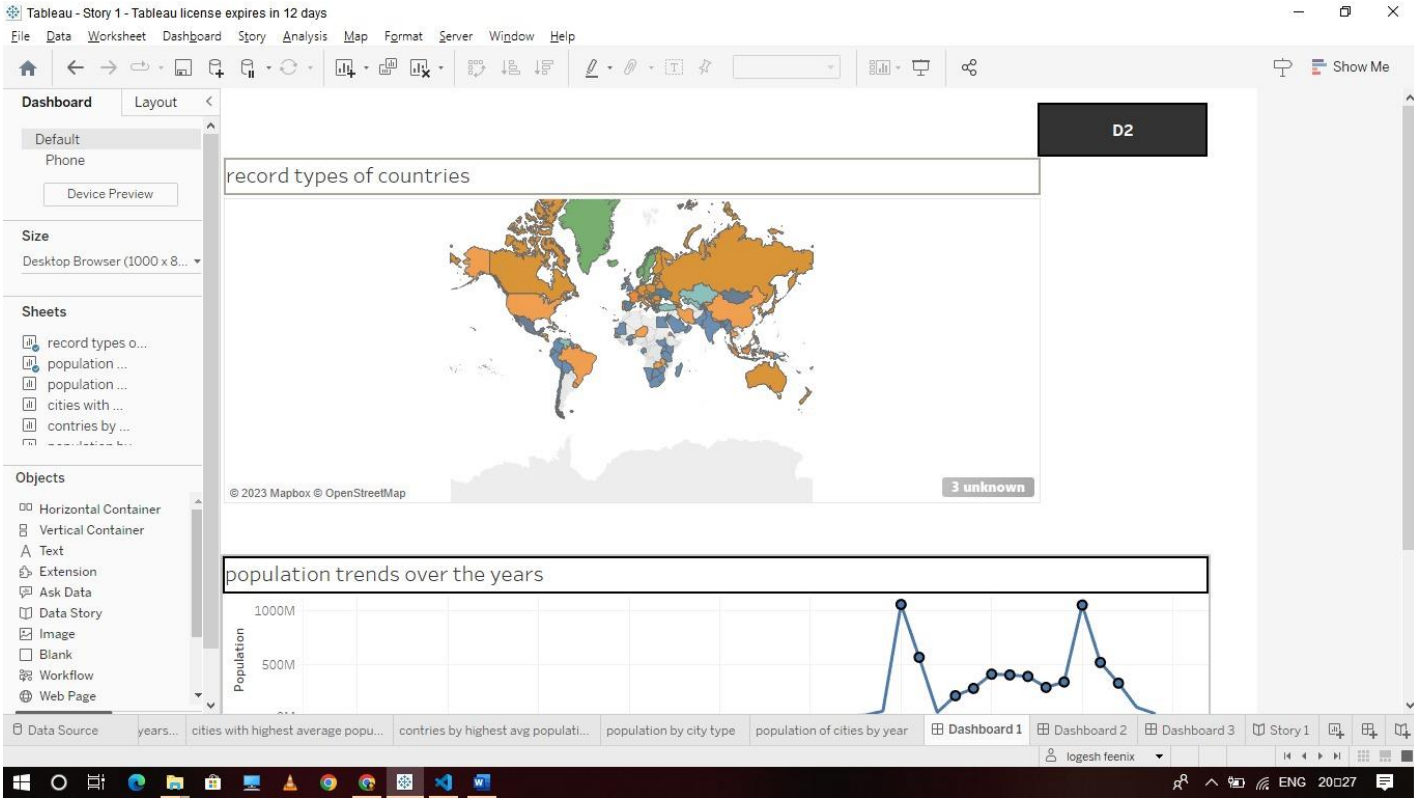
1.EMPATHY MAP



IDEATION & BRAINSTORMING MAP

3.RESULT

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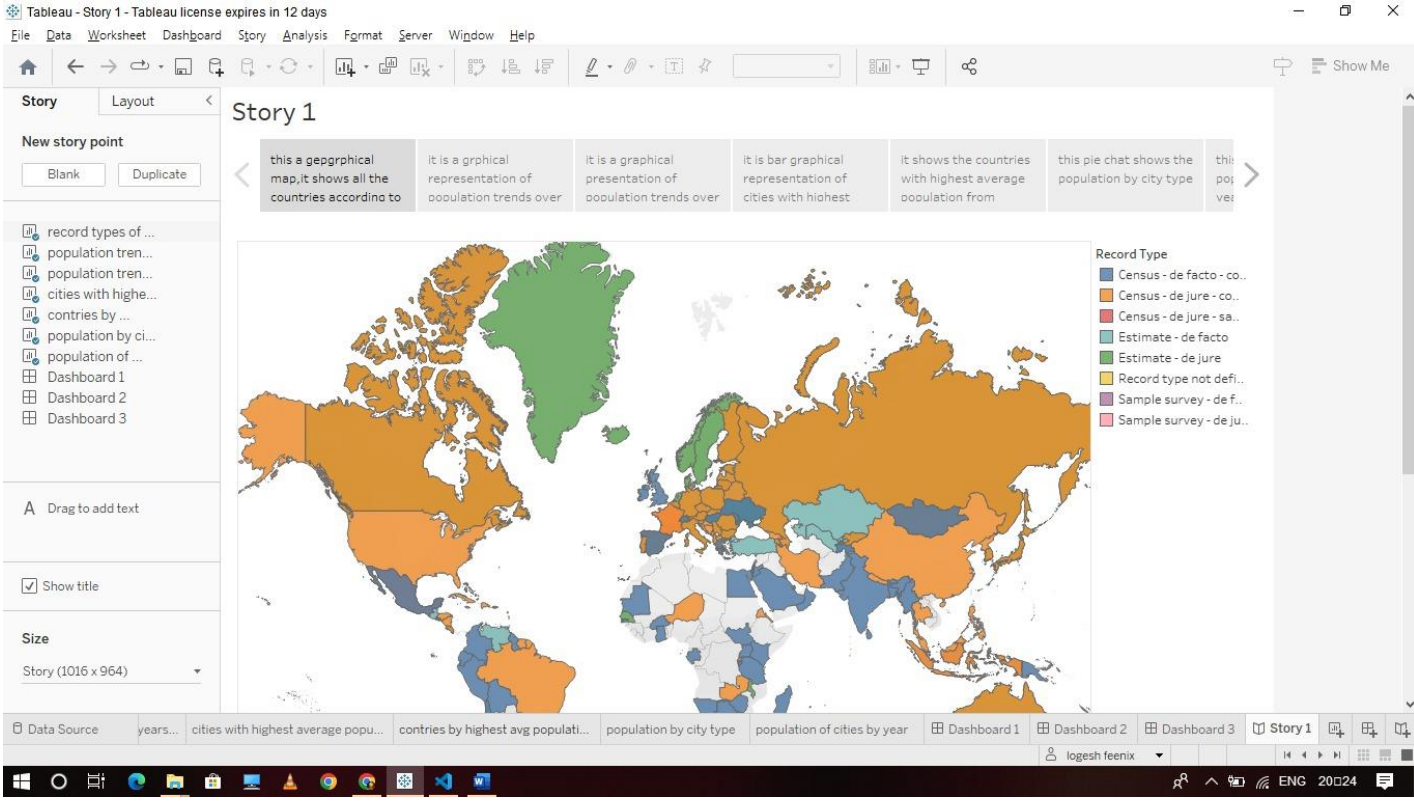
STORY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ADVANTAGES AND DISADVANTAGES

ADVANTAGES

DISADVANTAGES OF MATHEMATICAL PROJECTION METHODS

Usually, comparison of actual population with that estimated via geometric projection reveals that the estimate was much too large. A study of Oakland and Berkeley, California, done in 1915, made two predictions for San Francisco's population in 1940. One prophesized a population of 909,000 and the other 1,290,000. San Francisco's actual population in 1940 was 635,000. Two estimates made in 1931 for Cedar Rapids, Iowa for 1940 ranged between 74,000–80,000 while the actual population in 1940 was only 62,000. A 1920 Decatur, Illinois, study expected 85,000 by 1940 and 150,000 people by 1956, but in 1940 the city had only 59,000. On the other hand, the 1930 Master Plan for Rockland County and Ramapo, New York, had over-estimated 1940 population by only 5 percent, and a 1924 Memphis, Tennessee, study which assumed a 25 percent increase per decade, estimated its 1940 population at 255,000, while its population had actually climbed to 293,000 that year. In general, however, over-estimates are more frequent. If only some of these almost fantastic local population forecasts made in the past were added together, the result might have anticipated a population for the United States of close to a billion.

A major defect of the geometric method (that of assuming a constant proportional change) was supposedly eliminated by the logistic S shaped curve developed by Raymond Pearl. This geometric projection assumes that the percentage of growth will increase for a while, then decrease and finally in the dim future stabilize itself. A city, by analyzing its growth pattern, would simply have to find its present location on the S curve (whether increasing or decreasing) and then follow the type of trend Pearl and his associates worked out for New York City.

Predictions for two cities which used this method in 1924 and 1925 compare with actuality thus:

	1940 ESTIMATE	1940 ACTUAL
Lexington, Kentucky (1924)	60,000	49,000
Kenosha, Wisconsin (1925)	90,000	49,000

The advantage in using mathematical methods is that they are easy to compute, and that they sometimes have "worked." The methods are easy because the technique is (1) to assume a population increase without asking why this increase should take place, and (2) to assume that population trend lines will be static although the society changes in various ways. The fact that these methods have

sometimes been successful when used for very short periods of projection is perhaps due to the fact that this country has enjoyed a fairly stable rate of population increase. It is generally felt today that this period is coming to an end, and mathematical methods are no longer acceptable. Perhaps the best uses to which the mathematical methods may be put are as checks on analytical methods.

Projection: Analytic Methods

The second group of projection methods has been labelled "analytic," because emphasis is placed on why population numbers and characteristics change. This method involves discovery of the factors that influence present and past population increase and decrease. On the basis of assumptions concerning the future of these factors, and of other factors that are just emerging in the community, projections of fertility, mortality and migration trends are made. The main concern, therefore, is on analysis of the factors that influence population changes rather than on determination and projection of trends.

