AR Interface

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By

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MINOR PROJECT(CS-387) SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF B.TECH(CSE)

AT

School Of Computer Science

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BONAFIDE CERTIFICATE

Certified that this project report **“AR Game”** is the bonafide work of **Harshit Yadav (14CS003) , Sheryl Bernard (14CS088)** who carried out the project in collaboration with **School of Computer Science, Lingaya’s University**, embodies the work done by him under the guidance of Mrs. Shilpi Singh,Assistant Professor(SCS) towards partial fulfilment of the requirements of the Degree of Bachelor of Technology in Computer Science and Engineering from Lingaya’s University, Haryana.. They have fulfilled all the requirements needed as per the rules of the University, for the completion of Project. This work is original and has not been submitted in part or in full to any University or Institution.

Signature of the Supervisor

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LINGAYA’S UNIVERSITY

CERTIFICATE OF AUTHENTICATION

We solemnly declare that this project “**AR Game**” is the bonafide work done purely by us, carried out under the supervision of **Mrs. Shilpi Singh, Assistant Professor (SCS)**towards partial fulfilment of the requirements of the Degree of Bachelor of Technology in Computer Science and Engineering from Lingaya’s university, Faridabad, during the year 2016-2017.

It is further certified that this wok has not been submitted, either in part or in full, to any other department of the Lingaya’s university, or any other University, institute or elsewhere, or publication in any form.

Date:

Harshit Yadav (14CS003)

Sheryl Bernard (14CS088)

ACKNOWLEDGEMENT

In completing my project, we are very thankful to many individuals and we must place on record our sincere thanks to all of them.

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ABSTRACT

The work presented in this report involved developing AR interface which is proof of concept towards building a Augemented reality based interactive medium to interact and learn various conceptual subjects such as cloud computing, Blockchain and Database Designing and operational status in 3-D Interface which can accessed using any of the Hardware like VR headsets or even Smartphones

The problem faced in advent rise of cloud computing and Blockchain and other Cloud based technologies is that they are difficult to understand and troubleshoot therefore by creating a new interactive medium between the user and application will be great tool to use

Chapter – 1

1.1 Introduction

In modern day work environment connectivity is crucial component and availability of proper working connection to every workstation is an essential thing. An application for the employee to check the connectivity status and troubleshoot the problem without having any much of Technical knowledge with all the reports and data being collected at a centralized portal for better analytics and providing insights for improvements and checking on the connectivity speed available at POS (Point of Sale)

1.2 Objective

Objective is to create an interactive and User friendly GUI application through which a person with even no technical knowledge check for connectivity problems and the application can record the data consumption, Uptime, speed available by ISP and send all the data to a centralized portal where the data can be analyzed for identifying the troubles and finding an efficient solution

1.3 Novelty:

- Easy to operate and interactive UI which makes it usable by even a non-technical person
- Unbiased Speed Tests and Performance Reports
- Lightweight and supports latest OS
- Easy to Deploy and No additional hardware and maintenance cost

1.4 Modules

a) Speed Measurement

The Speed Measurement Module which is a part of the Desktop application contains a self-developed algorithm for network performance measurement and an indexing scheme which takes the input from where tests performed and generate a score based result for the user to analyze the connectivity health
Technology Used : C# , .Net

b) Portal

The Portal is a web application which can be accessed via a web browser on any device s with the help a AR based framework that is embedded in the interface at the time of loading into the

Chapter -2

2.1 Requirement Analysis

In this part of the report we would essentially discuss about the requirement analysis of our project. Our project Ar game is a PC based application with emphasis on simplicity, preciseness and to the point functionality. So for creating such a product the software required or the resources needed must not only be stable and readily available in market but also robust, strong and effective for few years to come. In our project henceforth we have used technologies like Visual Studio, MySOL which are still in use and are in heavy demand in the future as well. Also since our application is lightweight so there no as such OS specifications or changes that would be required for installing or using our application. The other primary requirements for the development and effective usage of our application would be a resilient backend server that we need to maintain and a cloud storage where the data and the said information be stored and kept for future usage and utilities. Basically for this project we require some basic technologies, a server,a cloud portal and a strong functioning backend.

