

Index of Connectedness

by

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B.Tech, Sri Venkateswara University, 2011

M.Sc., University of Victoria, 2016

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Requirements for the Degree of

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University of Victoria

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ABSTRACT

The mental and physical health of young people significantly depends on their level of *connectedness* to their family, school and community. This document focuses on the visual representation of different indicators, identified by domain specialists in health-care, that affect the mental and physical health condition of children. Our goal is to represent them in the form of a visual chart which gives more immediate insight to community members (teachers, family members, youth-care representatives) to take corrective measures and improve the quality of living in affected communities. This project also presents an alternative, side-by side view of the data for two different communities so as to compare between the two. It also gives the option to the user to view the individual data of a child of particular community. Furthermore, a detailed description of the technology involved in this project's implementation is provided along with proposed extensions that can be added to make this platform accessible and usable to large number of users in future.

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DEDICATION

I dedicate this project report to my Professor Dr.Yvonne Coady who always supports and encourages me.

Chapter 1

Introduction

The future is always in the hands of young people. Healthy kids grow into strong adults and assist in raising healthy kids, a continuous cycle of good health and life which leads to an improved community health in the long term. The mental and physical health condition of children depends on various factors such as their connection to family, community, school and peers. The study of various indices help us in understanding and improving the mental health condition of youth, as well as reducing risks like self-harming behaviours, and frequent suicidal ideas. The Child and Youth Health Network group has conducted a survey on children and collected sample data to evaluate these factors. This project involves exhibiting the graphical representation of the data in the form of a radar chart. Survey data related to different communities is presented to give an insight about the community to the user. It can help the user in understanding the community they are living in and evaluating the possible effects of raising their children in such a community.

The project provides an opportunity to view the graphical data related to an individual and a community. One of the features available in the project is to compare different communities. The user is provided with an option to choose more than one community and view the data related to the selected option. An option to view an individual's data in a particular community is taken into consideration. The project has an option to compare the historic results of a particular community with the latest data. This way of representing the data in a graphical chart helps the community members, and government workers, to focus and work towards the improvement of a particular child or a community. This leads to a balanced society with well-adjusted children who in turn enhance the well-being of future children. Ideally, connectedness begins in early childhood and continues throughout their span of life.

The Child and Youth Health Network’s first 5-year campaign is scheduled to launch in 2017 and we intend to use an “Index of Connectedness” as a strategy to [1]:

- Engage in knowledge mobilization about the importance of connectedness for the mental health of young people.
- Engage the entire community in increasing connectedness for young people as a way to improve their mental health and community well-being in the long-term and
- Build additional partnerships within the network.

1.1 Structure of the Project

This section provides a map of the report and the content from each chapter is summarized as follows:

Chapter 1 introduces the various factors that affect the mental health condition of young children and describes why it is useful to raise children in a connected community. This chapter also describes the front-end development of the project and gives an overview of how this data is useful for a user visiting this web page.

Chapter 2 explains the core technical implementation details of this project along with the background knowledge about the various factors that affect the health condition of a young child.

Chapter 3 provides the screen-shots of implementation of various functionalities handled by this website to give a clear understanding to the reader.

Chapter 4 draws a full picture of the project, starting from presenting the raw data into a graph, to collecting the user provided survey data. This chapter also describes the various technologies that have been used as part of this project.

Chapter 5 includes the evaluation of the present view of “Index of connectedness” website and also suggests the possible enhancements that can be done to this project to make it available to large population.

Chapter 6 concludes the purpose and solution of the project.

Chapter 2

Background and Related Work

This chapter begins by defining the visualization and its use to the users in general. It gives information about the Child and Youth Health Networks' five year campaign and describes the various connectedness factors that are necessary for raising the children in a safe and sophisticated society. The technical details like various indicators that are used to represent the Individual/Group data in the form of a Radar chart and different options that are available to view the data are discussed in detail in this section.

2.1 Visualization

Card, Mackinlay, and Shneiderman define visualization as “the use of computer-supported, interactive, visual representations of data to amplify cognition” [9]. Visualization was historically categorized into two major areas: “scientific visualization” and “information visualization”. As stated by Tory and Moller, Visualization taxonomies can serve two major purposes [12]:

- 1. Guide users.** People outside the visualization community may have trouble finding conceptual elements if they are not categorized in a meaningful way. By visual representation of data, people have better understanding of it.
- 2. Guide Research.** Researchers need to know where their research fits into a larger context and find people doing similar work. Also, research can sometimes become more focused or progress more rapidly when we increase our appreciation and comprehension for the field as a whole.

In this context, a more meaningful organization of current research may help us

identify areas for future investigation. We believe this will motivate researchers to think of visualization in a different way and therefore generate novel research ideas and discussion. Information visualization is extending from research laboratories to a growing number of commercial products (such as those from Spotfire, Inxight, and HumanIT), additions to statistical packages (SPSS/SigmaPlot, SAS/GRAPH, and Data Desk) and commercial development environments (e.g.ILOG JViews). The general public is being exposed to visualizations with SmartMoney financial maps [10]. Citizens can find health information with interactive maps [6] and view real-time highway traffic information. To make these visualization tools accessible by diverse users regardless of their technical knowledge and personal disabilities is a challenge for designers but is of a great use to the public[11].

2.2 Connectedness

It took 2 years of deep inquiry to realize that, to improve the mental and physical health conditions of the young children, we need to mainly focus on their level of connectedness to family, school and community.

The Child and Youth Health Network team has conducted a survey in different communities and data related to the level of connectedness of the children to Family, School, Peer, Community and culture is collected to show that it is directly linked to improve the mental health of youth, as well as to reduce risk, including less self-harming behaviours, and less frequent suicidal ideas. Connectedness and a sense of belonging is also linked to increased likelihood of high school graduation and post-secondary planning for youth. Ideally, connectedness begins in early childhood and continues throughout one's lifespan.

2.3 Index of Connectedness

Index of Connectedness is a tool used to represent the data related to various indicators on a Radar chart and give an insight to the community members about the mental and physical health conditions of children of a particular community and work towards the better living conditions for children. Index of Connectedness tool provides both the Individual and Group data related to different communities. This tool is also helpful in comparing the data between two communities by representing the Radar chart in a side-by-side fashion. It also makes comparisons for the different

dates of a community to view the level of growth or decline between the past and present situations. The Child and Youth Health Networks' first 5-year campaign is scheduled to launch in 2017 and we intend to use an "Index of Connectedness" as a strategy to:

- Engage in knowledge mobilization about the importance of connectedness for the mental health of young people
- Engage the entire community in increasing connectedness for young people as a way to improve their mental health and community well-being in the long-term and
- Build additional partnerships within the network.

2.4 Details of the Project

Survey data of various indicators is stored in a Comma Separated Value (CSV) file. A website is created for "Index of connectedness" which gives a graphical representation of data stored in CSV file. This information can be used to help a user, such as a parent, to understand the type of community his/her child is being raised.

A welcome page is created, where the user is given with two choices.

1. To represent the individual child data.
2. To represent the average data of children of a particular community.

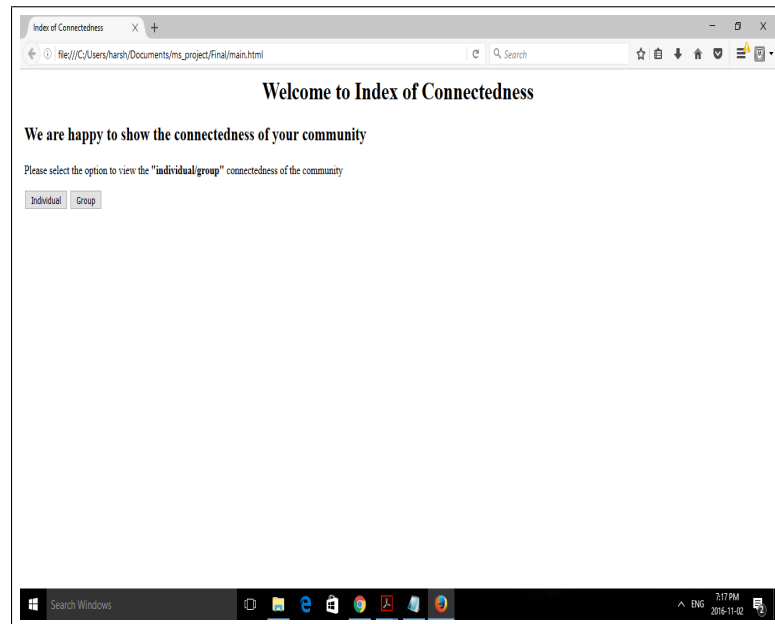


Figure 2.1: Welcome Page

2.4.1 Individual Data Representation

If the user chooses this option, it provides a graphical representation of level of connectedness of a particular child. This information helps community members to understand the health condition of a child in a community through developing/changing environments and factors that may be related to depression, and protects children from the risk of self-harming behaviours.

The user is asked to provide the First and Last name of the child to view the data. The individual data of children is stored in a CSV file, from which the graphical representation can be shown. A sample of data stored in CSV file is as shown in Table 2.1.

First Name	Last Name	Indicator	Community Name	Roll No	Full Description of Indicator	Value
SAM	John	Family Connect- edness1	McKenzie	1	In my home there is a parent or another adult who listens to me when I have something to say	0.21
SAM	John	Family Connect- edness2	McKenzie	1	How much do you feel that people in your family understand you?	0.22
SAM	John	Family Connect- edness3	McKenzie	1	How much do you feel that you and your family have fun together?	0.23
Peter	Kennedy	Family Connect- edness1	McKenzie	2	In my home there is a parent or another adult who listens to me when I have something to say	0.54
Peter	Kennedy	Family Connect- edness2	McKenzie	2	How much do you feel that people in your family understand you?	0.22
Peter	Kennedy	Family Connect- edness3	McKenzie	2	How much do you feel that you and your family have fun together?	0.98

Table 2.1: Table showing the sample individual data stored in CSV file

As specified in the Table, the CSV file consists of 7 columns

1. First Name: holds the First Names of children.
2. Last Name: holds the Last Names of children.
3. Indicator: explains whether it is Family/School/Peer/Community/Cultural Connectedness.
4. Community Name: refers to the community name which we are interested to view the data.
5. Roll No: key factor used to distinguish between children with same First and Last Names.
6. Full Description of Indicator: refers to the complete question that indicates a particular connectedness.
7. Value: In the survey, questions are posed to a group of children in a community and an average value for that community is collected. So, each indicator representing a related question holds an average value.

Graphical representation of individual data is as shown in Figure 2.2:

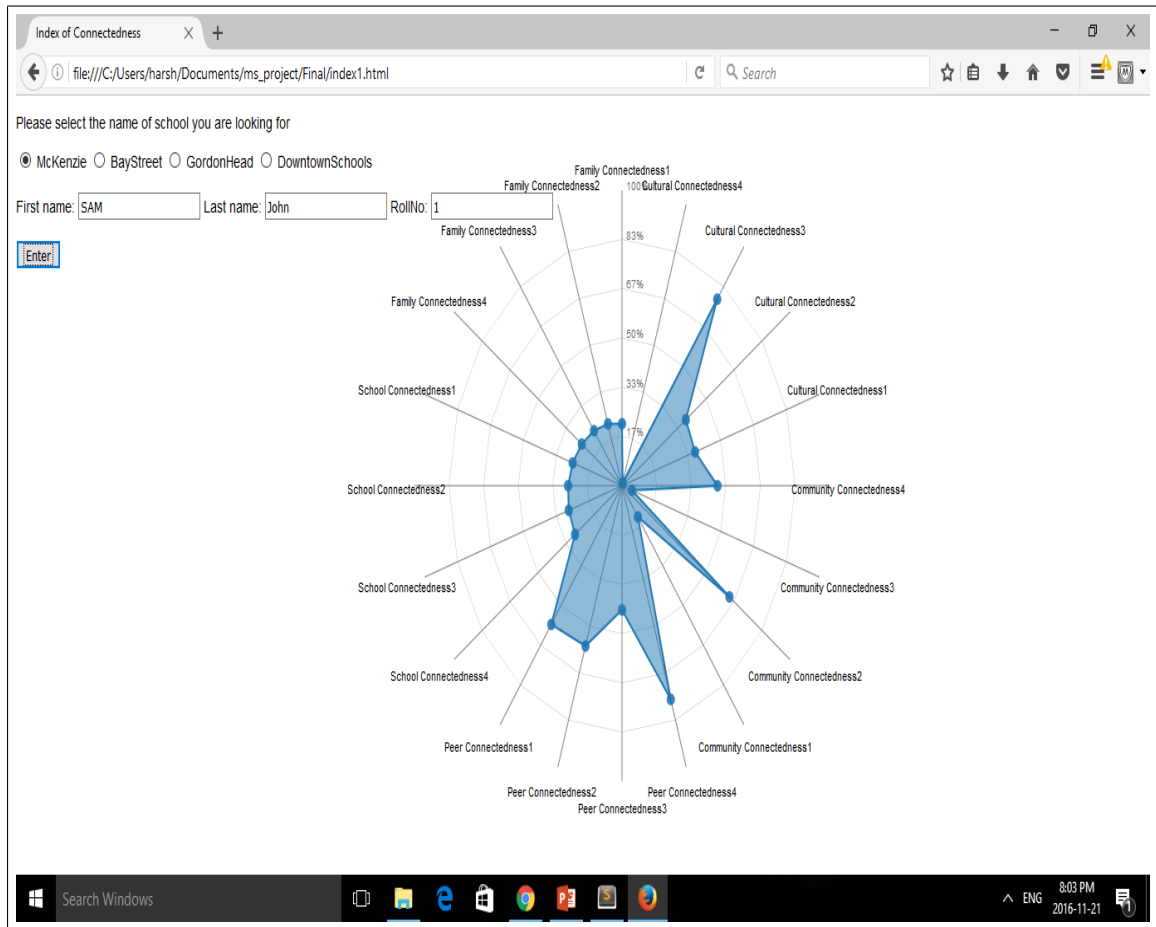


Figure 2.2: Radar chart representing the individual data of a particular community

2.4.2 Group Data Representation

When user selects the option of Group data, the graph related to an average value of a particular community is shown. The user has the option of selecting more than one community to view the connectedness of different communities and make an estimation/comparison between them. Each community is represented with a different color to make it comprehensible for the user. A screen-shot for graphical representation of multiple communities is as shown in Figure 2.3.