APPLICATIONS:

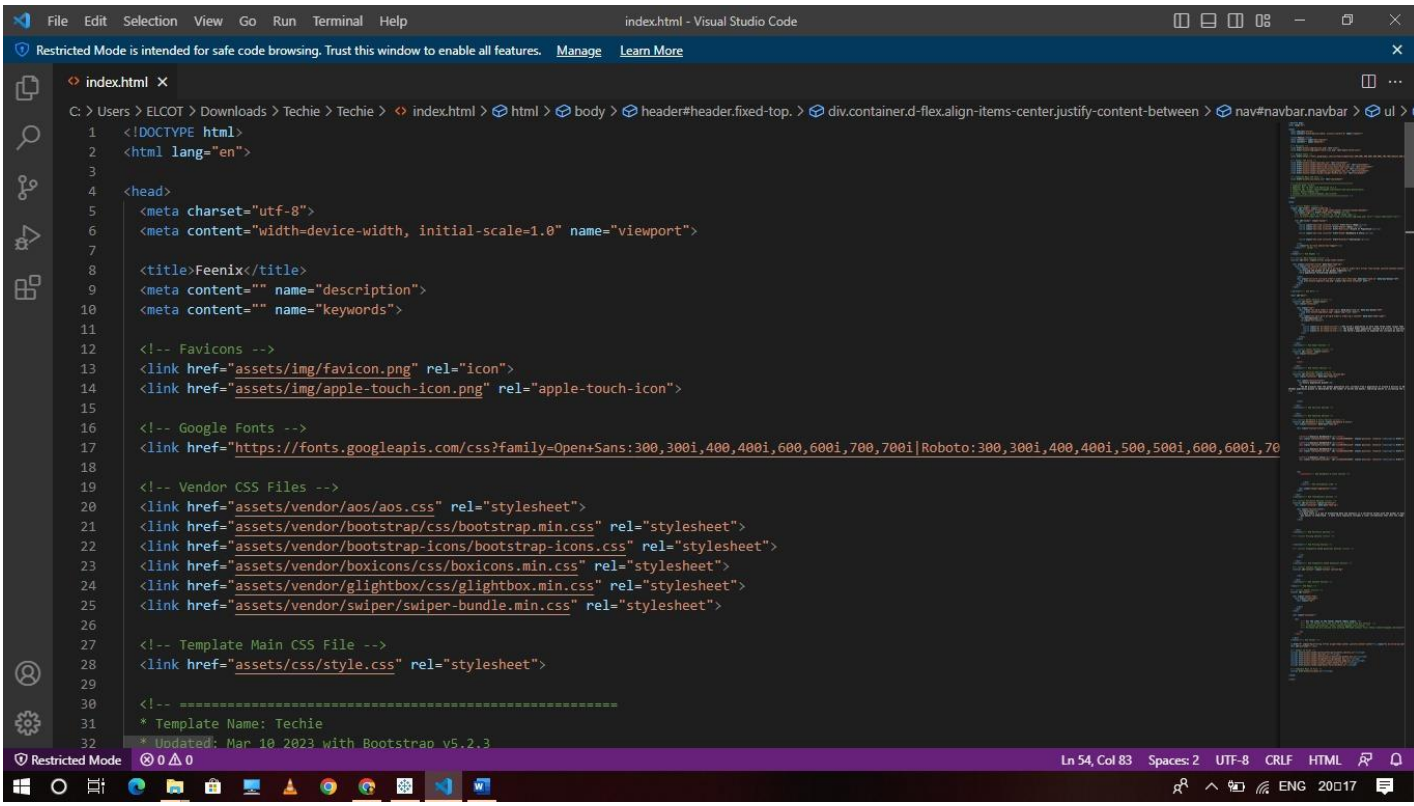
The analytical approach is generally associated with the work of P. K. Whelpton and Warren S. Thompson who used it in their estimates of future populations for the United States for the U. S. Bureau of the Census.[5] After analyzing what were then present population trends, they discussed the various factors that might change or stabilize these trends in mortality, fertility, and migration. From this analysis they concluded that no single estimate could be

made for the year of projection (2000); they therefore made three separate assumptions for a high, medium and low fertility and mortality rate and added migration assumptions to these. A population figure for the year 2000 was computed. They then carefully plotted (interpolated) a population curve from the year 1950 to the year 2000, being careful to adjust the slope of the curve (or rate of change) to empirical data based on their knowledge of trends. (See Appendix A for illustration.)

FUTURE SCOPE

Current population data are merely a base point from which to begin the projection process, and our primary interest is in population changes. There are three main sources of population change which the planner must take into consideration: (1) fertility and mortality, (2) in- and out-migration, and (3) annexation of territory. Only the first two will be discussed in this report, since the annexation process is an administrative device that does not affect population change per se but only alters the political divisions in which population is counted. Fertility rates are expressed in ratios of the number of live births to 1000 population, and mortality rates are expressed in ratios of the number of deaths per 1000 population. Various measurements of these rates are explained briefly in the next pages. Since these rates are statistical devises for communicating information, the various types should be labelled carefully and examined for content, similar to labelling and interpreting an "average" to be the mean, mode or median. When fertility and mortality rates are projected into the future, many assumptions must be made. The section on "Factors Influencing Population Change" indicates some of the assumptions, and their implications, which are inherent in projection of fertility and mortality rates, and are inherent in estimates of migration.