2.2 Investigation Phase

In this phase we would discuss about the basic structure and how this project came into being. We all have different internet providers and they offer us a set speed but in reality there is a vast difference in speed offered or promised as to speed which we actually get so to work upon the problem set we further tested our problem using different speed tests like Ookla speed test, Speedtest.net, Testmy.net and so on. And we found out that there was not only a difference in speed but also different speed testing sites were showing different speeds at the same time of same internet connection provided at that instant. So we built up our own application, we wrote our own Propriety code and a developed an algorithm to check speed in an unbiased manner. Then we did run few test cases to check if our algorithm was working as we wanted it to work. We used different test cases, different internet connections on various devices to check whether our application was performing in the expected way or not. So this is how we investigated for building our project into its being as it is today and then worked on bug fixes and some issues that we worked upon in our development phase.

2.3 Designing Phase

During this phase we faced many challenges as we just had an abstract idea of our problem but designing it further and giving it a proper shape was quite a challenge. So we used basic coding language as C# over which our application code and basic algorithm would be written. Then for its functioning we needed other key components so we used My SQL for the backend and Microsoft Azure for cloud based functionalities. So basically in our project the application will run on a remote machine then all the Information would be sent to backend then it will send the data to the centralized cloud storage which would have all the data sorted and maintained in a nice order. So thus our application would run on any machine as an automatic windows service and would hence use very less OS and resources of the local machine while sending all the necessary information and data to the remote server and also providing the basic details to the user or the advanced details for the IT department. So in this phase we designed and planned out how we would structure and make our project function step by step diving the chores within our team.

2.4 Coding Phase

In this phase of the project we basically coded and implemented our ideas and written logics. We checked them and tweaked whatever changes and modification were required. Then we tried to write our code in least number of lines feasible so as to make our application faster. We checked our calculation and developed a very user friendly GUI. Also in this phase we created a backed and a server, did our data linkage so that there is smooth and easy flow of data and also it can be stored efficiently at one place. We checked our algorithms with different internet speeds on different devices and coded accordingly. We then worked on the automatic startup of the application as windows services. We also created an online portal for queries and for ease to access to our application. We in this phase assembled and worked on each bit of the project individually, coded it, wrote and implemented logics and changes and after that we proceeded to the next phase which was the most crucial phase that is the testing phase.

2.5 Testing and Development Phase

In this phase we did testing of our code and logics taking different test cases, on different devices, on different internet connection speeds. We basically rechecked in this phase if everything each and every component was in place and performing its required job or not. Here we also assembled our bits and made them work together. Also we checked if any further developments or bug fixes were needed. In this phase we basically did the overhauling of the whole application.

Chapter -3

PLATFORMS USED:

(3.1) .NET FRAMEWORK

.NET Framework is a software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library named Framework Class Library (FCL) and provides language interoperability (each language can use code written in other languages) across several programming languages. Programs written for .NET Framework execute in a software environment (in contrast to a hardware environment) named Common Language Runtime (CLR), an application virtual machine that provides services such as security, memory management, and exception handling. (As such, computer code written using .NET Framework is called "managed code".) FCL and CLR together constitute .NET Framework.

FCL provides user interface, data access, database connectivity, cryptography, web application development, numeric algorithms, and network communications. Programmers produce software by combining their source code with .NET Framework and other libraries. The framework is intended to be used by most new applications created for the Windows platform. Microsoft also produces an integrated development environment largely for .NET software called Visual Studio.

.NET Framework began as proprietary software, although the firm worked to standardize the software stack almost immediately, even before its first release. Despite the standardization efforts, developers, mainly those in the free and open-source software communities, expressed their unease with the selected terms and the prospects of any free and open-source implementation, especially regarding software patents. Since then, Microsoft has changed .NET development to more closely follow a contemporary model of a community-developed software project, including issuing an update to its patent promising to address the concerns.