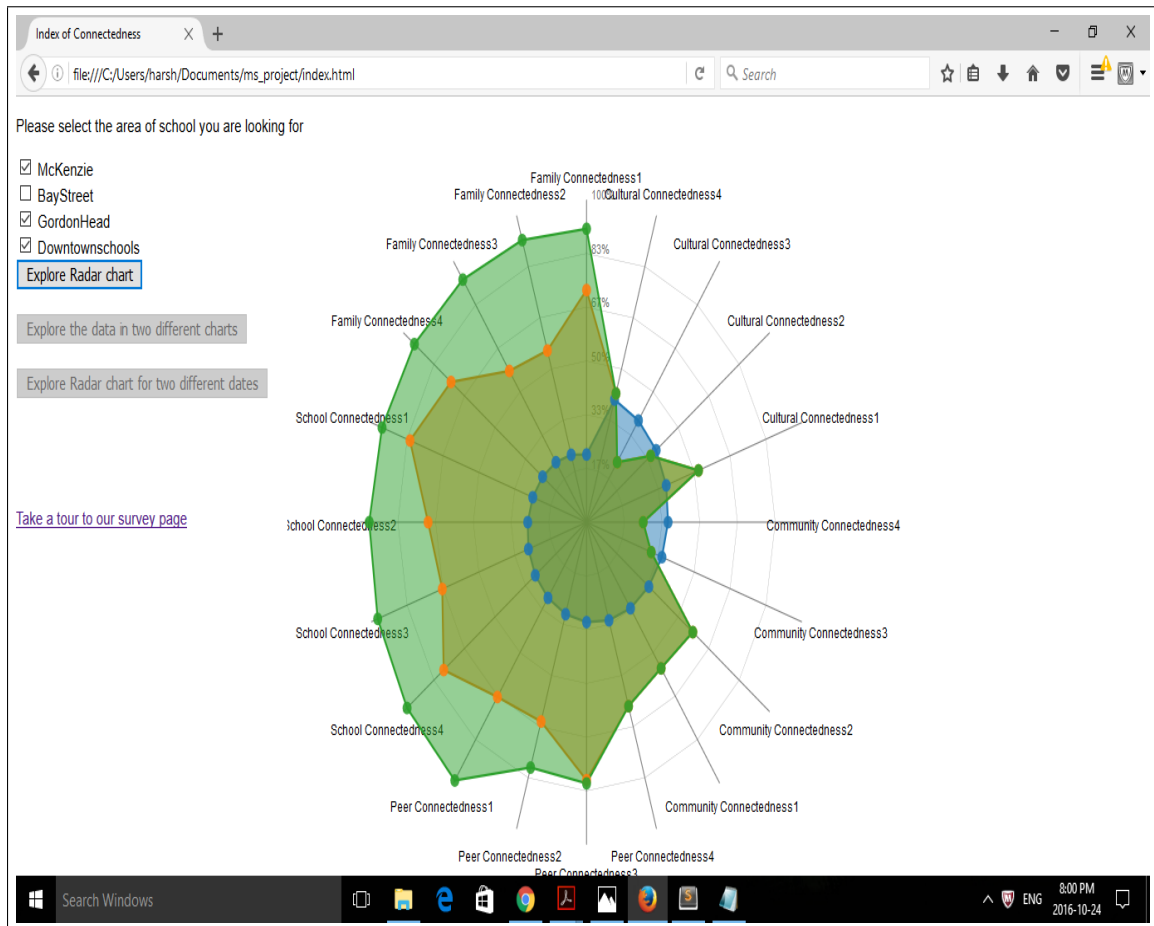


Figure 2.3: Radar chart for multiple communities

For better user experience, the option to view the graphs in a side-by-side fashion is provided to the user.

2.5 Details of Radar chart

A Radar chart is a graphical method of displaying multivariate data in the form of a two-dimensional chart of three or more quantitative variables represented on axes starting from the same point [8]. There are 5 indicators namely Family, School, Peer, Community, Culture that are used to measure the mental and physical health condition of the children. As part of the survey, some questions related to each indicator are questioned to the children and the results are recorded.

1. Questions related to Family Connectedness:

- (a) In my home there is a parent or another adult who listens to me when I have something to say
- (b) How much do you feel that people in your family understand you?
- (c) How much do you feel that you and your family have fun together?
- (d) If you were having a serious problem is there an adult in your family that you would feel okay talking to?

2. Questions related to School Connectedness:

- (a) At my school there is a teacher or another adult who really cares about me?
- (b) How many adults at your school care about you?
- (c) I feel like I am part of this school.
- (d) Number of schools a child/youth has attended in the past year

3. Questions related to Peer Connectedness:

- (a) Are there safe places in your neighbourhood/community where you feel comfortable to hang out with friends like playgrounds/parks/ or community centres?
- (b) When I am with other kids my age I feel I belong
- (c) I have at least one really good friend I can talk to when something is bothering me
- (d) Ability to get along with peers

4. Questions related to Community Connectedness:

- (a) In my neighbourhood/community (not from your school or family) there is an adult who really cares about me
- (b) If you were having a serious problem is there an adult who is NOT in your family that you would feel okay talking to?
- (c) I feel valued by adults in my community

- (d) How much do you agree or disagree with the following statement about your neighbourhood? I know my neighbours

5. Questions related to Cultural Connectedness:

- (a) Thinking about the ethnic or cultural group that you most identify with how much do you agree or disagree with the following statement? I understand pretty well what my ethnic group membership means to me
- (b) I have spent time finding out more about my culture such as its history traditions and customs
- (c) I have talked to other people in order to learn more about my culture
- (d) I feel a strong connection to my ancestors

The questions related to different indicators will give an overview of how the child is feeling/living. This helps many researchers and community helpers to concentrate on improving chosen areas and help the child to grow in a good community. As this is an ongoing project, the estimation of Child and Youth Health Network team is to analyse the real data over the past few years and come to an estimation for the level of good and bad indicators. The collected data is classified accordingly to understand the level of connectedness of a community. The data related to these indicators is saved in a CSV file as shown in Table 2.2.

Community	Indicator	Full Description of Indicator	value	Date
McKenzie	Family Connectedness1	In my home there is a parent or another adult who listens to me when I have something to say	0.21	06/17/2016
McKenzie	Family Connectedness2	How much do you feel that people in your family understand you?	0.56	06/17/2016
McKenzie	Family Connectedness3	How much do you feel that you and your family have fun together?	0.73	06/17/2016
McKenzie	Family Connectedness4	If you were having a serious problem is there an adult in your family that you would feel okay talking to?	0.54	06/17/2016

Table 2.2: Table showing the sample Group Data stored in CSV file

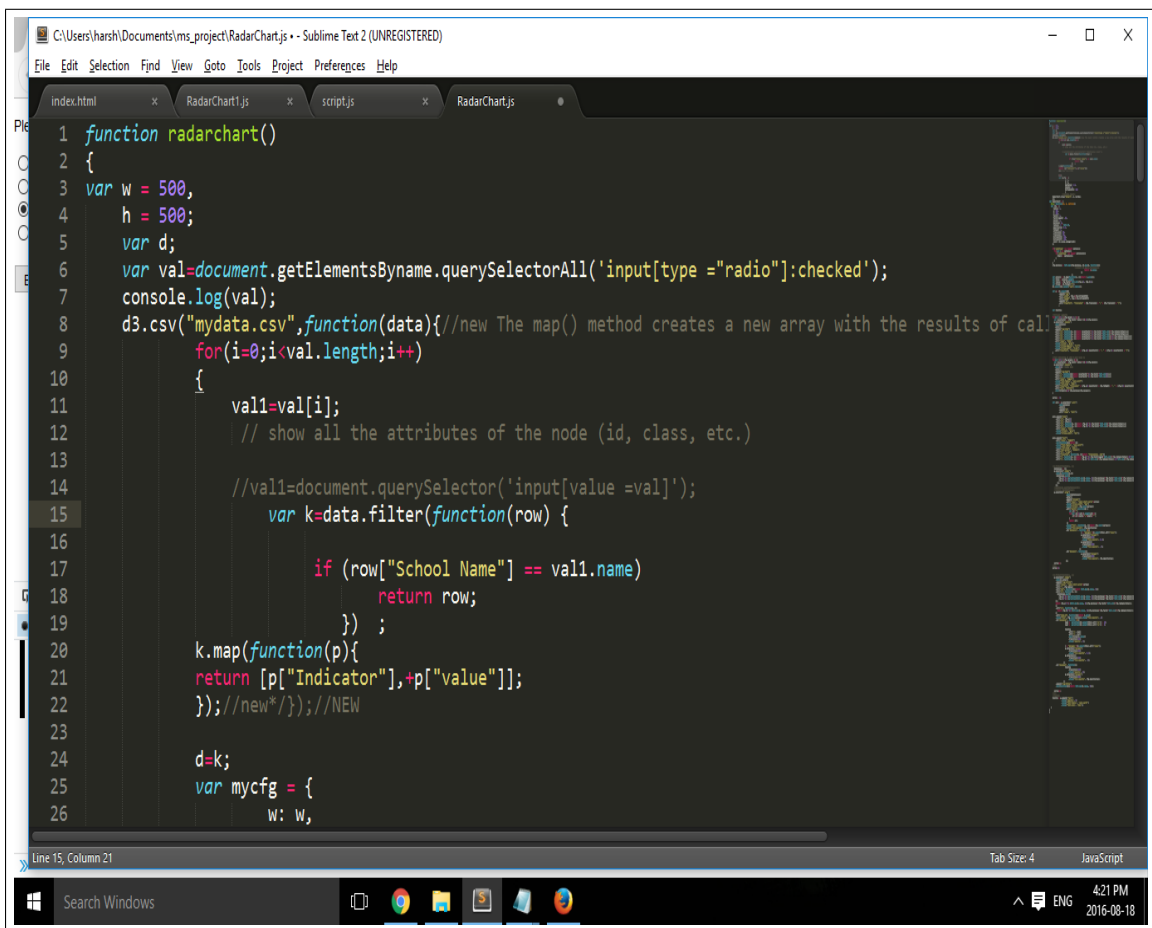
As mentioned in the above table, the CSV file consists of 5 columns

1. Community-refers to the name of community in which we are interested to view the data.
2. Indicator-explains whether it is Family/School/Peer/Community/Cultural Connectedness.
3. Full Description of Indicator-refers to the question that belong to a particular indicator.
4. Value-In the survey, questions are posed to a group of children in a community and an average value for that community is collected. So, each indicator representing a related question has an average value.
5. Date-data associated with different dates of same community.

All the above mentioned columns are reflected in our Radar chart.

To represent this data on Radar chart, we have divided it into 20 axes, each representing the different questions related to five indicators. The data that is represented on the Radar chart is taken upon a scale of 100. When you click on the tooltip of each axis, it represents the full description of indicator and also gives the average value of the indicator.

A link to user survey page is also provided where feedback from user is collected, related to the website, to help the website owners in understanding how they could improve it to have better user experience. The user feedback data is collected and saved in a text file on submission of the data. Sample code to extract the data from CSV file is shown in Figure 2.4.



```

1 function radarchart()
2 {
3   var w = 500,
4       h = 500;
5   var d;
6   var val=document.getElementsByName.querySelectorAll('input[type = "radio"]:checked');
7   console.log(val);
8   d3.csv("mydata.csv",function(data){//new The map() method creates a new array with the results of cal
9     for(i=0;i<val.length;i++)
10      {
11        val1=val[i];
12        // show all the attributes of the node (id, class, etc.)
13
14        //val1=document.querySelector('input[value =val]');
15        var k=data.filter(function(row) {
16
17          if (row["School Name"] == val1.name)
18            return row;
19          });
20        k.map(function(p){
21          return [p["Indicator"],+p["value"]];
22        });//new*/});//NEW
23
24        d=k;
25        var mycfg = {
26          W: w,

```

Figure 2.4: Sample Code to explore Radar chart for multiple communities

2.5.1 Summary

This chapter provides the background information necessary to understand this project. The next chapter is an overview of the implementation details of our Connectedness Visualization tool.

Chapter 3

Implementation Details

This chapter gives the clear understanding of the usage of “Index of Connectedness” website from a point of view of the user.

3.1 Welcome Page

The home page of the “Index of Connectedness” website is a welcome page. In this page, the user is provided with two options.