APPENDIX
SOURCE CODE



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  <meta content="width=device-width, initial-scale=1.0" name="viewport">

  <title>Feenix</title>
  <meta content="" name="description">
  <meta content="" name="keywords">

  <!-- Favicons -->
  <link href="assets/img/favicon.png" rel="icon">
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  <!-- Google Fonts -->
  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Roboto:300,300i,400,400i,500,500i,600,600i,70

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  <link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">

  <!-- Template Main CSS File -->
  <link href="assets/css/style.css" rel="stylesheet">

  <!-- =======================================================
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  * Updated: Mar 10 2023 with Bootstrap v5.2.3
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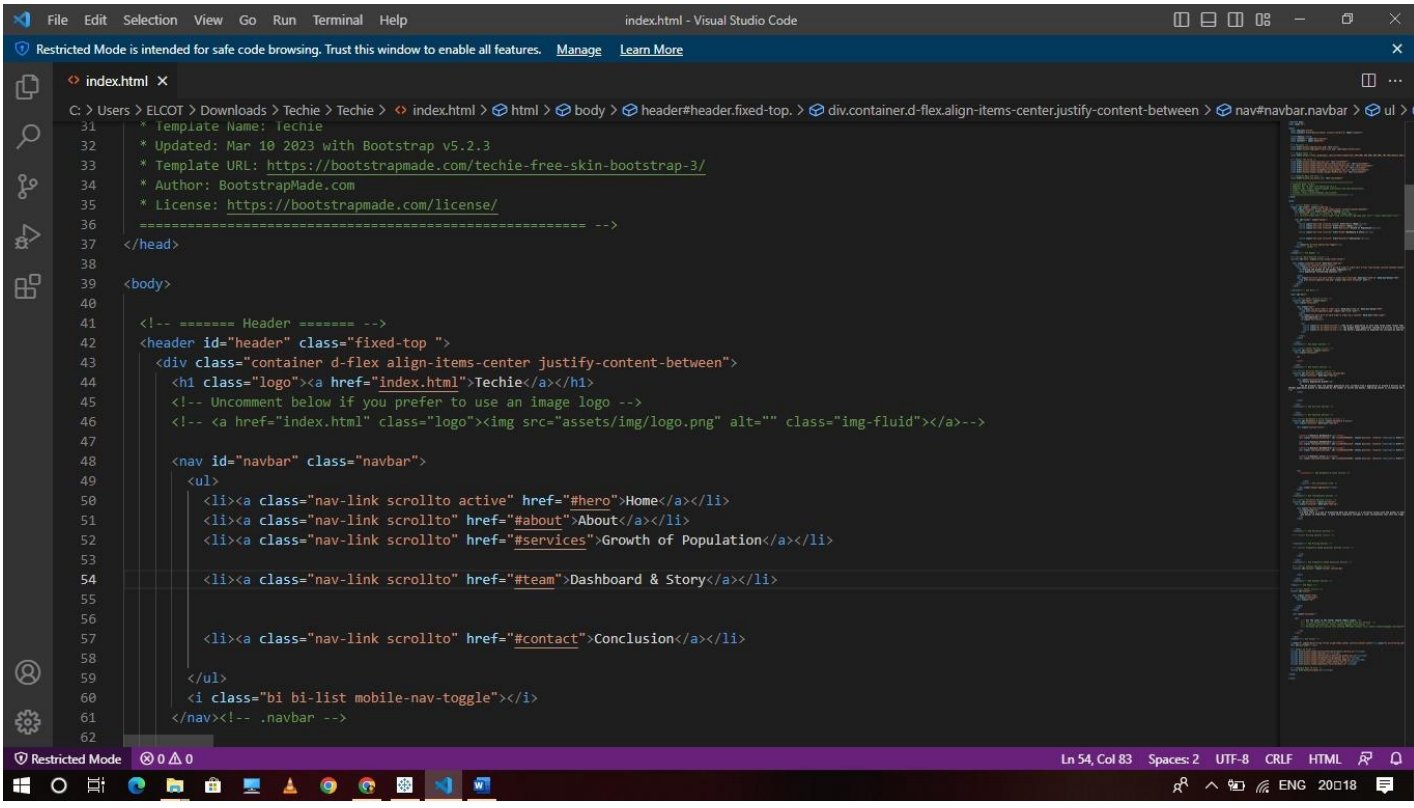

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  * Updated: Mar 10 2023 with Bootstrap v5.2.3
  * Template URL: https://bootstrapmade.com/techie-free-skin-bootstrap-3/
  * Author: BootstrapMade.com
  * License: https://bootstrapmade.com/license/
  ======================================================= -->
</head>

<body>

  <!-- ======= Header ======= -->
  <header id="header" class="fixed-top ">
    <div class="container d-flex align-items-center justify-content-between">
      <h1 class="logo"><a href="index.html">Techie</a></h1>
      <!-- Uncomment below if you prefer to use an image logo -->
      <!-- <a href="index.html" class="logo"><img src="assets/img/logo.png" alt="" class="img-fluid"></a>-->