Basic Features of .NET Framework

a) Interoperability

Computer systems commonly require interaction between newer and older applications, .NET Framework provides means to access functions implemented in newer and older programs that execute outside .NET environment. Access to Component Object Model (COM) components is provided in

System.Runtime.InteropServices *and* *System.EnterpriseServices*

b) Language Independence

.NET Framework introduces a Common Type System (CTS) that defines all possible data types and programming constructs supported by CLR and how they may or may not interact with each other conforming to CLI specification. Because of this feature, .NET Framework supports the exchange of types and object instances between libraries and applications written using any conforming .NET language.

c) Type Safety

CTS and the CLR used in .NET Framework also enforce type safety. This prevents ill-defined casts, wrong method invocations, and memory size issues when accessing an object. This also makes most CLI languages statically typed (with or without type inference). However, starting with .NET Framework 4.0, the Dynamic Language Runtime extended the CLR, allowing dynamically typed languages to be implemented atop the CLI.

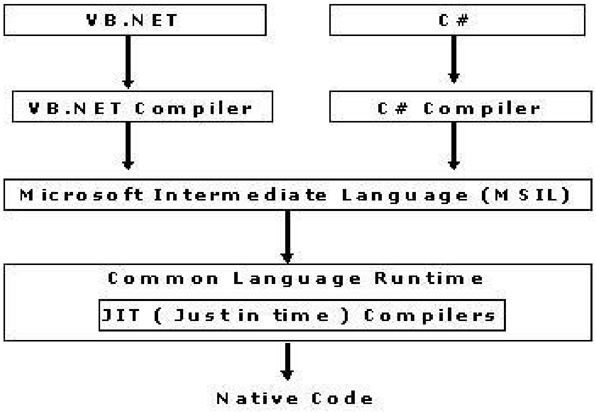
d) Memory Management

.NET Framework includes a garbage collector (GC) which runs periodically, on a separate thread from the application's thread, that enumerates all the unusable objects and reclaims the memory allocated to them. It is a non-deterministic, compacting, mark-and-sweep garbage collector. GC runs only when a set amount of memory has been used or there is enough pressure for memory on the system. Since it is not guaranteed when the conditions to reclaim memory are reached, GC runs are non-deterministic.

(3.1.1) COMPONENTS OF .NET

1. Common Language Runtime (CLR)

.Net Framework provides runtime environment called **Common Language Runtime** (CLR).It provides an environment to run all the .Net Programs. The code which runs under the CLR is called as **Managed Code**. Programmers need not to worry on managing the memory if the programs are running under the CLR as it provides memory management and thread management. Programmatically, when our program needs memory, CLR allocates the memory for scope and de-allocates the memory if the scope is completed. Language Compilers (e.g. C#, VB.Net, J#) will convert the Code/Program to **Microsoft Intermediate Language** (MSIL) intern this will be converted to **Native Code** by CLR. See the below Fig.


VB.NET
C#
VB.NET Compiler
C# Compiler
Microsoft Intermediate Language (MSIL)
Common Language Runtime
JIT (Just in time) Compilers
Native Code

There are currently over 15 language compilers being built by Microsoft and other companies also producing the code that will execute under CLR.

2. .Net Framework Class Library (FCL)

This is also called as Base Class Library and it is common for all types of applications i.e. the way you access the Library Classes and Methods in VB.NET will be the same in C#, and it is common for all other languages in .NET.

The following are different types of applications that can make use of .net class library.

1. Windows Application.
2. Console Application
3. Web Application.
4. XML Web Services.
5. Windows Services.

In short, developers just need to import the BCL in their language code and use its predefined methods and properties to implement common and complex functions like reading and writing to file, graphic rendering, database interaction, and XML document manipulation.

3. Common Type System (CTS)

It describes set of data types that can be used in different .Net languages in common. (i.e), CTS ensures that objects written in different .Net languages can interact with each other.

For Communicating between programs written in any .NET complaint language, the types have to be compatible on the basic level. The common type system supports two general categories of types:

Value types:

Value types directly contain their data, and instances of value types are either allocated on the stack or allocated inline in a structure. Value types can be built-in (implemented by the runtime), user-defined, or enumerations.