1. To view the individual data of the children.
2. To view the group data related to a community or group of communities.

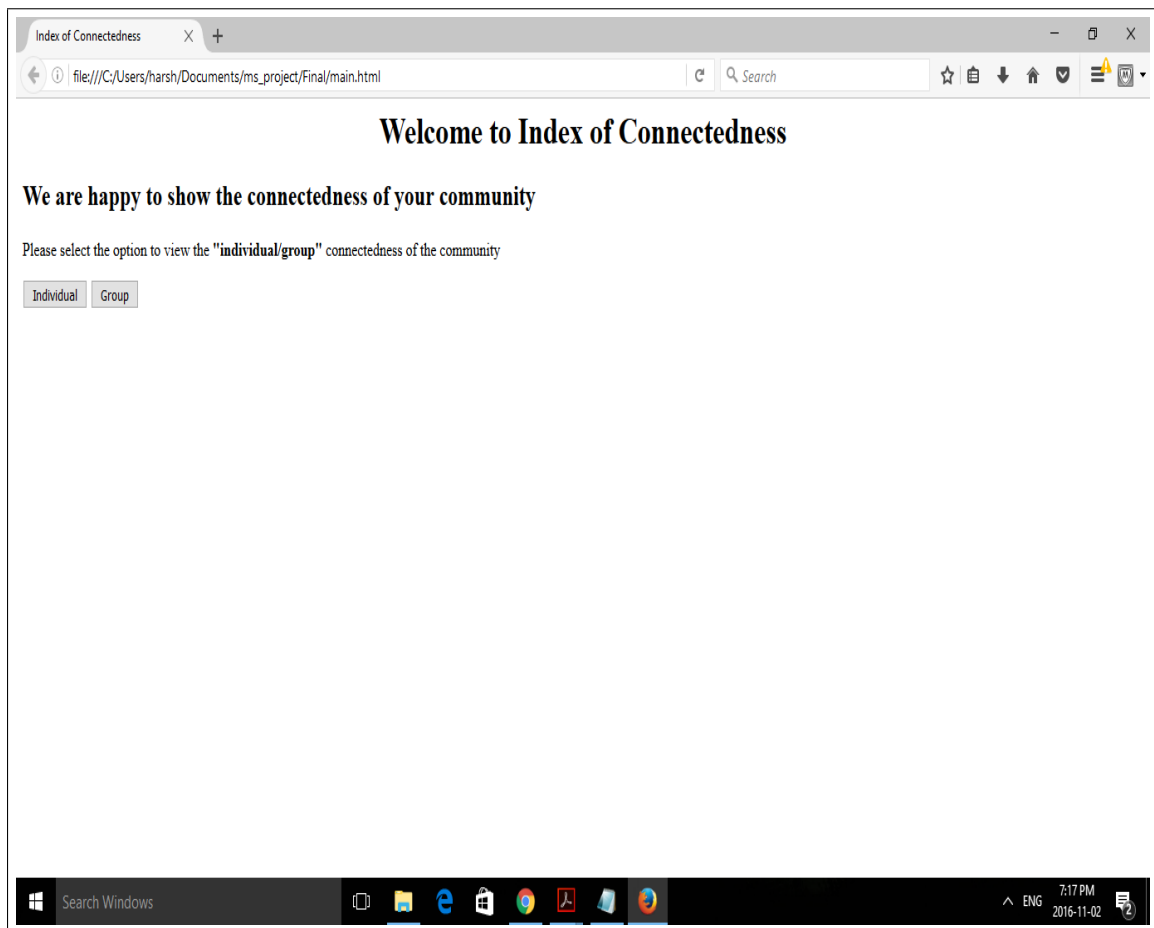


Figure 3.1: Welcome Page

3.2 Details of Individual Data

When the user chooses the “Individual” data option, the user is suggested to choose the community name of the child he/she is interested in.

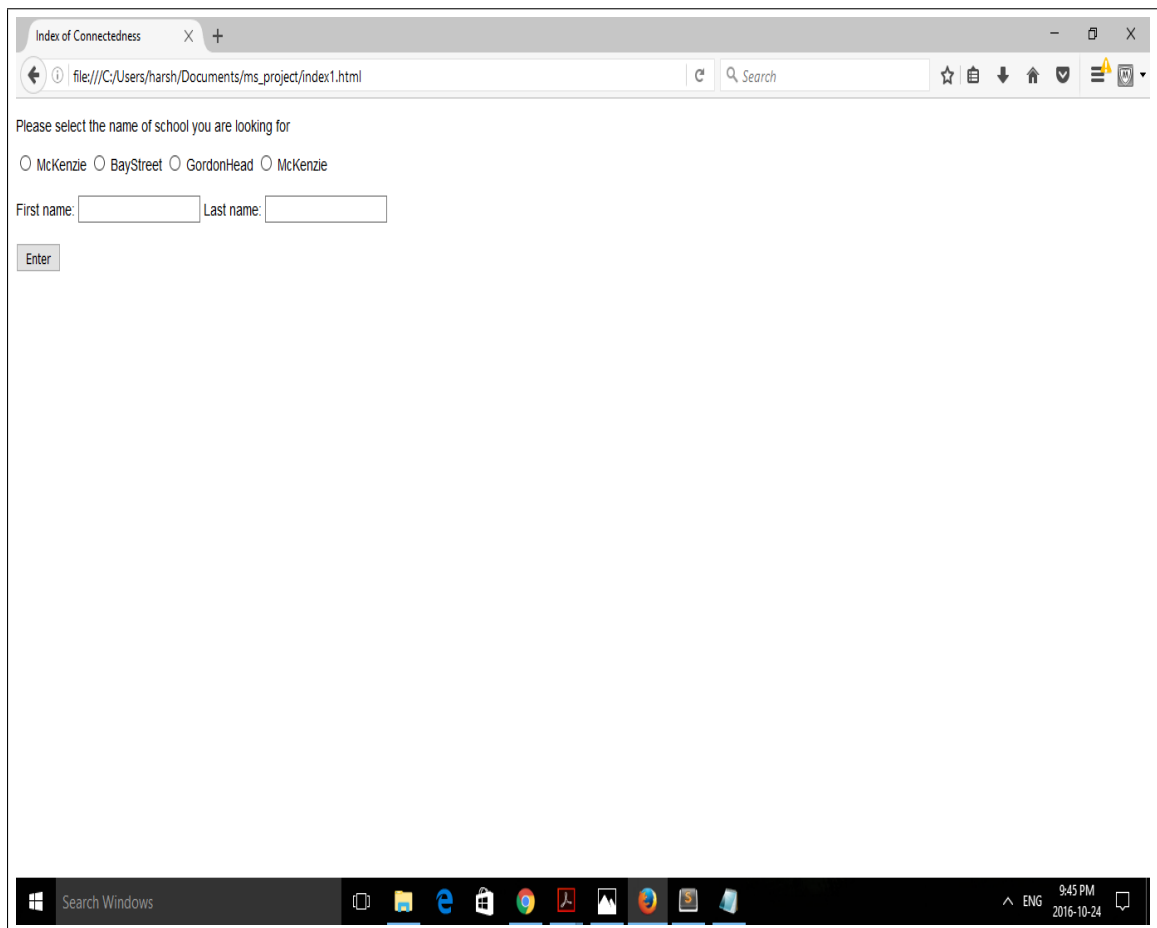


Figure 3.2: Overview of Individual Data Webpage

This web page throws an error if the community is not selected.

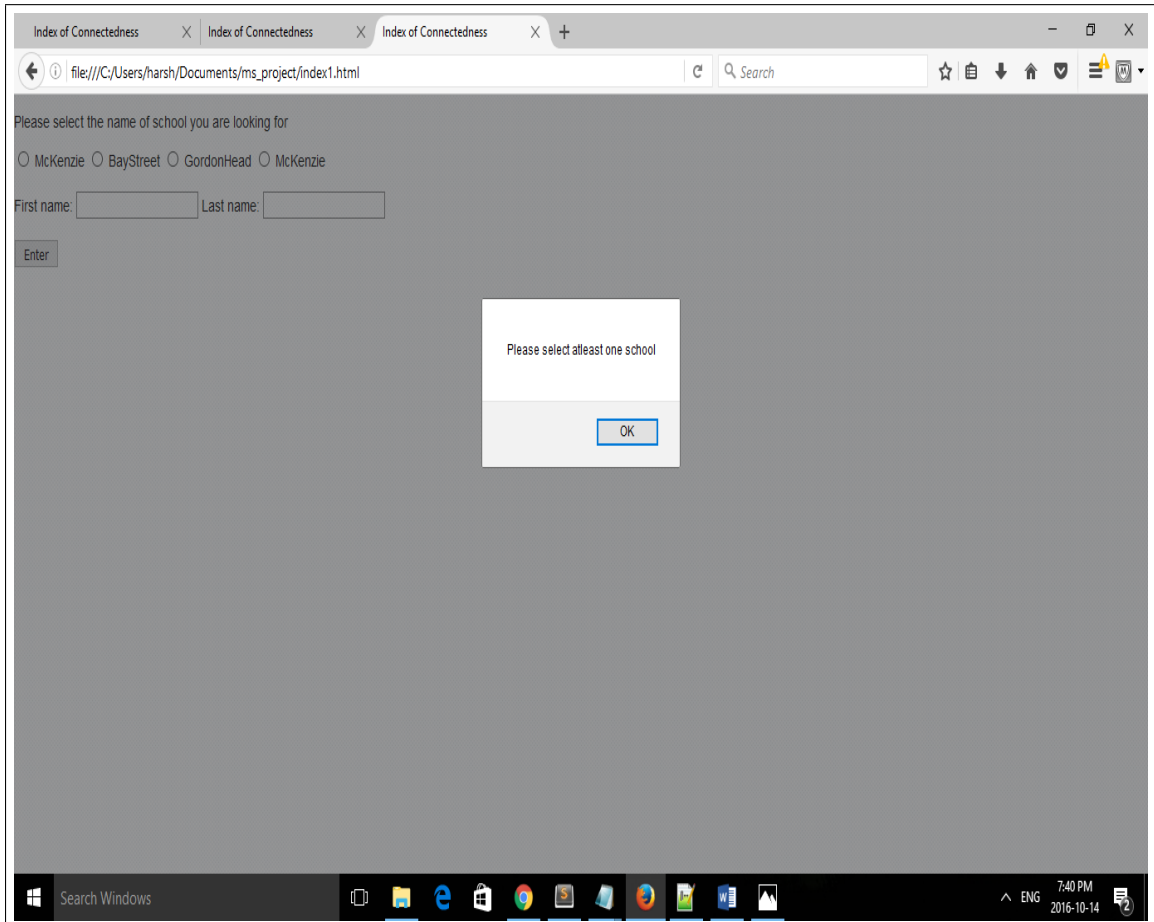


Figure 3.3: Figure recommending the user to select at least one community

After selecting the community, the First and Last name of child should be entered to view their data.

The Radar Chart of an individual of a particular community is as shown below:

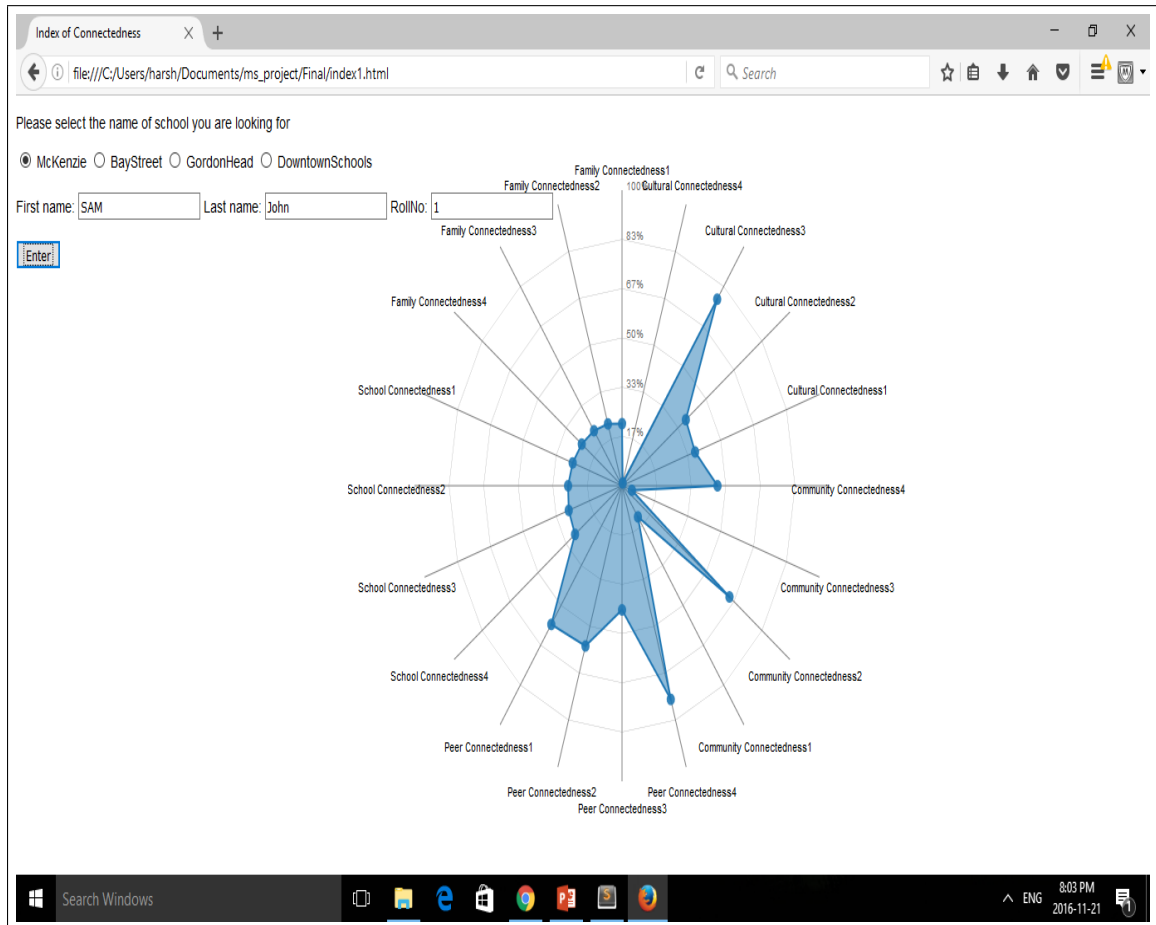


Figure 3.4: Figure showing the Radar chart of an individual data

3.3 Details of Group Data

If the user chooses the option of Group data, they must select at least one community to view the data or else an error message is displayed on the web page. If the user

has selected to view and compare the results of two communities in an overlapping fashion, then it is as shown below:

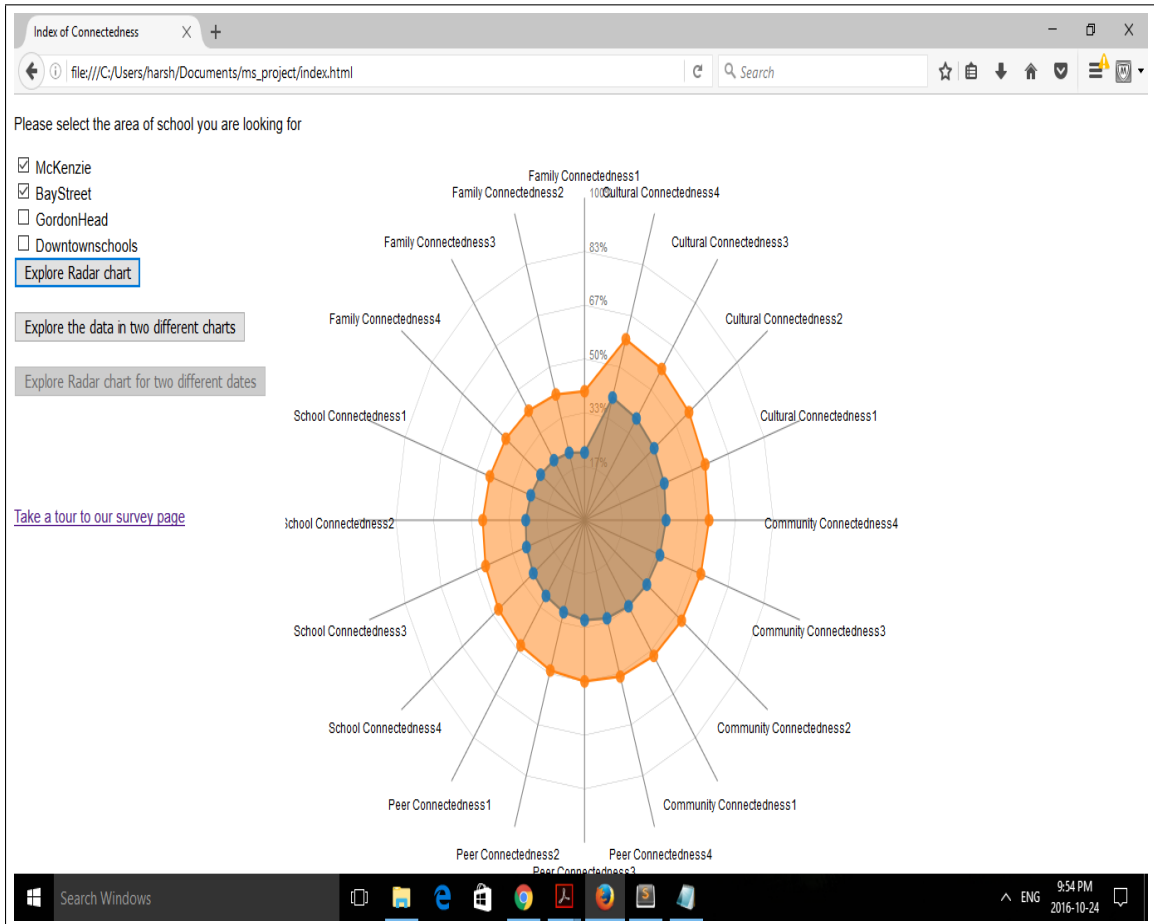


Figure 3.5: Figure showing the overlapping data of different communities

The user is also provided with an option to view the data in side-by-side manner to compare the results of two selected communities.

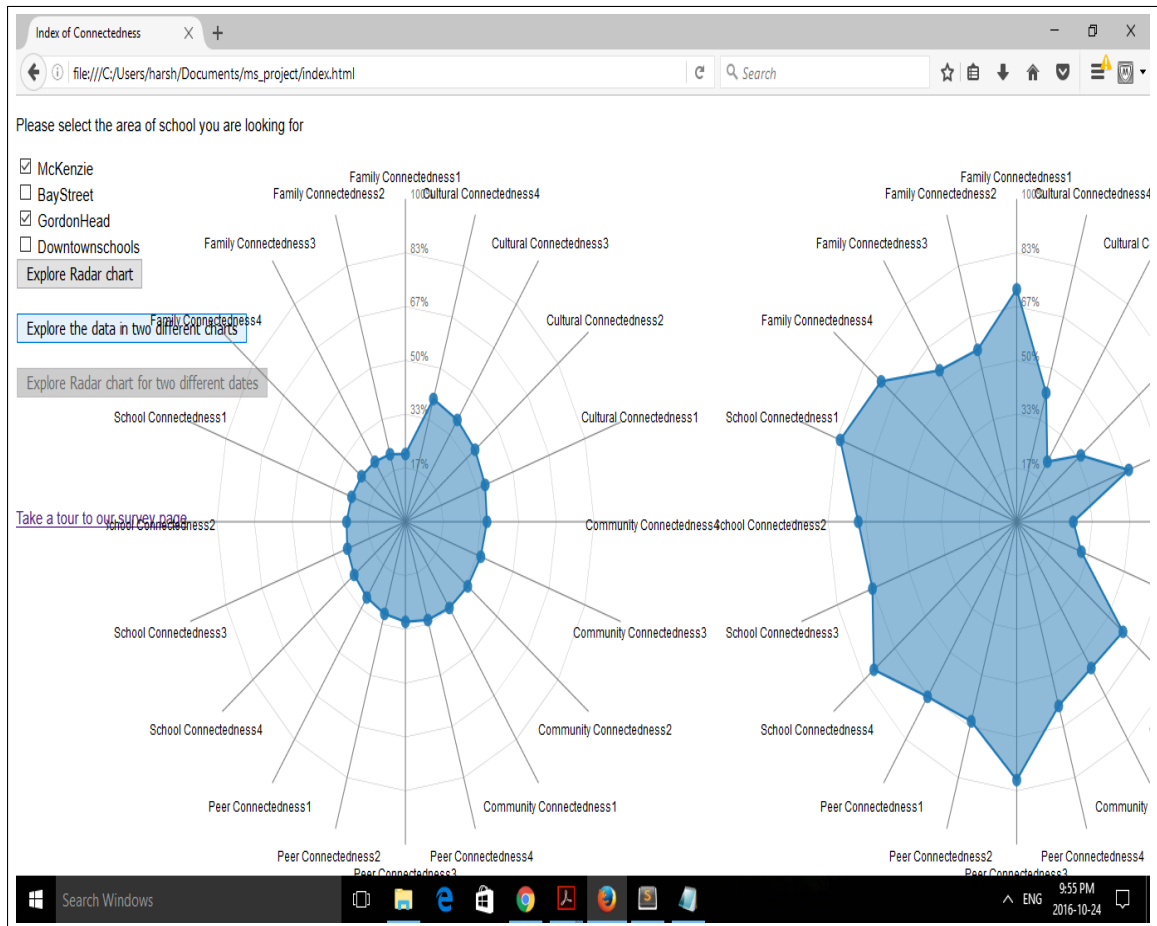


Figure 3.6: Figure showing the side-by-side view of data of two communities

3.4 Comparison of Historic and Present Data

The user clicks on the “Explore Radar chart for two different dates” button to view the Radar chart for the past and present dates. The user selects a community and the dates for which the data has to be presented. The data is selected in the respective fields on the web page.

The screenshot shows a web browser window with the title "Index of Connectedness". The address bar contains the file path "file:///C:/Users/harsh/Documents/ms_project/index.html". The page content includes a heading "Please select the area of school you are looking for" followed by a list of checkboxes: "McKenzie" (checked), "BayStreet", "GordonHead", and "Downtownschools". Below the list is a button labeled "Explore Radar chart". A second button, "Explore the data in two different charts", is also present. A third button, "Explore Radar chart for two different dates", is highlighted with a blue border. Below this, the text "Please enter two dates which you wish to view the data for" is followed by two input fields labeled "Date1:" and "Date2:". An "Enter" button is located below the input fields. At the bottom of the page, there is a link: "[Take a tour to our survey page](#)". The Windows taskbar is visible at the bottom, showing the search bar, taskbar icons, and system tray with the time "7:55 PM" and date "2016-10-25".

Figure 3.7: Option to enter the date in respective date fields

The Radar charts for two different dates is as shown below:

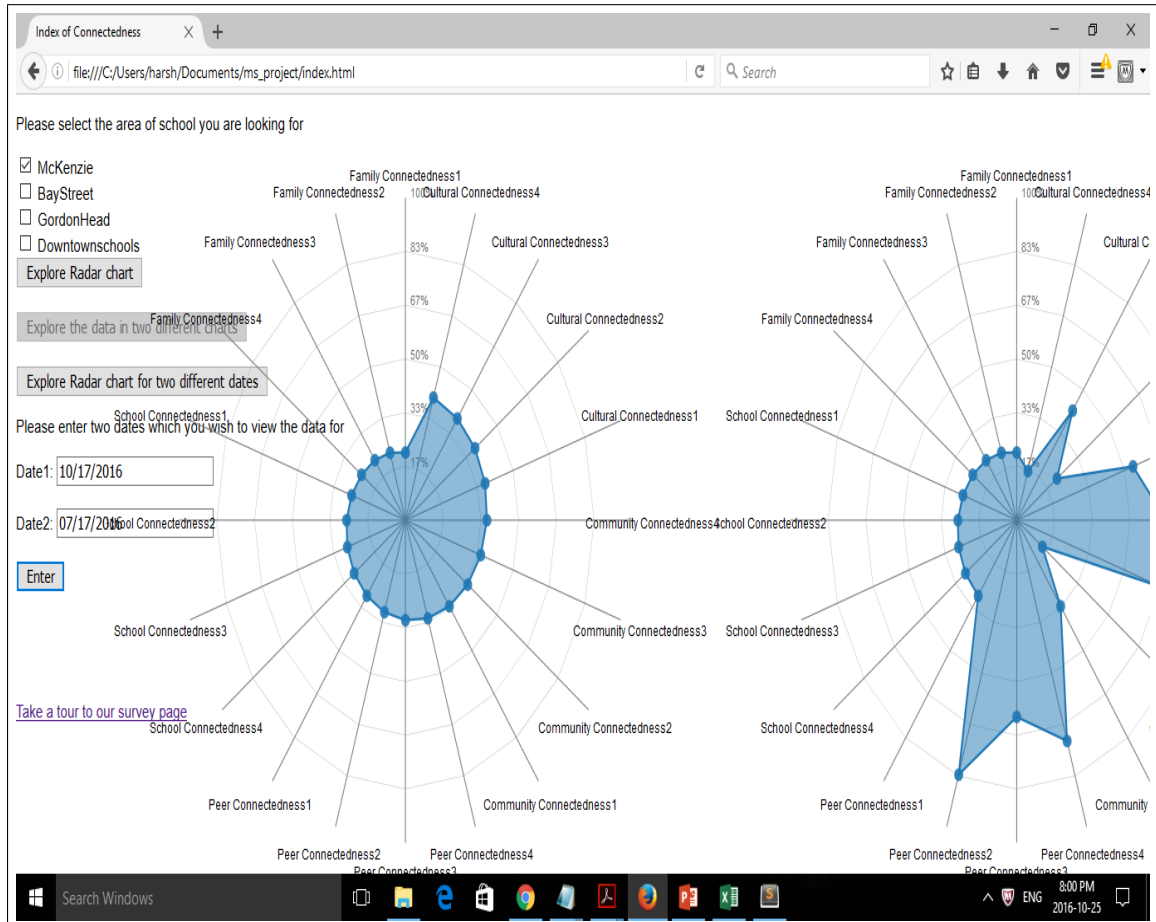
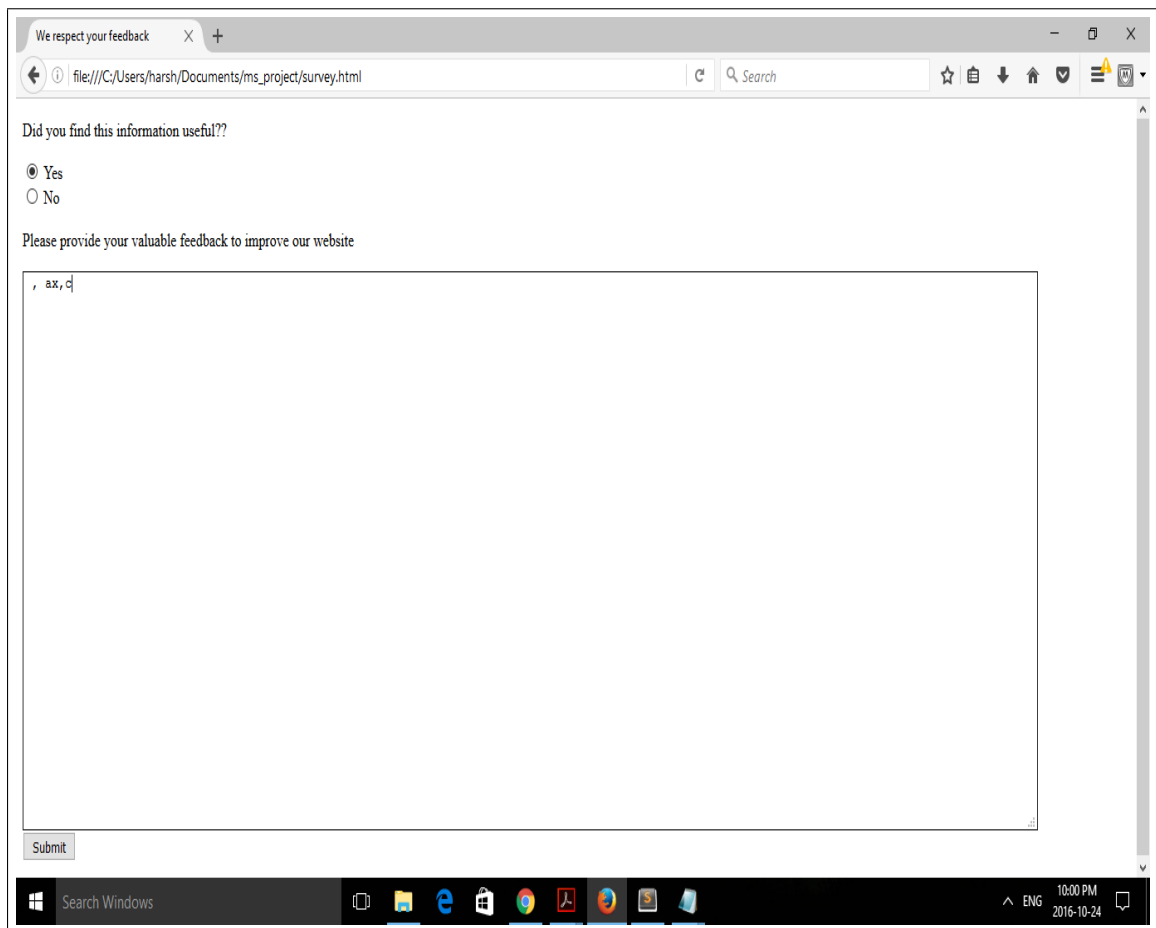