      <nav id="navbar" class="navbar">
        <ul>
          <li><a class="nav-link scrollto active" href="#hero">Home</a></li>
          <li><a class="nav-link scrollto" href="#about">About</a></li>
          <li><a class="nav-link scrollto" href="#services">Growth of Population</a></li>

          <li><a class="nav-link scrollto" href="#team">Dashboard & Story</a></li>


          <li><a class="nav-link scrollto" href="#contact">Conclusion</a></li>

        </ul>
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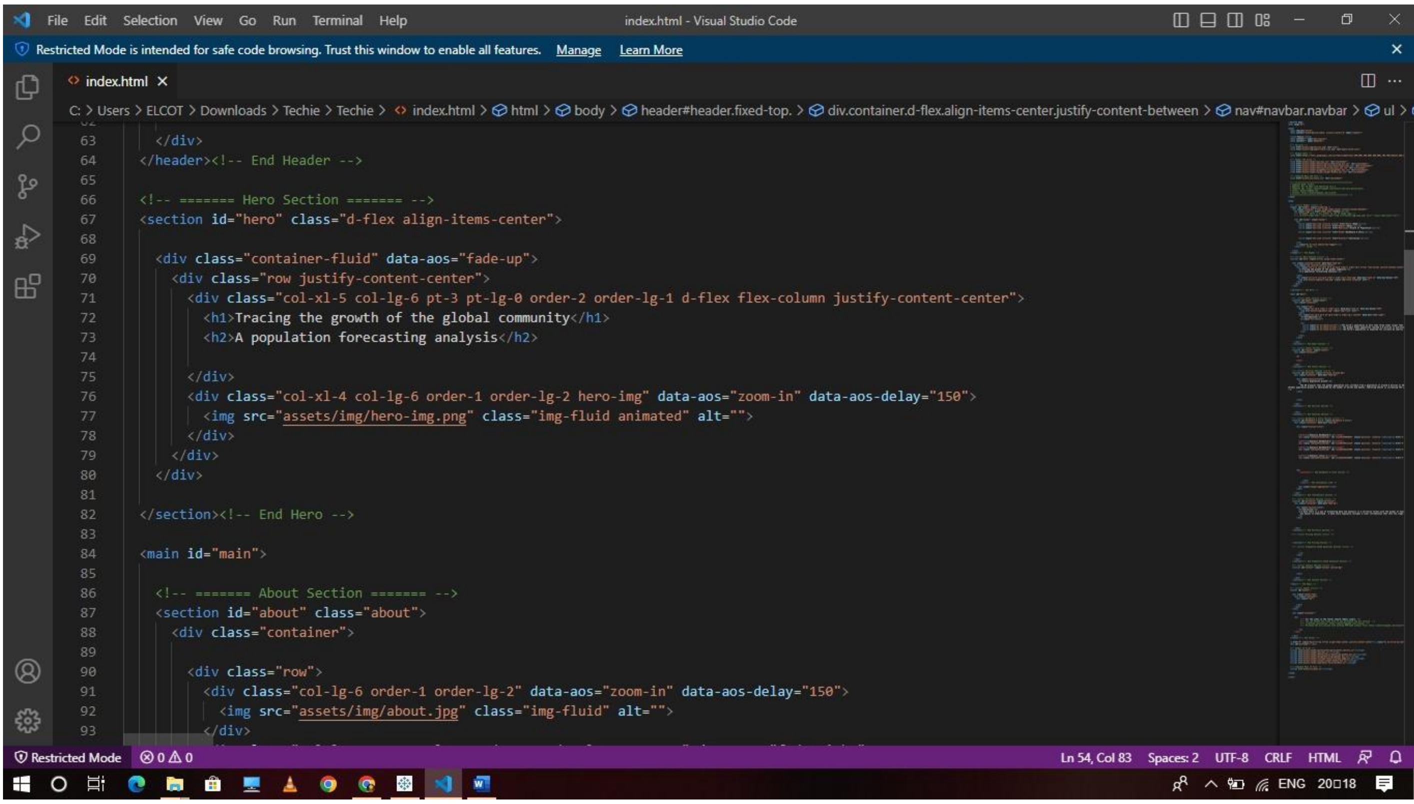