Reference types:

Reference types store a reference to the value's memory address, and are allocated on the heap. Reference types can be self-describing types, pointer types, or interface types. The type of a reference type can be determined from values of self-describing types. Self-describing types are further split into arrays and class types. The class types are user-defined classes, boxed value types, and delegates.

4. Common Language Specification (CLS)

It is a sub set of CTS and it specifies a set of rules that needs to be adhered or satisfied by all language compilers targeting CLR. It helps in cross language inheritance and cross language debugging.

Common language specification Rules:
It describes the minimal and complete set of features to produce code that can be hosted by CLR. It ensures that products of compilers will work properly in .NET environment.

Sample Rules:

1. Representation of text strings

2. Internal representation of enumerations

3. Definition of static members and this is a subset of the CTS which all .NET languages are expected to support.4. Microsoft has defined CLS which are nothing but guidelines that language to follow so that it can communicate with other .NET languages in a seamless manner.

(3.2) MICROSOFT VISUAL STUDIO

An Integrated Development Environment (IDE) is software that facilitates application development. In the context of .NET-based applications, Visual Studio is the most commonly used IDE. Some of the key features included are:

- Single IDE for all .NET applications. Therefore no switching required to other IDEs for developing .NET applications
- Single .NET solution for an application which has been built on code written in multiple languages
- Code editor supporting Intellisense and code refactoring
- Compilation from within the environment based on defined configuration options

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft that uses the .NET Framework. It is used to develop computer programs for Microsoft Windows, as well as web sites, web apps, web services and mobile apps. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silverlight. It can produce both native code and managed code.

(3.2.1) INTEGRATED DEVELOPMENT ENVIROMENT

An **integrated development environment** (**IDE**) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger. Most modern IDEs have intelligent code completion. Some IDEs, such as NetBeans and Eclipse, contain a compiler, interpreter, or both; others, such as Sharp Develop and Lazarus, do not. The boundary between an integrated development environment and other parts of the broader *software development environment* is not well-defined. Sometimes a version control system, or various tools to simplify the construction of a Graphical User Interface (GUI), are integrated. Many modern IDEs also have a class browser, an object browser, and a class hierarchy diagram, for use in object-oriented software development.

(3.3) C# PROGRAMMING

C# is one of many .NET programming languages. It is object-oriented and allows you to build reusable components for a wide variety of application types. Microsoft introduced C# on June 26th, 2000 and it became a v1.0 product on Feb 13th 2002.

C# is an evolution of the C and C++ family of languages. However, it borrows features from other programming languages, such as Delphi and Java. If you look at the most basic syntax of both C# and Java, the code looks very similar, but then again, the code looks a lot like C++ too, which is intentional. Developers often ask questions about why C# supports certain features or works in a certain way. The answer is often rooted in it’s C++ heritage. Recent language features, such as Language Integrated Query (LINQ) and Asynchronous Programming (Async) are not necessarily unique to C#, but do add to it’s uniqueness.

During the development of the .NET Framework, the class libraries were originally written using a managed code compiler system called *Simple Managed C* (SMC). In January 1999, Anders Hejlsberg formed a team to build a new language at the time called Cool, which stood for "C-like Object Oriented Language".Microsoft had considered keeping the name "Cool" as the final name of the language, but chose not to do so for trademark reasons. By the time the .NET project was publicly announced at the July 2000 Professional Developers Conference, the language had been renamed C#, and the class libraries and ASP.NET runtime had been ported to C#.

C#'s principal designer and lead architect at Microsoft is Anders Hejlsberg, who was previously involved with the design of Turbo Pascal, Embarcadero Delphi (formerly CodeGear Delphi, Inprise Delphi and Borland Delphi), and Visual J++. In interviews and technical papers he has stated that flawsin most major programming languages (e.g. C++,Java ,Delphi, and Smalltalk) drove the fundamentals of the Common Language Runtime (CLR), which, in turn, drove the design of the C# language itself.