Figure 3.8: Figure representing the Radar charts for the given date values

3.5 Survey Page

A link to survey page is provided to allow the user to provide their feedback on this website.



We respect your feedback

file:///C:/Users/harsh/Documents/ms_project/survey.html

Did you find this information useful??

Yes
 No

Please provide your valuable feedback to improve our website

, ax, c|

Submit

Search Windows 10:00 PM 2016-10-24

Figure 3.9: Survey Page

When user clicks on the submit button, the data entered by the user is stored in a text file and saved in the back end of the system. The format of text file would be as attached.

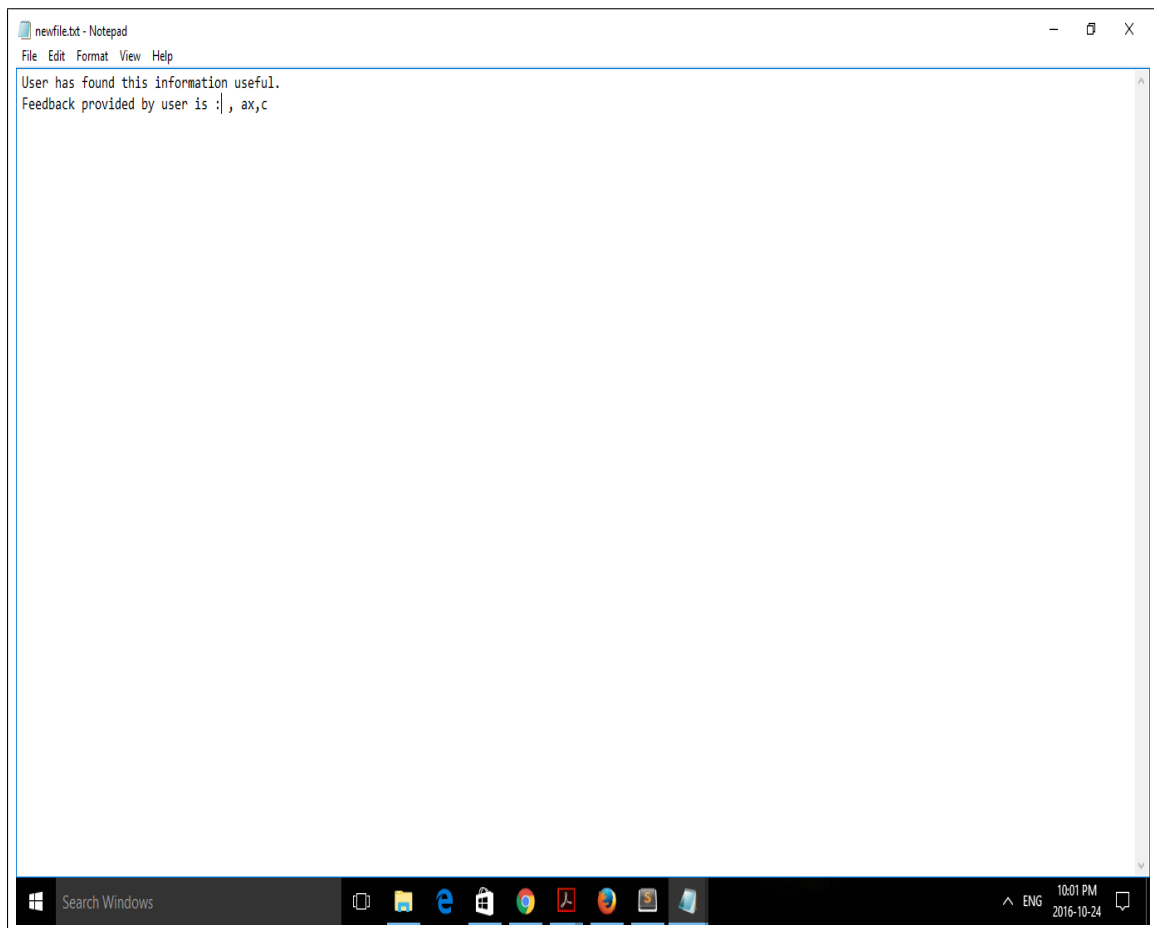


Figure 3.10: Data stored in text file

The feedback is useful for the website management team to make enhancements to the website as indicated by the user to meet their satisfaction.

3.5.1 Summary

This chapter provides an overview of the Connectedness Visualization from an user point-of-view. The following chapter provides an overview of the various web technologies used to build this tool.

Chapter 4

Web Technologies used in the Project

This chapter discusses the various web technologies used in this project and gives an overview of the implementation of the project.

4.1 Overview

As previously discussed in Chapter 1, the mental and physical health level of young people primarily depends on their level of connectedness to their family, school and community. Our work focuses on the different indicators that affect the mental and physical health condition of children and represent them in the form of a chart. In this project, raw data is collected and saved in a CSV file. The current data is just a sample data set. A future enhancement is in pipeline to store the data in a database to make use of the full scope of data that would be available in future. The data in the CSV file is used to represent the information in a graphical radar chart which is used to give an overview of the various factors that influence the physical and mental health condition of children in a community. This helps the community members to focus on specific areas which are inhibiting the growth of children and take a corrective measure to provide a quality life and support the well-being of children.

In our project, a website is created to display the graphs of various indicators of connectedness of the selected communities. This website also gives an option to the user to view the graphs of two communities in a side-by-side manner. Individual data of the children can also be viewed so as to pay more attention on those chil-

dren who has low levels of Connectedness. An option to compare between historic data and current data is also provided. A user feedback data is collected to provide enhancements to the website in future according to user suggestions.

