**DATA REPOSITORY FOR HUMAN**

**DEVELOPMENT INDICATORS**

MINOR PROJECT (7th SEMESTER)



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PROBLEM STATEMENT

Information and Technology are the two faces of the same coin; ones which have become an indispensable part of the digital world. As the cyber world has grown so has the volume of Data that is being churned at a daily and monumental pace. Data itself is not sufficient to seek the information that organizations need to make informed decisions. This data needs to be closely managed, monitored, processed, summarized, collated, documented and secured so that it can be used effectively by the rightful owners.

Managing this huge volume of data has made it mandatory to have Data Repository for easy discovery, Visualization and Analysis to have an Automatized flow of Data from the Data Provider to the Data Consumer. This Data Repository Systems amalgamate people and procedures to process Data and involves Discovery, Analysis, Visualization, Manipulation and Retrieval of Data.

**Acquiring, Maintaining and Providing Data for analysis:**

The Data System includes the entire lifecycle of the conversion of raw data into its meaningful counterpart, information. This is a Data Repository System which is basically a Data System in the form of a Dashboard for Easy Discovery, Visualization and Analysis of Human Development Indicators like Literacy Rate, Poverty Rate, Mortality Rate etc. which facilitates the automatic flow of Data from the Provider to the Consumer with the Maintainer in between, maintaining the Data. This is a 3-way process in which there are 3-Entities: Data Provider, Data Repository Maintainer, and Data Consumer, with which the Data flows is the System.

1. Provider: This is the Data Provider which provides the Data to the Data Repository System according the measures set by the Data Maintainer. Data provider, to provide the data has to register with the System so to provide the Data to the system so that Consumer can consume the Data. Moreover, System will generate a notification on the Registered Provider’s System when the Data Consumer generates a request for the Data.
2. Maintainer: This is the Data Maintainer which maintains the flow of Data from the Provider to the Consumer. This Maintainer Entity sets the measures with which the Data provider provides the Data and the Data Consumer can consume the Data with the help of the Data Repository System. And also this Maintainer takes the request from the Data Consumer to consume the Data and notify the Provider for the same. Similarly when a Provider provides the Data to the System, this Maintainer will generate a notification on the Consumer’s System so that he can consume the provided Information.
3. Consumer: This is the Data Consumer consumes the Data, provided by the Data Provider to the System. This Entity constitutes various organizations which require Analyzed Data in the Visual form so as to work on it. For this, these various organizations have to register with the System so as to get the Analyzed, visualized Data from the Provider.

TECHINICAL REQUIREMENTS:

* D3.js:D3.js is a JavaScript library for manipulating documents based on data. D3 helps you bring data to life using HTML, SVG and CSS. D3’s emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.D3.js helps you attach your data to DOM (Document Object Model) elements. Then you can use CSS3, HTML, and/or SVG showcase this data. Finally, you can make the data interactive through the use of D3.js data-driven transformations and transitions.This D3.js Framework will be used to generate visual representation to the Analysed Data on the Data Repository Dashboard which is provided by the Provider so that the consumer can analyse and consume the Data accordingly.
* Node.js: Node.js is a platform built on Chrome’s JavaScript Runtime for easily building fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications.

* Express.js:Express is a minimal and flexible Node.js web application framework that provides a robust set of features to develop web and mobile applications. It facilitates the rapid development of Node based Web applications. Following are some of the core features of Express framework
* Allows to set up middlewares to respond to HTTP Requests.
* Defines a routing table which is used to perform different actions based on HTTP Method and URL.
* Allows to dynamically render HTML Pages based on passing arguments to templates.

This Node framework with the help of Node is used to make the server side of the Dashboard, which is used to generate the notifications to the provider and the consumer’s system.

* CSS:**CSS** stands for **C**ascading **S**tyle **S**heets
* CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**
* CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
* External stylesheets are stored in **CSS files**
* HTML:HTML is the standard markup language for creating Web pages.
* HTML stands for Hyper Text Markup Language
* HTML describes the structure of Web pages using markup
* HTML elements are the building blocks of HTML pages
* HTML elements are represented by tags
* HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
* Browsers do not display the HTML tags, but use them to render the content of the page