(3.4) STRUCTURED QUERY LANGUAGE (SQL)

Structured Query Language is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).

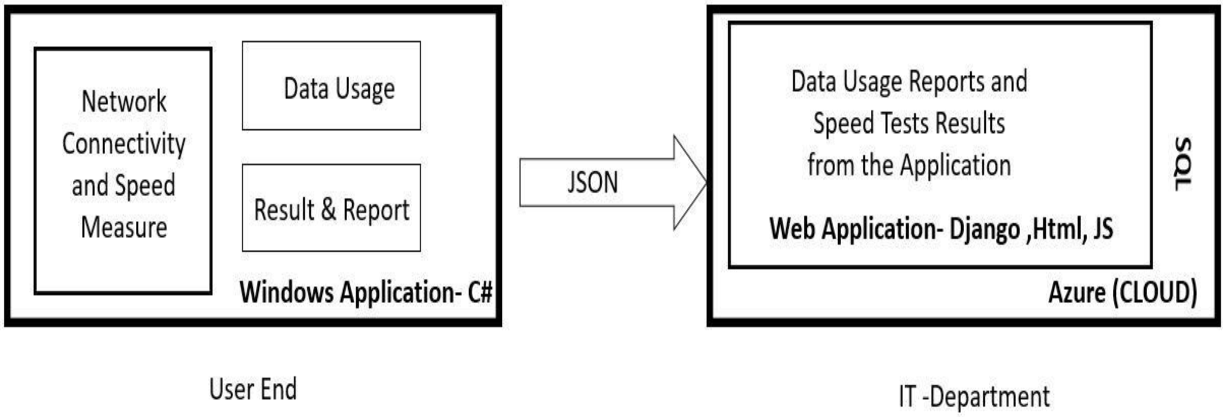
Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language, and data control language. The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SQL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements.

SQL was one of the first commercial languages for Edgar F. Codd's relational model, as described in his influential 1970 paper, "A Relational Model of Data for Large Shared Data Banks. Despite not entirely adhering to the relational model as described by Codd, it became the most widely used database language.

SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987.[Since then, the standard has been revised to include a larger set of features. Despite the existence of such standards, most SQL code is not completely portable among different database systems without adjustments.

Chapter – 4

Block Architecture:


Network Connectivity and Speed Measure
Data Usage
Result & Report
Windows Application- C#
JSON
Data Usage Reports and Speed Tests Results from the Application
Web Application- Django ,Html, JS
SQL
Azure (CLOUD)
User End
IT -Department

Designing and coding:

Backend ar.js:

```
/* CHANGELISTS */

#changelist {
   position: relative;
   width: 100%;
}

#changelist table {
   width: 100%;
}

.change-list .hiddenfields { display:none; }

.change-list .filtered table {
   border-right: none;
}

.change-list .filtered {
   min-height: 400px;
}

.change-list .filtered .results, .change-list .filtered .paginator,
.filtered #toolbar, .filtered div.xfull {
   margin-right: 280px;
   width: auto;
}

.change-list .filtered table tbody th {
   padding-right: 1em;
}

#changelist-form .results {
  overflow-x: auto;
}

#changelist .toplinks {
   border-bottom: 1px solid #ddd;
```

```
}

#changelist .paginator {
   color: #666;
   border-bottom: 1px solid #eee;
   background: #fff;
   overflow: hidden;
}

/* CHANGELIST TABLES */

#changelist table thead th {
   padding: 0;
   white-space: nowrap;
   vertical-align: middle;
}

#changelist table thead th.action-checkbox-column {
   width: 1.5em;
   text-align: center;
}

#changelist table tbody td.action-checkbox {
   text-align: center;
}

#changelist table tfoot {
   color: #666;
}

/* TOOLBAR */

#changelist #toolbar {
   padding: 8px 10px;
   margin-bottom: 15px;
   border-top: 1px solid #eee;
   border-bottom: 1px solid #eee;
   background: #f8f8f8;
   color: #666;
}

#changelist #toolbar form input {
   border-radius: 4px;
   font-size: 14px;
   padding: 5px;
   color: #333;
```

```
}

#changelist #toolbar form #searchbar {
   height: 19px;
   border: 1px solid #ccc;
   padding: 2px 5px;
   margin: 0;
   vertical-align: top;
   font-size: 13px;
}

#changelist #toolbar form #searchbar:focus {
   border-color: #999;
}

#changelist #toolbar form input[type="submit"] {
   border: 1px solid #ccc;
   padding: 2px 10px;
   margin: 0;
   vertical-align: middle;
   background: #fff;
   box-shadow: 0 -15px 20px -10px rgba(0, 0, 0, 0.15) inset;
   cursor: pointer;
   color: #333;
}

#changelist #toolbar form input[type="submit"]:focus,
#changelist #toolbar form input[type="submit"]:hover {
   border-color: #999;
}

#changelist #changelist-search img {
   vertical-align: middle;
   margin-right: 4px;
}

/* FILTER COLUMN */

#changelist-filter {
   position: absolute;
   top: 0;
   right: 0;
   z-index: 1000;
   width: 240px;
   background: #f8f8f8;
   border-left: none;
```

```
    margin: 0;
}

#changelist-filter h2 {
    font-size: 14px;
    text-transform: uppercase;
    letter-spacing: 0.5px;
    padding: 5px 15px;
    margin-bottom: 12px;
    border-bottom: none;
}

#changelist-filter h3 {
    font-weight: 400;
    font-size: 14px;
    padding: 0 15px;
    margin-bottom: 10px;
}

#changelist-filter ul {
    margin: 5px 0;
    padding: 0 15px 15px;
    border-bottom: 1px solid #eaeaea;
}

#changelist-filter ul:last-child {
    border-bottom: none;
    padding-bottom: none;
}

#changelist-filter li {
    list-style-type: none;
    margin-left: 0;
    padding-left: 0;
}

#changelist-filter a {
    display: block;
    color: #999;
}

#changelist-filter li.selected {
    border-left: 5px solid #eaeaea;
    padding-left: 10px;