4.2 Project Cycle

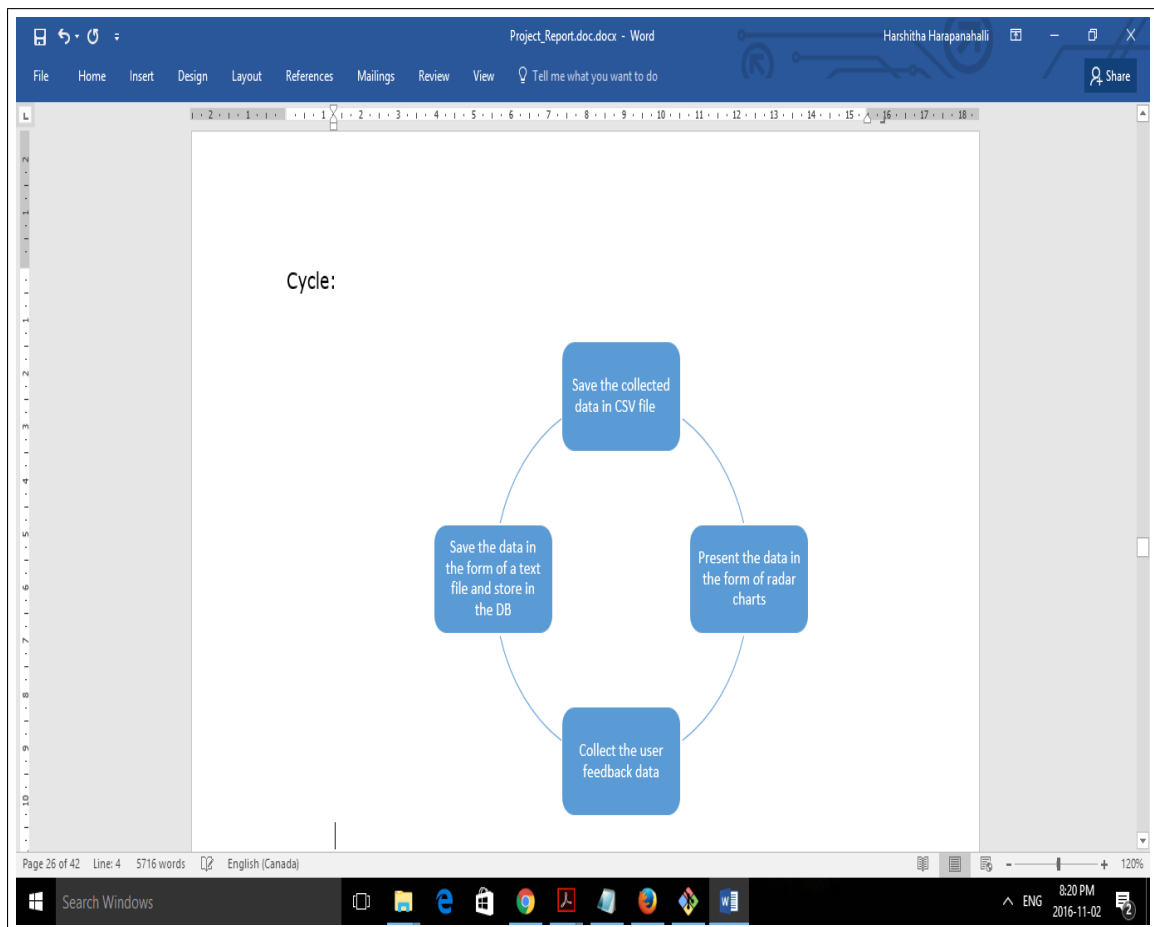


Figure 4.1: Cycle representing the stages of project

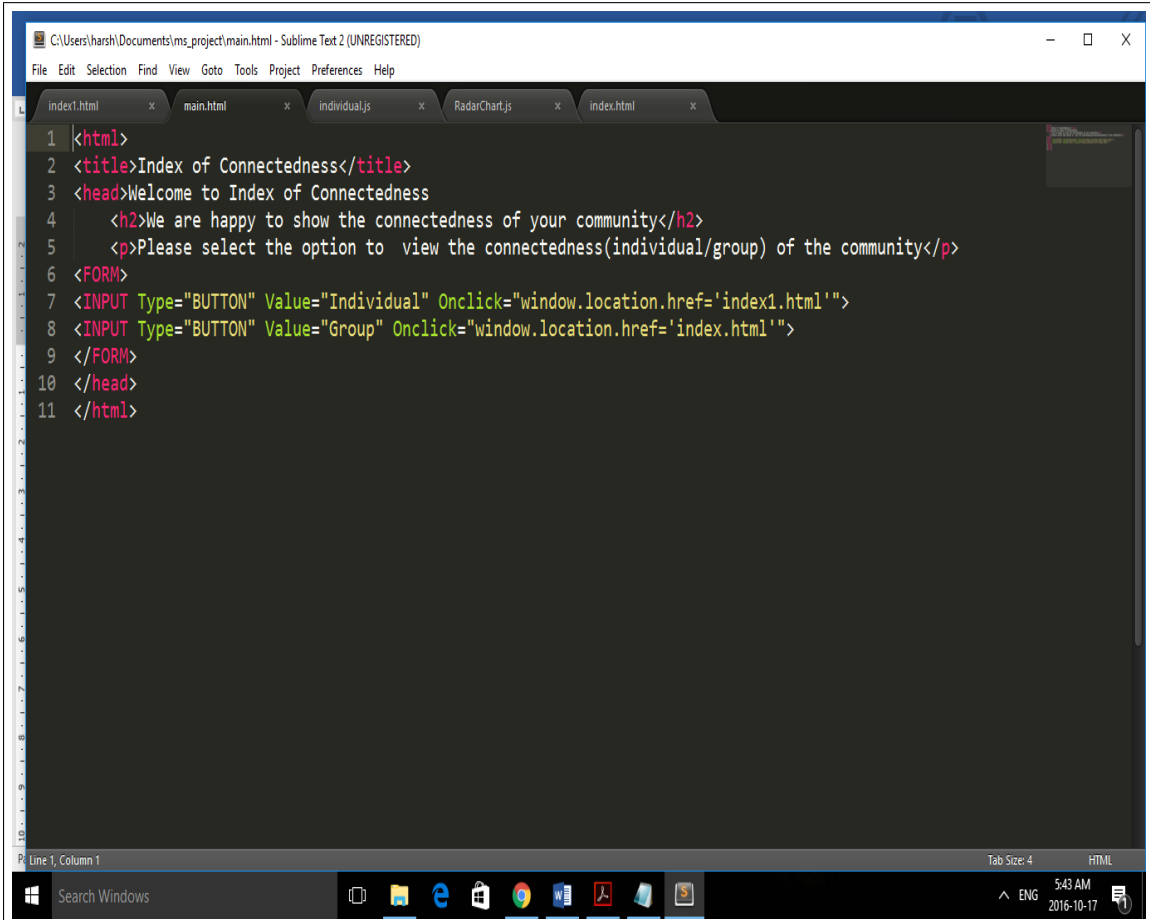
The various technologies used in this project are:

1. HTML
2. JavaScript
3. d3.js (JavaScript library)
4. PHP

4.3 HTML-Hyper Text Markup Language

HTML[4] is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS), and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web. Web browsers receive HTML documents from a webserver or from local storage and render them into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects, such as interactive forms may be embedded into the rendered page. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as `` and `<input >` introduce content into the page directly. Others such as `<p >` `</p >` surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page. HTML can embed programs written in a scripting language such as JavaScript which affect the behavior and content of web pages. Inclusion of CSS defines the look and layout of content.

Sample HTML code used for this project is



```
1 <html>
2 <title>Index of Connectedness</title>
3 <head>Welcome to Index of Connectedness
4   <h2>We are happy to show the connectedness of your community</h2>
5   <p>Please select the option to view the connectedness(individual/group) of the community</p>
6 <FORM>
7 <INPUT Type="BUTTON" Value="Individual" Onclick="window.location.href='index1.html'">
8 <INPUT Type="BUTTON" Value="Group" Onclick="window.location.href='index.html'">
9 </FORM>
10 </head>
11 </html>
```

Figure 4.2: Sample HTML Code

4.4 JavaScript

JavaScript [5] is a high-level, dynamic, untyped and interpreted programming language. Alongside HTML and CSS, it is one of the three core technologies of World Wide Web content production; the majority of websites employ it and it is supported by all modern Web browsers without plug-ins. JavaScript is prototype-based with first-class functions, making it a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles. It has an API for working with text, arrays, dates and regular expressions, but does not include any I/O, such as

networking, storage, or graphics facilities, relying for these upon the host environment in which it is embedded.

Although there are strong outward similarities between JavaScript and Java, including language name, syntax, and respective standard libraries, the two are distinct languages and differ greatly in their design. JavaScript was influenced by programming languages such as Self and Scheme. JavaScript is also used in environments that are not Web-based, such as PDF documents, site-specific browsers, and desktop widgets. Newer and faster JavaScript virtual machines (VMs) and platforms built upon them have also increased the popularity of JavaScript for server-side Web applications. On the client side, JavaScript has been traditionally implemented as an interpreted language, but more recent browsers perform just-in-time compilation. It is also used in game development, the creation of desktop and mobile applications, and server-side network programming with run-time environments such as Node.js.

Sample JavaScript code used in this project is

```

C:\Users\harsh\Documents\ms_project\index1.html - Sublime Text 2 (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
index1.html x main.html x individual.js x RadarChart.js x index.html x
<title>INDEX OF CONNECTEDNESS</title>
6 <script src="http://d3js.org/d3.v3.min.js"></script>
7 <script type="text/javascript">
8
9 function is_blank(){
10     var McKenzie=document.getElementById('McKenzie').checked;
11     var BayStreet=document.getElementById('BayStreet').checked;
12     var GordonHead=document.getElementById('GordonHead').checked;
13     var Downtownschoools=document.getElementById('Downtownschoools').checked;
14     var val1=document.getElementById('FirstName').value;
15     var val2=document.getElementById('LastName').value;
16     if(McKenzie==false && BayStreet==false && GordonHead==false && Downtownschoools==false)
17         alert("Please select atleast one school");
18     else{
19         var script1=document.createElement("script");
20         script1.setAttribute("type","text/javascript");
21         script1.setAttribute("src","individual.js");
22         document.getElementsByTagName("head")[0].appendChild(script1);
23     }
24 }
25 </script>
26 <div id="script">
27     <style>
28         body {
29             overflow: hidden;
30             margin: 0;
31             font-size: 14px;

```

Figure 4.3: Sample Java script code

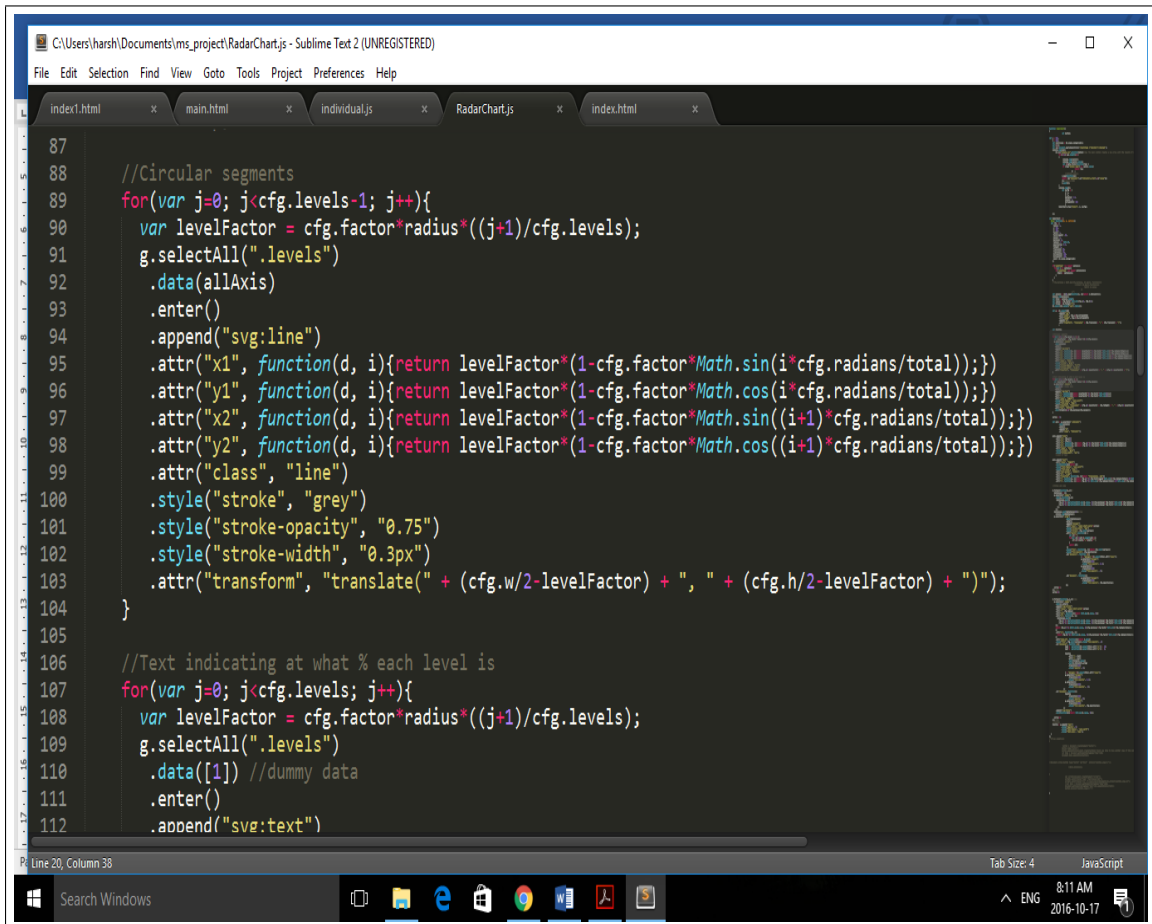
4.5 D3.js (Data Driven Documents)

D3.js[2] is a JavaScript library for producing dynamic, interactive data visualizations in web browsers. It makes use of the widely implemented SVG, HTML5, and CSS standards. It is the successor to the earlier Protovis framework. In contrast to many other libraries, D3.js allows great control over the final visual result. The webpages we create using HTML, CSS are static. The only way for a user to interact with the web was through clicking links and scrolling pages. There were many efforts to overcome such limitations. One of the most significant was the integration of JavaScript as the scripting language for web browsers. JavaScript gradually became the de facto

standard language for creating web pages with rich user interactivity. This played a crucial role in the decision to use JavaScript as the language of D3.js.

At the same time, researchers, engineers, and practitioners from various branches of engineering and science looked for tools that would enable web browsers to visually present data within web pages. The most notable examples were the Prefuse, Flare, and Protovis toolkits, which can all be considered as direct predecessors of D3.js. Embedded within an HTML webpage, the JavaScript D3.js library uses pre-built JavaScript functions to select elements, create SVG objects, style them, or add transitions, dynamic effects or tooltips to them. These objects can also be widely styled using CSS. Large datasets can be easily bound to SVG objects using simple D3.js functions to generate rich text/graphic charts and diagrams. The data can be in various formats, most commonly JSON, comma-separated values (CSV) or geoJSON, but, if required, JavaScript functions can be written to read other data formats.

Sample d3.js code that have been used in this project for displaying the Radar chart is:



```

87
88 //Circular segments
89 for(var j=0; j<cfg.levels-1; j++){
90     var levelFactor = cfg.factor*radius*((j+1)/cfg.levels);
91     g.selectAll(".levels")
92       .data(allAxis)
93       .enter()
94       .append("svg:line")
95       .attr("x1", function(d, i){return levelFactor*(1-cfg.factor*Math.sin(i*cfg.radians/total));})
96       .attr("y1", function(d, i){return levelFactor*(1-cfg.factor*Math.cos(i*cfg.radians/total));})
97       .attr("x2", function(d, i){return levelFactor*(1-cfg.factor*Math.sin((i+1)*cfg.radians/total);})
98       .attr("y2", function(d, i){return levelFactor*(1-cfg.factor*Math.cos((i+1)*cfg.radians/total);})
99       .attr("class", "line")
100      .style("stroke", "grey")
101      .style("stroke-opacity", "0.75")
102      .style("stroke-width", "0.3px")
103      .attr("transform", "translate(" + (cfg.w/2-levelFactor) + ", " + (cfg.h/2-levelFactor) + ")");
104 }
105
106 //Text indicating at what % each level is
107 for(var j=0; j<cfg.levels; j++){
108     var levelFactor = cfg.factor*radius*((j+1)/cfg.levels);
109     g.selectAll(".levels")
110       .data([1]) //dummy data
111       .enter()
112       .append("svg:text")

```

Figure 4.4: Sample D3.js code

Apart from generating charts and displaying the data, we also have an user survey form where user inputs his feedback on the website and submits it to the web browser. Then the survey feedback data is saved in a text file. PHP is used for storing this submitted information.

4.6 PHP

PHP [7] is a server-side scripting language designed primarily for web development but is also used as a general-purpose programming language. PHP originally stood for Personal Home Page, but it now stands for the recursive acronym PHP: Hypertext

Preprocessor. PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page. PHP code may also be executed with a command-line interface (CLI) and can be used to implement standalone graphical applications.

4.6.1 How to run PHP files?

The PHP files cannot be opened in web browser [3]. PHP files first need to be processed in web server before sending their output to the web browser. Therefore, before running PHP files, they should be placed inside the web folder of a web server and then make a request to desired PHP file by typing its URL in the web browser.