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</div>
</header><!-- End Header -->
<!-- ======= Hero Section ======= -->
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<div class="row justify-content-center">
<div class="col-xl-5 col-lg-6 pt-3 pt-lg-0 order-2 order-lg-1 d-flex flex-column justify-content-center">
<h1>Tracing the growth of the global community</h1>
<h2>A population forecasting analysis</h2>
</div>
<div class="col-xl-4 col-lg-6 order-1 order-lg-2 hero-img" data-aos="zoom-in" data-aos-delay="150">
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</div>
</div>
</div>
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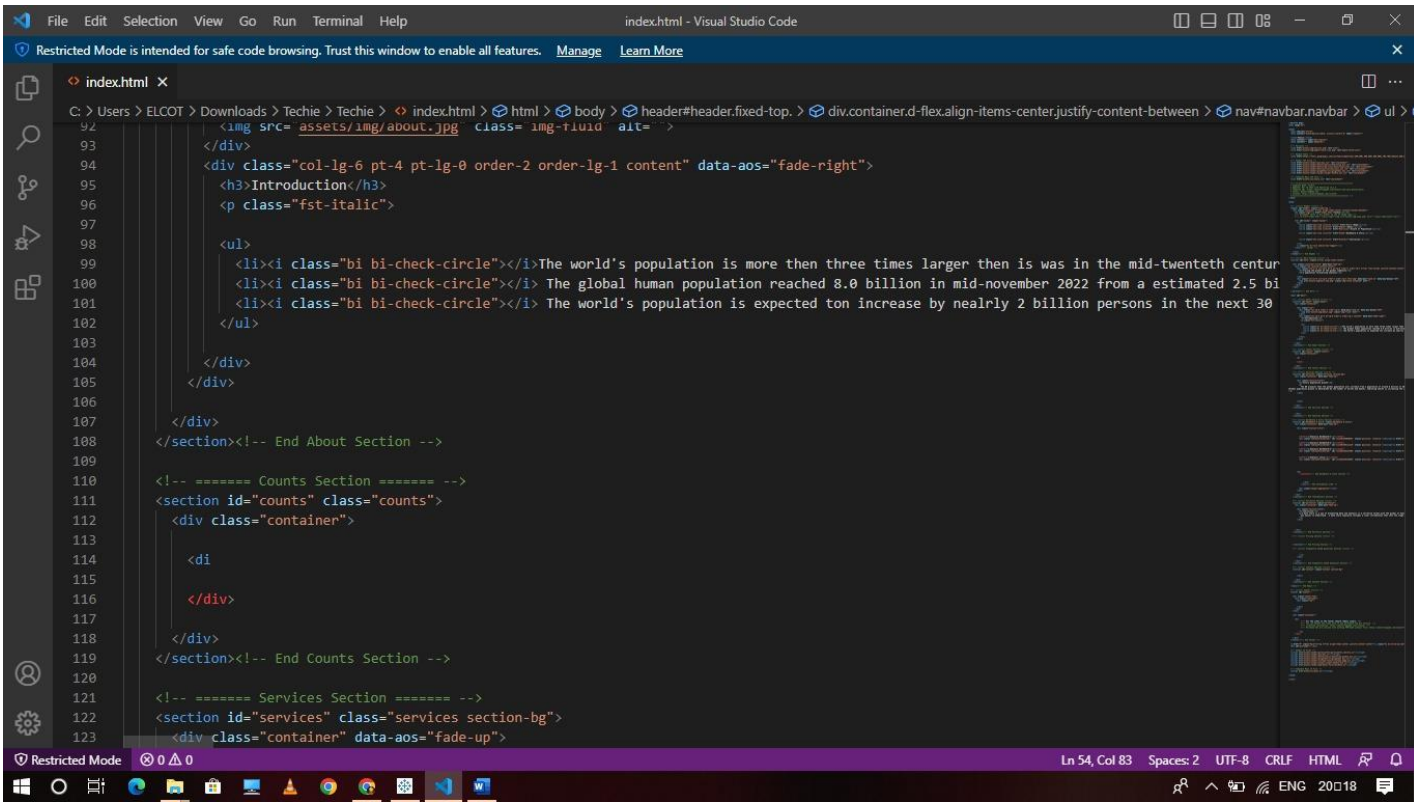
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<h3>Introduction</h3>
<p class="fst-italic">

The world's population is more then three times larger then is was in the mid-twenteth centur
 The global human population reached 8.0 billion in mid-november 2022 from a estimated 2.5 bi
 The world's population is expected ton increase by nealrly 2 billion persons in the next 30

</section><!-- End About Section -->
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<section id="counts" class="counts">