    margin-left: -15px;
}
```

```
#changelist-filter li.selected a {
   color: #5b80b2;
}

#changelist-filter a:focus, #changelist-filter a:hover,
#changelist-filter li.selected a:focus,
#changelist-filter li.selected a:hover {
   color: #036;
}

/* DATE DRILLDOWN */

.change-list ul.toplinks {
   display: block;
   float: left;
   padding: 0;
   margin: 0;
   width: 100%;
}

.change-list ul.toplinks li {
   padding: 3px 6px;
   font-weight: bold;
   list-style-type: none;
   display: inline-block;
}

.change-list ul.toplinks .date-back a {
   color: #999;
}

.change-list ul.toplinks .date-back a:focus,
.change-list ul.toplinks .date-back a:hover {
   color: #036;
}

/* PAGINATOR */

.paginator {
   font-size: 13px;
   padding-top: 10px;
   padding-bottom: 10px;
   line-height: 22px;
   margin: 0;
   border-top: 1px solid #ddd;
```

```
}

.paginator a:link, .paginator a:visited {
   padding: 2px 6px;
   background: #79aec8;
   text-decoration: none;
   color: #fff;
}

.paginator a.showall {
   padding: 0;
   border: none;
   background: none;
   color: #5b80b2;
}

.paginator a.showall:focus, .paginator a.showall:hover {
   background: none;
   color: #036;
}

.paginator .end {
   margin-right: 6px;
}

.paginator .this-page {
   padding: 2px 6px;
   font-weight: bold;
   font-size: 13px;
   vertical-align: top;
}

.paginator a:focus, .paginator a:hover {
   color: white;
   background: #036;
}

/* ACTIONS */

.filtered .actions {
   margin-right: 280px;
   border-right: none;
}

#changelist table input {
   margin: 0;
```

```
    vertical-align: baseline;
}

#changelist table tbody tr.selected {
    background-color: #FFFFCC;
}

#changelist .actions {
    padding: 10px;
    background: #fff;
    border-top: none;
    border-bottom: none;
    line-height: 24px;
    color: #999;
}

#changelist .actions.selected {
    background: #fffccf;
    border-top: 1px solid #fffee8;
    border-bottom: 1px solid #edecd6;
}

#changelist .actions span.all,
#changelist .actions span.action-counter,
#changelist .actions span.clear,
#changelist .actions span.question {
    font-size: 13px;
    margin: 0 0.5em;
    display: none;
}

#changelist .actions:last-child {
    border-bottom: none;
}

#changelist .actions select {
    vertical-align: top;
    height: 24px;
    background: none;
    color: #000;
    border: 1px solid #ccc;
    border-radius: 4px;
    font-size: 14px;
    padding: 0 0 0 4px;
    margin: 0;
    margin-left: 10px;
```

```
}

#changelist .actions select:focus {
   border-color: #999;
}

#changelist .actions label {
   display: inline-block;
   vertical-align: middle;
   font-size: 13px;
}

#changelist .actions .button {
   font-size: 13px;
   border: 1px solid #ccc;
   border-radius: 4px;
   background: #fff;
   box-shadow: 0 -15px 20px -10px rgba(0, 0, 0, 0.15) inset;
   cursor: pointer;
   height: 24px;
   line-height: 1;
   padding: 4px 8px;
   margin: 0;
   color: #333;
}

#changelist .actions .button:focus, #changelist .actions .button:hover {
   border-color: #999;
}
```