If you installed a web server in your computer, usually the root of its web folder can be accessed by typing

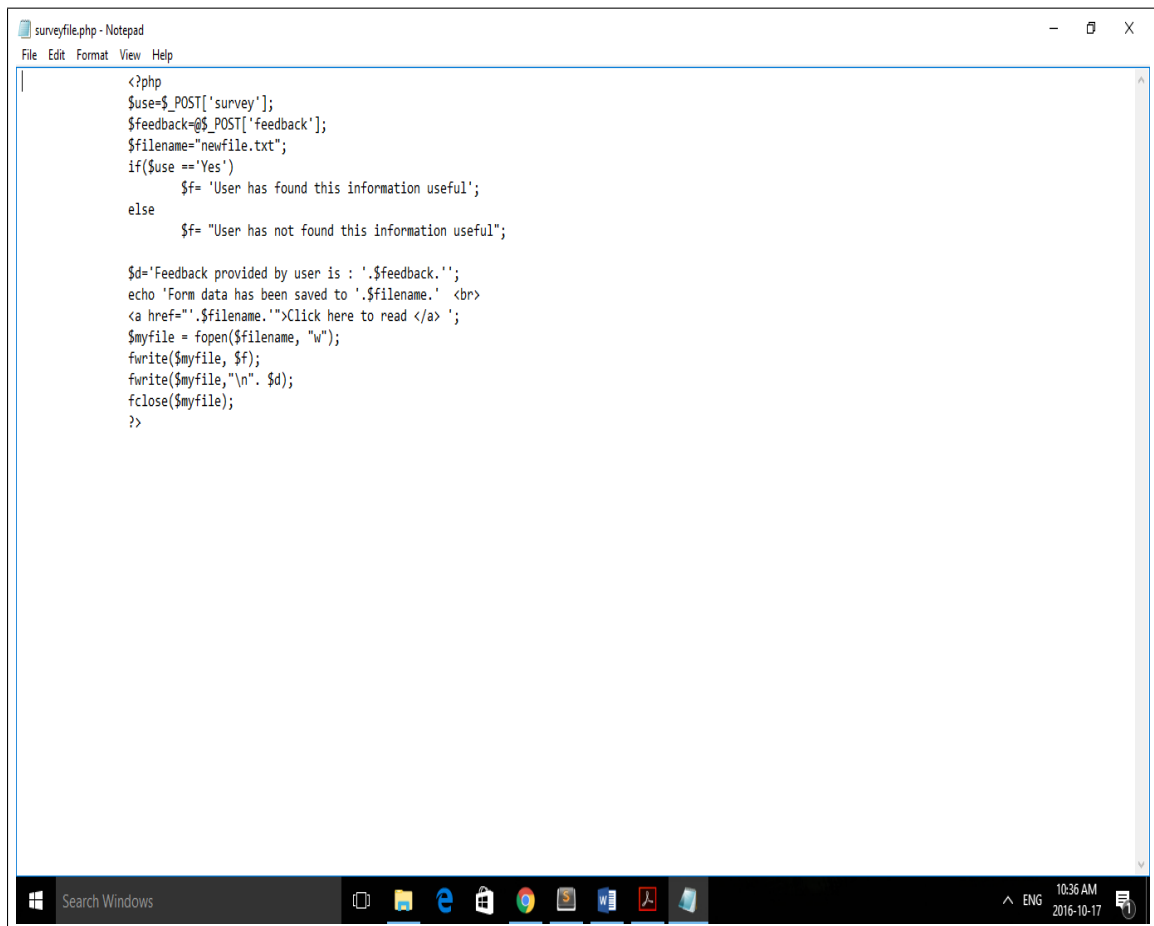
http://localhost in the web browser.

So, if you have placed a file called “hello.php” inside its web folder, you can run that file by calling

http://localhost/hello.php.

In this project we haven't hosted the website online, instead we have used XAMPP to install the APACHE web server and the web folder is “htdocs”. PHP script is written to send the user feedback data in a text file.

Sample PHP code used for this project is:



```

<?php
use=$_POST['survey'];
feedback=$_POST['feedback'];
filename="newfile.txt";
if($use == 'Yes')
    $f= 'User has found this information useful';
else
    $f= "User has not found this information useful";

$d="Feedback provided by user is : ".$feedback.";
echo "Form data has been saved to ".$filename." <br>
<a href=".$filename.">Click here to read </a> ";
$myfile = fopen($filename, "w");
fwrite($myfile, $f);
fwrite($myfile, "\n". $d);
fclose($myfile);
?>

```

Figure 4.5: Sample PHP code

4.7 Design Decisions

In this project, we have represented two different types of data.

1. Individual: To represent the individual data, a CSV file which contains details like First Name, Last Name, Indicators, values etc. is used. Individual.js is the JavaScript code used to represent this data.
2. Group: Group data is represented to address 3 requirements:
 - (a) **Radar chart displaying the overlapping view of multiple communities:** The file “RadarChart.js” is used to display the graph for multiple communities, each with a different color.

- (b) **Radar Chart in side-by-side fashion:** This includes two requirements
- i. Radar chart for comparison of two communities in side-by-side fashion
 - ii. Radar chart for two different dates of a particular community.

To display the chart in side-by-side fashion, we have used a single JavaScript file called “another.js” and a single csv file called “mydata dup.csv”. The overlapping fashion displays data for multiple communities on one axis and side-by-side fashion displays the data on two different axes, we have used two JavaScript files to display the data.

4.7.1 Summary

This chapter has provided an overview of the technology stack used to build the web-based visualization for the “Index of Connectedness”. The next chapter considers our conclusions and future insights.

Chapter 5

Evaluation and Future Insight

This Chapter discusses the major contribution that are done to the “Index of Connectedness” as part of this project. It includes the future enhancements that can be done to enhance this project to make it more user friendly and available to a broad segment of the public.

What changes are incorporated in this project?

The project gives an overview of the level of connectedness to various indicators that affects the physical and mental health condition of children of a particular community. This information of level of connectedness is useful to the community members to measure the mental health conditions of children.

There are different indicators related to Family, School, Peer, Community and Cultural connectedness that shows the direct link on the mental and physical health condition of children. The children who are well connected to these indicators have a less chance of pursuing self-harming behaviours such as committing suicides etc. Research has been done to show that these factors highly influence the way that a child is going to behave when he/she becomes an adult.

The estimated plan of Child and Youth Health Network team in measuring the mental health conditions of children are as follows:

1. Thorough review of the literature on the subject of connectedness and mental health in children and youth (complete).
2. Gather relevant data sources and indicators (complete).
3. Convene an expert panel to select indicators (complete).
4. Hire a researcher to analyze local data to feed into the Index (Complete).

5. Convene a second expert panel to tie index to recommendations for action for all members of our communities.
6. Develop measures to track the mental health of children and youth in the CRD.
7. Develop an instrument to fill data gaps, as required.

Data related to these different indicators is saved in a CSV file and radar chart is generated according to the related data.

The following are the technical implementations that are done as part of this project:

1. Created a Welcome web page for “Index of Connectedness” website.
2. On the Welcome page, the user is presented with two options:
 - (a) View Individual Data - to represent the radar chart of an individual (child).
 - (b) View Group Data - to represent the radar chart of children in a community or group of communities.
3. If user clicks on the “Individual” option
 - (a) User should select a community of a particular child he/she is interested in.
 - (b) First Name, Last Name and Roll No of the child should be entered.
 - (c) Radar chart related to the child is presented to the user.
4. If user clicks on the “Group” option
 - (a) User should select at least one community to view the radar chart.
 - (b) If user selects two or more options, he/she can view the data of all selected communities in the same chart. Each set of data is distinguished by a different color while representing the community in the chart so that they can be differentiate from one and the other.
 - (c) If user selects two communities and click the “Explore the data in two different graphs” option, then user can view two radar charts in the side-by side view fashion.

- (d) If user selects “Explore Radar chart for two different Dates”, they can compare the historic and present data of a particular community.
- 5. Option to allow the user to fill a survey form and provide his valuable feedback about the website is provided.

5.1 Future Enhancements

The basic key components that assist in viewing the data in a graphical representation is implemented. A few enhancements are proposed and are in pipeline to make this project more user-friendly.

1. Database to hold the data that is currently stored in a CSV file (as of now).
2. Instead of collecting the data related to different indicators manually, there could be an option to create a web page where the user can input the data related to the level of connectedness.
3. Instead of installing XAMPP on local computer and running the PHP file to view the submitted data, this website can be hosted on a web online server to make it available to a wide range of users connected through the Internet.
4. Cosmetic changes to improve the look and feel of the web page by adding CSS tags.
5. For “Individual Data” option, the average data of the community should be calculated to help the user in comparing the individual data with the average data of the community.

Chapter 6

Conclusion

The purpose of “Index of Connectedness” project is to showcase the mental and physical health condition of children by taking various factors into consideration that affect their growth. In some cases, a corrective measure must be taken to keep the children in a safe environment. Research shows that connectedness to family, community, school and peers is directly linked to improved mental health for youth, as well as to reduced risk, including less self-harming behaviours and less frequent suicidal ideas. Connectedness and a sense of belonging is also linked to increased likelihood of high school graduation and post-secondary planning for youth.

A website has been created which helps the community members (parents, school teachers, government, child care society, business owners) to have a look into the different aspects of connectedness to the children and help them in contributing to a sustainable life. Along with the group data representation, this project focuses on displaying the individual data and an option to compare historic and current data of a community. “Index of Connectedness” comprises of indicators of connectedness rolled up into an index that can be tracked over time. Children and youth who are connected will engage more often in healthier activities (and less often in harmful activities) and are more likely to graduate and attend post-secondary school. This, hopefully, will lead to an educated and improved community health in long term.

Appendix A

Additional Information

A.1 Sample d3.js code to represent the Overlapping fashion of charts:

```
function radarchart()
{
  var w = 500,
  h = 500;
  var colorscale = d3.scale.category10();
  var d=[];
  var date;
  var date_row;
  var val=document.querySelectorAll('input[type ="checkbox"]:checked');
  console.log(val);
  d3.csv("mydata_dup.csv",function(data){
    //new The map() method creates a new array with
    //the results of calling a function for every
    //array element.
    for(i=0;i<val.length;i++)
    {
      console.log(val[i]);
      console.log(val[i].value);

      date_row=data.filter(function(plk){
```

```

    if(plk["School Name"] == val[i].value)
    {
        return plk;
    }
});
var nest = d3.nest()
    .key(function(d) { return d.Date; })
    .entries(date_row);
if(nest.length==1)
{
    date=nest[0];
}
else
{
    console.log(nest);
    for(j=0;j<nest.length;j++)
    {
        var date1=nest[j];
        if(date>date1)
            date=date;
        else
            date=date1;
    }
}
console.log(date.key);
k=date_row.filter(function(row) {
console.log(i);
    if (row["School Name"] == val[i].value && row["Date"]==date.key)
return row;
}) ;
k.map(function(p){
return [p["Indicator"],p["Indicators_orig"],+p["value"]];
});
d.push(k);
}

```

```
console.log(d);
var mycfg = {
  w: w,
  h: h,
  maxValue: 1.0,
  levels: 6,
  ExtraWidthX: 300
}
RadarChart.draw("#chart", d, mycfg);

});
}
var RadarChart = {
  draw: function(id, d, options){
    var cfg = {
      radius: 5,
      w: 600,
      h: 600,
      factor: 1,
      factorLegend: .85,
      levels: 3,
      maxValue: 0,
      radians: 2 * Math.PI,
      opacityArea: 0.5,
      ToRight: 5,
      TranslateX: 80,
      TranslateY: 30,
      ExtraWidthX: 100,
      ExtraWidthY: 100,
      color: d3.scale.category10()
    };

    if('undefined' !== typeof options){
      for(var i in options){
```

```

if('undefined' !== typeof options[i]){
  cfg[i] = options[i];
}
}
}

var allAxis = (d[0].map(function(i, j){return i.Indicator}));
console.log(allAxis);
var total = allAxis.length;
var radius = cfg.factor*Math.min(cfg.w/2, cfg.h/2);
var Format = d3.format('%');
d3.select(id).select("svg").remove();

var g = d3.select(id)
.append("svg")
.attr("width", cfg.w+cfg.ExtraWidthX)
.attr("height", cfg.h+cfg.ExtraWidthY)
.append("g")
.attr("transform", "translate(" + cfg.TranslateX + "," + cfg.TranslateY + ")");
;

var tooltip;

for(var j=0; j<cfg.levels-1; j++){
  var levelFactor = cfg.factor*radius*((j+1)/cfg.levels);
  g.selectAll(".levels")
  .data(allAxis)
  .enter()
  .append("svg:line")
  .attr("x1", function(d, i){
    return levelFactor*(1-cfg.factor*Math.sin(i*cfg.radians/total));})
  .attr("y1", function(d, i){
    return levelFactor*(1-cfg.factor*Math.cos(i*cfg.radians/total));})
  .attr("x2", function(d, i){
    return levelFactor*(1-cfg.factor*Math.sin((i+1)*cfg.radians/total));})
  .attr("y2", function(d, i){

```

```

    return levelFactor*(1-cfg.factor*Math.cos((i+1)*cfg.radians/total));})
.attr("class", "line")
.style("stroke", "grey")
.style("stroke-opacity", "0.75")
.style("stroke-width", "0.3px")
.attr("transform", "translate(" + (cfg.w/2-levelFactor) +
    ", " + (cfg.h/2-levelFactor) + ")");
}