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</section><!-- End Counts Section -->
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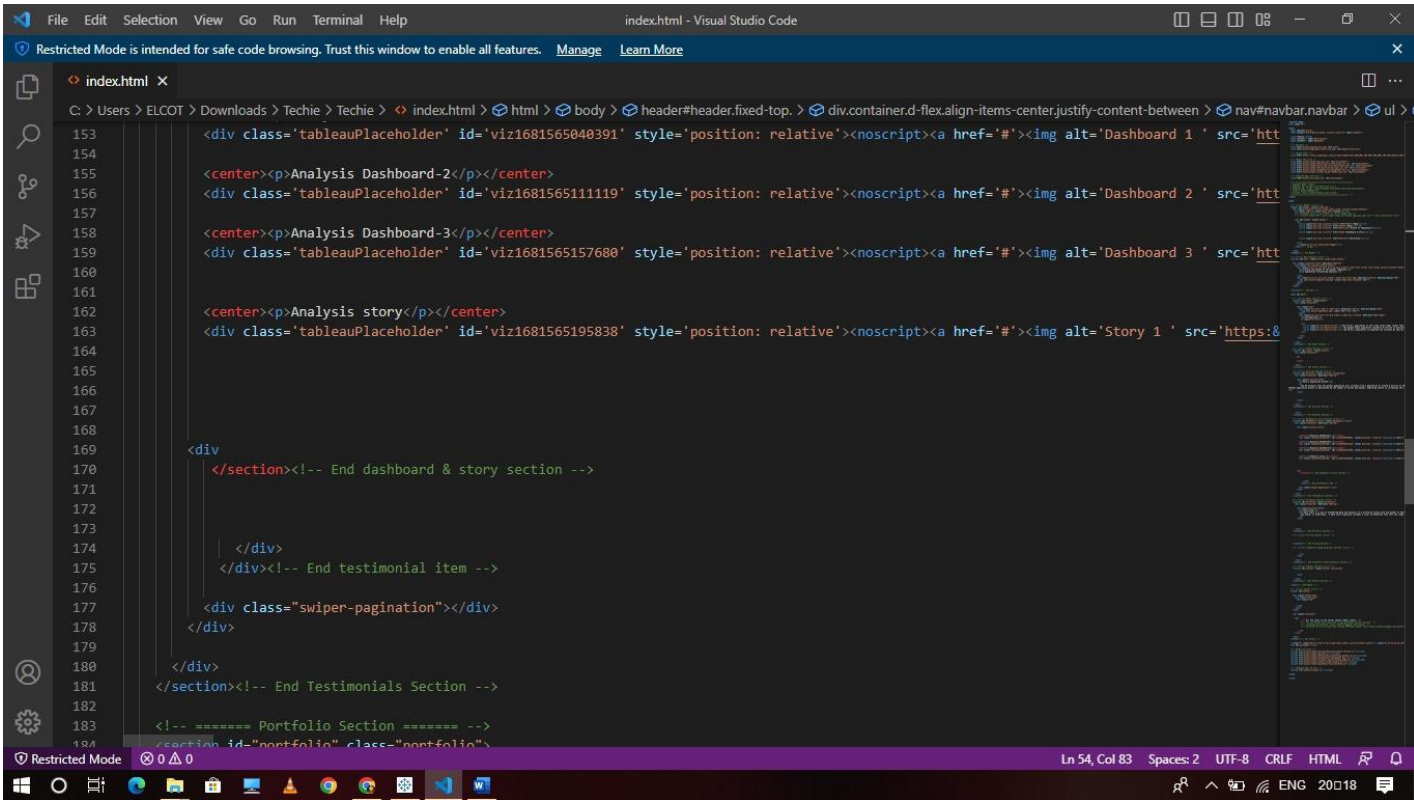
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</section><!-- End Testimonials Section -->
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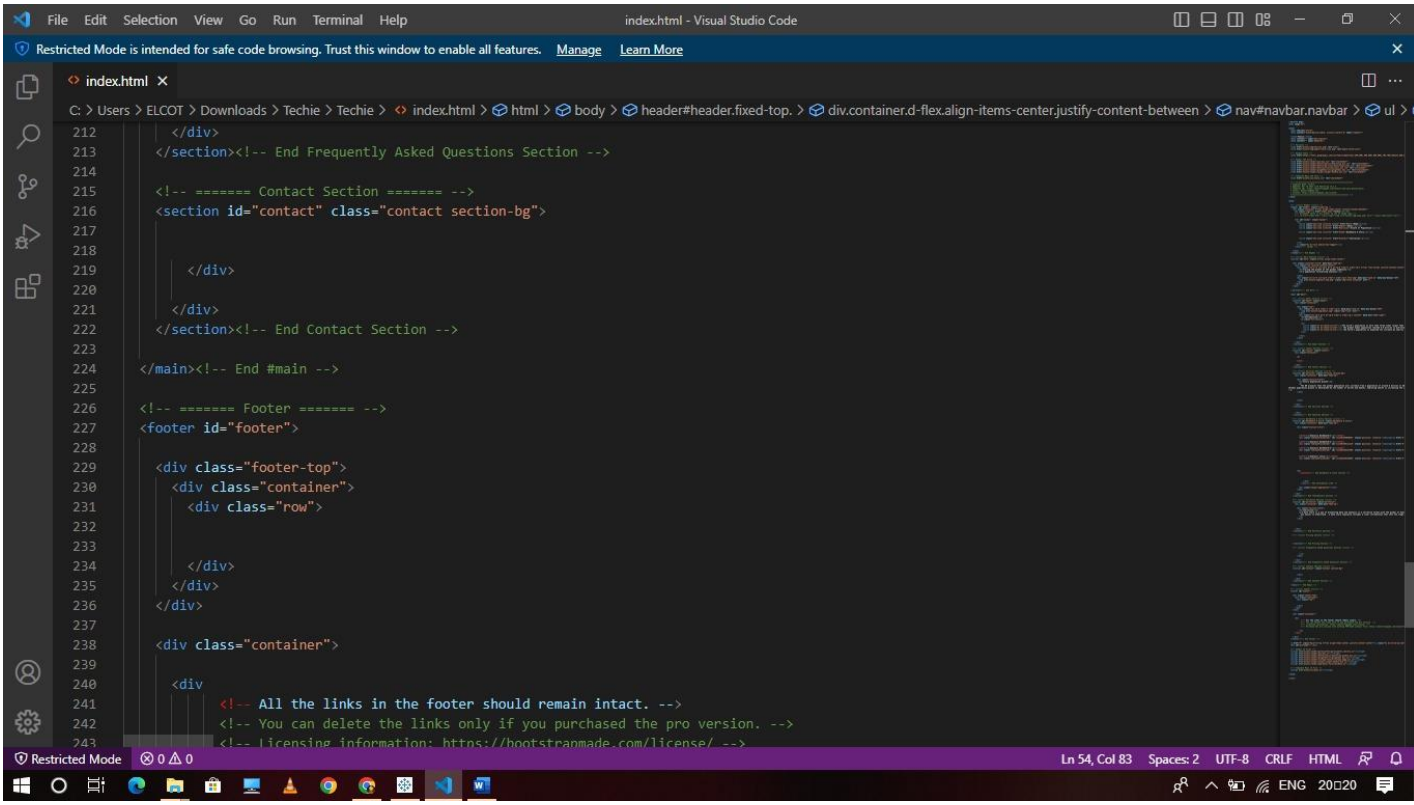
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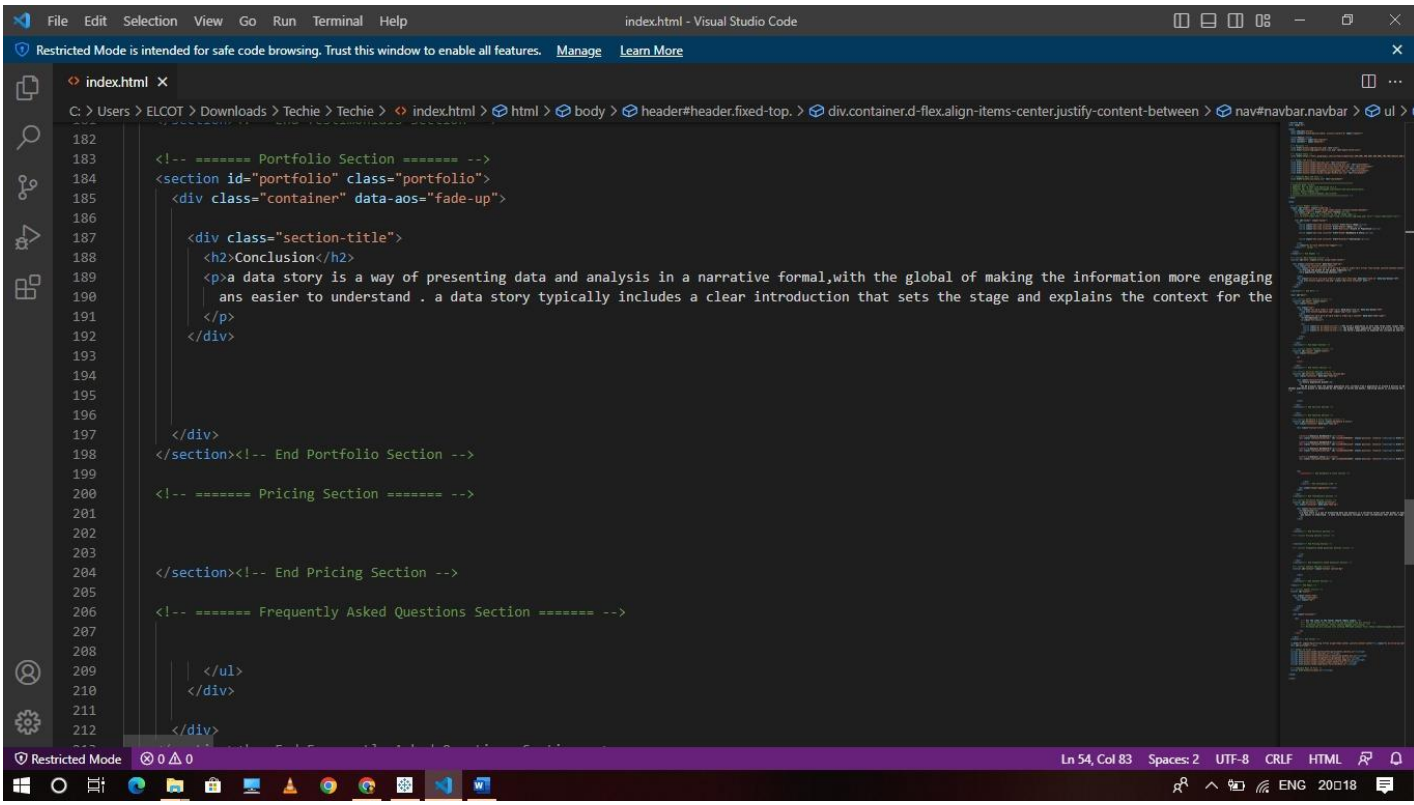
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<h2>Conclusion</h2>
a data story is a way of presenting data and analysis in a narrative formal,with the global of making the information more engaging
ans easier to understand . a data story typically includes a clear introduction that sets the stage and explains the context for the

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<!-- ======= Pricing Section ======= -->
</section><!-- End Pricing Section -->
<!-- ======= Frequently Asked Questions Section ======= -->

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