Final Deliverable

Date	11 November 2022
Project Name	Estimate the Crop Yield Using Data Analytics
Team ID	PNT2022TMID07696

Web Page Codings:

Index code:

Dashboard Page code:

```html
1   <!DOCTYPE html>
2   <html>
3       <body>
4           <h1 style="text-align: center; color: green; background-color: yellowgreen; border-radius: 100px; border-radius: 70px;">DASHBOARD</h1>
5
6
7           <li><a href="index.html">HOME PAGE</a></li><br>
8
9
10
11
12       <p>
13           <style>
14               fieldset{
15                   background-image: url(https://blog.ucsusa.org/wp-content/uploads/2016/07/22559646902_07fd41ab0c_z.jpg);
16                   background: cover;
17
18
19               }
20           </style>
21           <fieldset style="background-color: grey; border-radius: 50px;">
22
23
24           <form style="text-align: center;">
25
26               <p><strong><i>
27
28
29               </i></strong></p>
30               <br><br><br><embed src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2Fsrini.1%2FDashboard%2Bcreation.crop_production.xlsx&action=view&mode=dashboard&subView=model000001844653eabd_00000001" width="600" height="500"><br><br><br><br>
31
32
33               <a href ="https://colab.research.google.com/drive/17uwPAeCBP51rXo_F6r-TLgiI0VUuLKlj#scrollTo=cir3o_PrvfyX">
```

```html
24          <form style="text-align: center;">
25
26              <p><strong><i>
27
28
29              </i></strong></p>
30              <br><br><br><embed src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2Fsrini.1%2FDashboard%2Bcreation.crop_production.xlsx&action=view&mode=dashboard&subView=model000001844653eabd_00000001" width="600" height="500"><br><br><br><br>
31
32
33              <a href ="https://colab.research.google.com/drive/17uwPAeCBP51rXo_F6r-TLgiI0VUuLKlj#scrollTo=cir3o_PrvfyX">
34                  <button style="background-color: olivedrab; border-radius: 30px; " type="google colab">google colab</button><p style="color: white">CLICK HERE TO VIEW CODE</p></a></p>
35
36              <a href="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2Fsrini.1%2FDashboard%2Bcreation.crop_production.xlsx&action=view&mode=dashboard&subView=model000001844653eabd_00000001">
37                  <button style="background-color: olivedrab; border-radius: 30px;" type="ibm cognos analytics with watson"> IBM cognos analytics with watson</button><p style = "color: white">CLICK HERE TO VIEW DASHBOARD IN COGNOS</p></a>
38
39
40
41              </form>
42          </fieldset>
43
44       </p>
45
46       </body>
47   </html>
```

Exploration Page code:


```html
<!DOCTYPE html>
<html>
    <body>
        <h1 style="text-align: center; color: black; background-color: green; border-radius: 100px; border-radius: 70px;">EXPLORATION</h1>


        <li><a href="index.html">HOME PAGE</a></li><br>




        <p>
            <style>
                fieldset{
                    background-image: url(https://blog.ucsusa.org/wp-content/uploads/2016/07/22559646902_07fd41ab0c_z.jpg);
                    background: cover;

                }
            </style>
            <fieldset style="background-color: grey; border-radius: 50px;">


                <form style="text-align: center;">

                    <p><strong><i>


                    </i></strong></p>
                    <br><br><br><embed src="https://us1.ca.analytics.ibm.com/
                    bi/?perspective=explore&pathRef=.my_folders%2FNew%2Bexploration&subView=model000001846d325aeb_00000000" width="600"
                    height="500"><br><br><br><br>


                        <a href ="https://colab.research.google.com/drive/1ZHxYuFTYZErD3xOmbV0f_8oQmEyy85Gh">
```



```html
                <form style="text-align: center;">

                    <p><strong><i>


                    </i></strong></p>
                    <br><br><br><embed src="https://us1.ca.analytics.ibm.com/
                    bi/?perspective=explore&pathRef=.my_folders%2FNew%2Bexploration&subView=model000001846d325aeb_00000000" width="600"
                    height="500"><br><br><br><br>


                        <a href ="https://colab.research.google.com/drive/1ZHxYuFTYZErD3xOmbV0f_8oQmEyy85Gh">
                            <button style="background-color: olivedrab; border-radius: 30px; " type="google colab">google colab</button><p style
                            =" color: white">CLICK HERE TO VIEW CODE</p></a></p>

                        <a href="https://us1.ca.analytics.ibm.com/
                        bi/?perspective=explore&pathRef=.my_folders%2FNew%2Bexploration&subView=model000001846d325aeb_00000000">
                            <button style="background-color: olivedrab; border-radius: 30px;" type="ibm cognos analytics with watson"> IBM
                            cognos analytics with watson</button><p style=" color: white">CLICK HERE TO VIEW EXPLORATION IN COGNOS</p></a>



                </form>
            </fieldset>

        </p>

    </body>
</html>
```

Report Page code:

Story Page code:


```html
<!DOCTYPE html>
<html>
    <body>
        <h1 style="text-align: center; color: black; background-color: green; border-radius: 100px; border-radius: 70px;">STORY</h1>


        <li><a href="index.html">HOME PAGE</a></li><br>



        <p>
            <style>
                fieldset{
                    background-image: url(https://blog.ucsusa.org/wp-content/uploads/2016/07/22559646902_07fd41ab0c_z.jpg);
                    background: cover;


                }
            </style>
            <fieldset style="background-color: grey; border-radius: 50px;">


                <form style="text-align: center;">

                    <p><strong><i>


                    </i></strong></p>
                    <br><br><br><embed src="https://us1.ca.analytics.ibm.com/
                    bi/?perspective=story&pathRef=.my_folders%2FNew%2Bstory&action=view&sceneId=model000001846eaf8e42_00000001&sceneTime=5000
                    " width="600" height="500"><br><br><br><br>
```



```html
                    <p><strong><i>


                    </i></strong></p>
                    <br><br><br><embed src="https://us1.ca.analytics.ibm.com/
                    bi/?perspective=story&pathRef=.my_folders%2FNew%2Bstory&action=view&sceneId=model000001846eaf8e42_00000001&sceneTime=5000
                    " width="600" height="500"><br><br><br><br>




                    <a href="https://us1.ca.analytics.ibm.com/bi/?perspective=story&pathRef=.my_folders%2FNew%2Bstory&action=view&sceneId=mo
                    del000001846eaf8e42_00000001&sceneTime=5000">
                        <button style="background-color: olivedrab; border-radius: 30px;" type="ibm cognos analytics with watson"> IBM
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                </form>
            </fieldset>

        </p>

    </body>
</html>
```

Abstract Page code:


```html
<!DOCTYPE html>
<html>
    <body>
        <h1 style="text-align: center; color: black">ESTIMATE THE CROP YIELD USING DATA ANALYTICS</h1>


        <li><a href="index.html">HOME PAGE</a></li><br>

        <h1 style="color: black">ABSTRACT:</h1>

        <p>Agriculture is important for human survival because it serves the basic need. A well-known  fact that  the  majority of
        population  (≥55%) in  India  is  into agriculture. Due to variations in  climatic conditions, there  exist bottlenecks for
        increasing the crop production in India. It has become challenging task to achieve desired  targets in Agri  based crop yield.
        Various factors  are to be considered which have direct  impact on  the production, productivity  of the crops.  Crop yield
        prediction is  one of  the important  factors  in agriculture practices.  Farmers  need  information regarding  crop  yield
        before  sowing seeds in their fields to achieve enhanced crop yield. The  use of technology in agriculture has increased in recent
        year and data analytics is one such trend that has penetrated into the agriculture field. The main challenge in using big data  in
        agriculture is  identification  of  effectiveness of  big  data  analytics.  Efforts  are going  on to  understand how  big data
        analytics can  agriculture productivity.  The  present  study  gives  insights  on  various  data  analytics methods  applied to
        crop  yield  prediction and  also  signifies  the important lacunae points' in the proposed area of research.</p><br>

        <h1 style="color: black">INTRODUCTION:</h1>


        <p>Agriculture forms  the basis for  food security and  hence it is  important. In India, majority  of the population i.e., above
        55% is dependent on agriculture as per the recent information. Agriculture is the field that enables the farmers to grow ideal
        crops in accordance with the environmental balance. In India, wheat and rice are the major grown crops along with sugarcane,
        potatoes, oil seeds etc. Farmers also grow non-food items like rubber, cotton, jute etc. More than 70% of the household in the
        rural area depend on agriculture. This domain provides employment to more than 60% of the total population and has a contribution
        to GDP also (about 17%) [1]. In the farm output, India ranks second considering the world wide scenario. This is the widest
        economic sector and has an important role regarding the framework of socio-economic fabric of India. Farming  depends  on  various
        factors  like  climate  and  economic  factors  like  temperature,  irrigation, cultivation, soil, rain fall, pesticide and
        fertilizers. Historical information regarding crop yield provides major input  for companies  engaged in  this domain. These
        companies  make use  of agriculture  products as  raw materials,  animal  feed,  paper  production  and  so  on.  The  estimation
        of  production  of  crop  helps  these companies in planning supply chain decision like production scheduling. The industries such
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        companies  make use  of agriculture  products as  raw materials,  animal  feed,  paper  production  and  so  on.  The  estimation
        of  production  of  crop  helps  these companies in planning supply chain decision like production scheduling. The industries such
        as fertilizers, seed, agrochemicals and agricultural machinery plan production and activities like marketing based on the estimates
        of crop yield [2]. Farmers experience was the only way for prediction of crop yield in the past days. Technology penetration into
        agriculture field has led to automation of the activities like yield estimation, crop health monitoring etc. Crop yield prediction
        has generated a lot interest in the research community and also for agriculture related organizations. Crop yield prediction helps
        the farmers in various ways by providing the record of previous crop yield. This is helpful to government in framing policies
        related to crops such as crop insurance policies, supply chain operation policies. Knowing what crops has been grown, and how much
        area of it had been shown historically, combined with the prices at which it could have been sold at the nearest market-place
        provides the income-growth profile of the farmer [3]. Agriculture sector is struggling to increase the productivity of crop in
        India. Monsoon rainfall is the main  source  of  water  for  more than  60  percent  of  the crops.  Smart  agriculture  driven
        by  Information Technology is the emerging trend in the research in this area in recent days. One of the areas being explored is
        the problem of yield prediction which is a major concern. Data mining techniques  are  under  evaluation  for estimation of crop production of the
        future years [4]. Data mining is the process in which the hidden patterns are discovered using analysis of large data sets. The
        data mining and data analytics techniques use artificial intelligence, statistics, machine learning and database system. In data
        mining, unsupervised and supervised methods are being used. In unsupervised learning, clusters are formed using large data sets and
        in supervised learning classification are done based on the data sets. In clustering technique, 'data points' are examined to group
        them into 'clusters' according to specific parameter. The data points in same cluster have less distance compared to  data points
        of different clusters.  The analysis of  the cluster divides  data into  well organized groups. The natural structure of the data
        is captured by these well-formed groups [3, 4].
         This survey focuses on various methods being used for  crop yield prediction.  The methods being used  are  Density  based
         clustering  techniques,  Multiple  Linear  regression,  Clustering  large  applications (CLARA), Petitioning around Medoids (PAM)
         and density based clustering algorithm called DBSCAN.</p>
```