```

```

for(var j=0; j<cfg.levels; j++){
    var levelFactor = cfg.factor*radius*((j+1)/cfg.levels);
    g.selectAll(".levels")
        .data([1])
        .enter()
        .append("svg:text")
        .attr("x", function(d){return levelFactor*(1-cfg.factor*Math.sin(0));})
        .attr("y", function(d){return levelFactor*(1-cfg.factor*Math.cos(0));})
        .attr("class", "legend")
        .style("font-family", "sans-serif")
        .style("font-size", "10px")
        .attr("transform", "translate(" + (cfg.w/2-levelFactor + cfg.ToRight) +
            ", " + (cfg.h/2-levelFactor) + ")")
        .attr("fill", "#737373")
        .text(Format((j+1)*cfg.maxValue/cfg.levels));
}

```

```
series = 0;
```

```

var axis = g.selectAll(".Indicator")
    .data(allAxis)
    .enter()
    .append("g")
    .attr("class", "Indicator");

```

```

axis.append("line")
.attr("x1", cfg.w/2)
.attr("y1", cfg.h/2)
.attr("x2", function(d, i){
  return cfg.w/2*(1-cfg.factor*Math.sin(i*cfg.radians/total));})
.attr("y2", function(d, i){
  return cfg.h/2*(1-cfg.factor*Math.cos(i*cfg.radians/total));})
.attr("class", "line")
.style("stroke", "grey")
.style("stroke-width", "1px");

axis.append("text")
.attr("class", "legend")
.text(function(d){return d})
.style("font-family", "sans-serif")
.style("font-size", "11px")
.attr("text-anchor", "middle")
.attr("dy", "1.5em")
.attr("transform", function(d, i){return "translate(0, -10)"})
.attr("x", function(d, i){
  return cfg.w/2*(1-cfg.factorLegend*Math.sin(i*cfg.radians/total))-
  60*Math.sin(i*cfg.radians/total);})
.attr("y", function(d, i){return cfg.h/2*(1-Math.cos(i*cfg.radians/total))-
  20*Math.cos(i*cfg.radians/total);});

d.forEach(function(y,x){
  dataValues = [];
  g.selectAll(".nodes")
  .data(y,function(j,i){
  dataValues.push([
    cfg.w/2*(1-(parseFloat(Math.max(j.value,0))/cfg.maxValue)
    *cfg.factor*Math.sin(i*cfg.radians/total)),
    cfg.h/2*(1-(parseFloat(Math.max(j.value, 0))/cfg.maxValue)*cfg.factor*

```

```

        Math.cos(i*cfg.radians/total))
    ]);
});
    dataValues.push(dataValues[0]);
    console.log(dataValues);
    g.selectAll(".area")
    .data([dataValues])
    .enter()
    .append("polygon")
    .attr("class", "radar-chart-serie"+series)
    .style("stroke-width", "2px")
    .style("stroke", cfg.color(series))
    .attr("points",function(d) {
var str="";
for(var pti=0;pti<d.length;pti++){
str=str+d[pti]+","+"d[pti]+" ";
}
return str;
    })
    .style("fill", function(j, i){return cfg.color(series)})
    .style("fill-opacity", cfg.opacityArea)
    .on('mouseover', function (d){
z = "polygon."+d3.select(this).attr("class");
g.selectAll("polygon")
    .transition(200)
    .style("fill-opacity", 0.1);
g.selectAll(z)
    .transition(200)
    .style("fill-opacity", .7);
    })
    .on('mouseout', function(){
g.selectAll("polygon")
    .transition(200)
    .style("fill-opacity", cfg.opacityArea);
    });
});

```

```

    series++;
  });
  series=0;

  d.forEach(function(y,z,x){
    g.selectAll(".nodes")
    .data(y).enter()
    .append("svg:circle")
    .attr("class", "radar-chart-serie"+series)
    .attr('r', cfg.radius)
    .attr("alt", function(j){return Math.max(j.value, 0)})
    .attr("cx", function(j, i){
      dataValues.push([
        cfg.w/2*(1-(parseFloat(Math.max(j.value, 0))/cfg.maxValue)*cfg.factor*
        Math.sin(i*cfg.radians/total)),
        cfg.h/2*(1-(parseFloat(Math.max(j.value, 0))/cfg.maxValue)*cfg.factor*
        Math.cos(i*cfg.radians/total))
      ]);
      return cfg.w/2*(1-(Math.max(j.value,0)
      /cfg.maxValue)*cfg.factor*Math.sin(i*cfg.radians/total));
    })
    .attr("cy", function(j, i){
      return cfg.h/2*(1-(Math.max(j.value, 0)/cfg.maxValue)*cfg.factor*
      Math.cos(i*cfg.radians/total));
    })
    .attr("data-id", function(j){return j.axis})
    .style("fill", cfg.color(series)).style("fill-opacity", .9)
    .on('mouseover', function (d){
newX = parseFloat(d3.select(this).attr('cx')) - 10;
newY = parseFloat(d3.select(this).attr('cy')) - 5;

  tooltip
    .attr('x', newX)
    .attr('y', newY)

```

```

.text(Format(d.value))
.text(d.Indicators_orig)
.transition(200)
.style('opacity', 1);

z = "polygon."+d3.select(this).attr("class");
g.selectAll("polygon")
.transition(200)
.style("fill-opacity", 0.1);
g.selectAll(z)
.transition(200)
.style("fill-opacity", .7);
})
.on('mouseout', function(){
tooltip
.transition(200)
.style('opacity', 0);
g.selectAll("polygon")
.transition(200)
.style("fill-opacity", cfg.opacityArea);
})
.append("svg:title")
.text(function(j){return Math.max(j.value, 0)});

series++;
});
tooltip = g.append('text')
.style('opacity', 0)
.style('font-family', 'sans-serif')
.style('font-size', '13px');
}
};

```

Appendix B

Additional Information

B.1 Sample CSV file

Given below is the sample CSV file that is used to generate the Radar chart

First Name	Last Name	Indicator	Community Name	Full Description of Indicator	Value
SAM	John	Family Connectedness1	McKenzie	In my home there is a parent or another adult who listens to me when I have something to say	0.21
SAM	John	Family Connectedness2	McKenzie	How much do you feel that people in your family understand you?	0.22
SAM	John	Family Connectedness3	McKenzie	How much do you feel that you and your family have fun together?	0.23
SAM	John	Family Connectedness4	McKenzie	If you were having a serious problem is there an adult in your family that you would feel okay talking to?	0.24
SAM	John	School Connectedness1	McKenzie	At my school there is a teacher or another adult who really cares about me	0.25
SAM	John	School Connectedness2	McKenzie	How many adults at your school care about you?	0.26
SAM	John	School Connectedness3	McKenzie	I feel like I am part of this school	0.27

Sample CSV file (continued)

SAM	John	School Connectedness4	McKenzie	No.of schools a child/youth has attended in the past year	0.28
SAM	John	Peer Connectedness1	McKenzie	Are there safe places in your neighbourhood/community where you feel comfortable to hang out with friends like playgrounds/parks/ or community centres?	0.58
SAM	John	Peer Connectedness2	McKenzie	When I am with other kids my age I feel I belong	0.57
SAM	John	Peer Connectedness3	McKenzie	I have at least one really good friend I can talk to when something is bothering me	0.42
SAM	John	Peer Connectedness4	McKenzie	Ability to get along with peers	0.76
SAM	John	Community Connectedness1	McKenzie	In my neighbourhood/community (not from your school or family) there is an adult who really cares about me	0.13
SAM	John	Community Connectedness2	McKenzie	If you were having a serious problem is there an adult who is NOT in your family that you would feel okay talking to?	0.64
SAM	John	Community Connectedness3	McKenzie	I feel valued by adults in my community	0.05

Sample CSV file (continued)

SAM	John	Community Connectedness4	McKenzie	How much do you agree or disagree with the following statement about your neighbourhood? I know my neighbours	0.46
SAM	John	Cultural Connectedness1	McKenzie	Thinking about the ethnic or cultural group that you most identify with how much do you agree or disagree with the following statement? I understand pretty well what my ethnic group membership means to me	0.37
SAM	John	Cultural Connectedness2	McKenzie	I have spent time finding out more about my culture such as its history traditions and customs	0.38
SAM	John	Cultural Connectedness3	McKenzie	I have talked to other people in order to learn more about my culture	0.78
SAM	John	Cultural Connectedness4	McKenzie	I feel a strong connection to my ancestors	0.01
PETER	Kennedy	Family Connectedness1	BayStreet	In my home there is a parent or another adult who listens to me when I have something to say	0.99
PETER	Kennedy	Family Connectedness2	BayStreet	How much do you feel that people in your family understand you?	0.02
PETER	Kennedy	Family Connectedness3	BayStreet	How much do you feel that you and your family have fun together?	0.42
PETER	Kennedy	Family Connectedness4	BayStreet	If you were having a serious problem is there an adult in your family that you would feel okay talking to?	0.03
PETER	Kennedy	School Connectedness1	BayStreet	At my school there is a teacher or another adult who really cares about me	0.44
PETER	Kennedy	School Connectedness2	BayStreet	How many adults at your school care about you?	0.05

Sample CSV file (continued)

PETER	Kennedy	School Connectedness3	BayStreet	I feel like I am part of this school	0.06
PETER	Kennedy	School Connectedness4	BayStreet	No.of schools a child/youth has attended in the past year	0.47
PETER	Kennedy	Peer Connectedness1	BayStreet	Are there safe places in your neighbourhood/community where you feel comfortable to hang out with friends like playgrounds/parks/ or community centres?	0.48
PETER	Kennedy	Peer Connectedness2	BayStreet	When I am with other kids my age I feel I belong	0.49
PETER	Kennedy	Peer Connectedness3	BayStreet	I have at least one really good friend I can talk to when something is bothering me	0.50
PETER	Kennedy	Peer Connectedness4	BayStreet	Ability to get along with peers	0.51
PETER	Kennedy	Community Connectedness1	BayStreet	In my neighbourhood/community (not from your school or family) there is an adult who really cares about me	0.52
PETER	Kennedy	Community Connectedness2	BayStreet	If you were having a serious problem is there an adult who is NOT in your family that you would feel okay talking to?	0.53
PETER	Kennedy	Community Connectedness3	BayStreet	I feel valued by adults in my community	0.54
PETER	Kennedy	Community Connectedness4	BayStreet	How much do you agree or disagree with the following statement about your neighbourhood? I know my neighbours	0.55
PETER	Kennedy	Cultural Connectedness1	BayStreet	Thinking about the ethnic or cultural group that you most identify with how much do you agree or disagree with the following statement? I understand pretty well what my ethnic group membership means to me	0.56

Sample CSV file (continued)

PETER	Kennedy	Cultural Connectedness2	BayStreet	I have spent time finding out more about my culture such as its history traditions and customs	0.57
PETER	Kennedy	Cultural Connectedness3	BayStreet	I have talked to other people in order to learn more about my culture	0.58
PETER	Kennedy	Cultural Connectedness4	BayStreet	I feel a strong connection to my ancestors	0.59
SAM	John	Family Connectedness1	GordonHead	In my home there is a parent or another adult who listens to me when I have something to say	0.05
SAM	John	Family Connectedness2	GordonHead	How much do you feel that people in your family understand you?	0.64
SAM	John	Family Connectedness3	GordonHead	How much do you feel that you and your family have fun together?	0.05
SAM	John	Family Connectedness4	GordonHead	If you were having a serious problem is there an adult in your family that you would feel okay talking to?	0.24
SAM	John	School Connectedness1	GordonHead	At my school there is a teacher or another adult who really cares about me	0.91
SAM	John	School Connectedness2	GordonHead	How many adults at your school care about you?	0.84
SAM	John	School Connectedness3	GordonHead	I feel like I am part of this school	0.95
SAM	John	School Connectedness4	GordonHead	No.of schools a child/youth has attended in the past year	0.12
SAM	John	Peer Connectedness1	GordonHead	Are there safe places in your neighbourhood/community where you feel comfortable to hang out with friends like playgrounds/parks/ or community centres?	0.01
SAM	John	Peer Connectedness2	GordonHead	When I am with other kids my age I feel I belong	0.02
SAM	John	Peer Connectedness3	GordonHead	I have at least one really good friend I can talk to when something is bothering me	0.03

Sample CSV file (continued)

SAM	John	Peer Connectedness4	GordonHead	Ability to get along with peers	0.56
SAM	John	Community Connectedness1	GordonHead	In my neighbourhood/community (not from your school or family) there is an adult who really cares about me	0.13
SAM	John	Community Connectedness2	GordonHead	If you were having a serious problem is there an adult who is NOT in your family that you would feel okay talking to?	0.05
SAM	John	Community Connectedness3	GordonHead	I feel valued by adults in my community	0.06
SAM	John	Community Connectedness4	GordonHead	How much do you agree or disagree with the following statement about your neighbourhood? I know my neighbours	0.77
SAM	John	Cultural Connectedness1	GordonHead	Thinking about the ethnic or cultural group that you most identify with how much do you agree or disagree with the following statement? I understand pretty well what my ethnic group membership means to me	0.85
SAM	John	Cultural Connectedness2	GordonHead	I have spent time finding out more about my culture such as its history traditions and customs	0.96
SAM	John	Cultural Connectedness3	GordonHead	I have talked to other people in order to learn more about my culture	0.70
SAM	John	Cultural Connectedness4	GordonHead	I feel a strong connection to my ancestors	0.85

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