Manage.py

```
#!/usr/bin/env python
import os
import sys

if __name__ == "__main__":
   os.environ.setdefault("DJANGO_SETTINGS_MODULE", "service.settings")
   try:
      from django.core.management import execute_from_command_line
   except ImportError:
      # The above import may fail for some other reason. Ensure that the
      # issue is really that Django is missing to avoid masking other
```

```
        # exceptions on Python 2.
        try:
            import django
        except ImportError:
            raise ImportError(
                "Couldn't import Django. Are you sure it's installed and "
                "available on your PYTHONPATH environment variable? Did you "
                "forget to activate a virtual environment?"
            )
        raise
    execute_from_command_line(sys.argv)
```

Backend GUI:

```
<!DOCTYPE html>

<html class="html" lang="en-US">

<head>



<script type="text/javascript">

  if(typeof Muse == "undefined") window.Muse = {}; window.Muse.assets = {"required":["jquery-1.8.3.min.js", "museutils.js", "jquery.watch.js", "index.css"], "outOfDate":[]};

</script>



<meta http-equiv="Content-type" content="text/html;charset=UTF-8"/>

<meta name="generator" content="2015.0.0.309"/>

<title>Home</title>

<!-- CSS -->

<link rel="stylesheet" type="text/css" href="css/site_global.css?4052507572"/>

<link rel="stylesheet" type="text/css" href="css/index.css?3998301328" id="pagesheet"/>

<!-- Other scripts -->

<script type="text/javascript">

document.documentElement.className += ' js';
```

```
</script>

</head>

<body>


<!--HTML Widget code-->


<div id="fb-root"></div>

<script>

(function(d, s, id) {

varjs, fjs = d.getElementsByTagName(s)[0];

  if (d.getElementById(id)) return;

js = d.createElement(s); js.id = id;

js.src = "//connect.facebook.net/en_US/all.js#xfbml=1";

fjs.parentNode.insertBefore(js, fjs);

}(document, 'script', 'facebook-jssdk'));

</script>




<div class="clearfix" id="page"><!-- column -->

<div class="position_content" id="page_position_content">

<div class="browser_widthcolelem" id="u76-bw">

<div id="u76"><!-- group -->

<div class="clearfix" id="u76_align_to_page">

<a class="nonblocknontext Button ButtonSelected rounded-corners clearfixgrpelem" id="buttonu181"
href="index.html"><!-- container box --><img class="grpelem" id="u182-4" alt="HOME" width="106"
height="19" src="images/u182-4-a.png"/><!-- rasterized frame --></a>
```

```
<a class="nonblocknontext Button rounded-corners clearfixgrpelem" id="buttonu206" href="links.html"><!-- container box --><img class="grpelem" id="u207" alt="LINKS" src="images/blank.gif"/><!-- state-based BG images --></a>

<img class="grpelem" id="u172-4" alt="NAP - IT DEPARTMENT LOGIN" width="381" height="77" src="images/u172-4.png"/><!-- rasterized frame -->

<a class="nonblocknontext Button rounded-corners clearfixgrpelem" id="buttonu183" href="about-us.html"><!-- container box --><img class="grpelem" id="u184" alt="ABOUT US" src="images/blank.gif"/><!-- state-based BG images --></a>

<a class="nonblocknontext Button rounded-corners clearfixgrpelem" id="buttonu186" href="contact-us.html"><!-- container box --><img class="grpelem" id="u187" alt="CONTACT US" src="images/blank.gif"/><!-- state-based BG images --></a>

</div>

</div>

</div>

<div class="clearfixcolelem" id="pu188"><!-- group -->

<div class="clip_framegrpelem" id="u188"><!-- image -->

<img class="block" id="u188_img" src="images/india_post_logosvg.png" alt="" width="189" height="100"/>

</div>

<div class="clip_framegrpelem" id="u78"><!-- image -->

<img class="block" id="u78_img" src="images/computer-network.jpg" alt="" width="437" height="277"/>

</div>

</div>

<div class="clearfixcolelem" id="pu361"><!-- group -->

<div class="pointer_cursorclearfixgrpelem" id="u361"><!-- group -->

<a class="block" href="http://127.0.0.1:8000/admin/"></a>

<a class="nonblocknontextgrpelem" id="u363-4" href="http://127.0.0.1:8000/admin/"><!-- rasterized frame --><img id="u363-4_img" alt="LOGIN" width="77" height="17" src="images/u363-4.png"/></a>

</div>

<div class="clip_framegrpelem" id="u278"><!-- image -->
```

```
<img class="block" id="u278_img" src="images/smart-india-hackathon.jpg" alt="" width="176" height="128"/>

</div>

</div>

<div class="browser_widthcolelem" id="u210-bw">

<div id="u210"><!-- group -->

<div class="clearfix" id="u210_align_to_page">

<img class="grpelem" id="u364-4" alt="#MadeInIndia" width="219" height="22" src="images/u364-4.png"/><!-- rasterized frame -->

<div class="grpelem" id="u365"><!-- custom html -->


<div class="fb-like" data-href="http://www.facebook.com/PostOffice.IN/" data-send="false" data-width="291" data-show-faces="false" data-colorscheme="light" data-layout="standard" data-action="like"></div>


</div>

<div class="grpelem" id="u346"><!-- custom html -->


<a href="https://twitter.com/https://twitter.com/indiapostoffice?lang=en" class="twitter-follow-button" data-lang="en" data-show-screen-name="false" data-size="medium"></a>


</div>

</div>

</div>

</div>

<div class="verticalspacer"></div>

<img class="colelem" id="u90-5" alt="© 2017 Smart India Hackathon" width="219" height="22" src="images/u90-5.png"/><!-- rasterized frame -->

</div>
```

```
</div>

<div class="preload_images">

<img class="preload" src="images/u207-r.png" alt=""/>

<img class="preload" src="images/u184-r.png" alt=""/>

<img class="preload" src="images/u187-r.png" alt=""/>

</div>

<!-- JS includes -->

<script type="text/javascript">

  if (document.location.protocol != 'https:') document.write('\x3Cscript
src="http://musecdn.businesscatalyst.com/scripts/4.0/jquery-1.8.3.min.js"
type="text/javascript">\x3C/script>');

</script>

<script type="text/javascript">

window.jQuery || document.write('\x3Cscript src="scripts/jquery-1.8.3.min.js"
type="text/javascript">\x3C/script>');

</script>

<script src="scripts/museutils.js?183364071" type="text/javascript"></script>

<script src="scripts/jquery.watch.js?71412426" type="text/javascript"></script>

<!-- Other scripts -->

<script type="text/javascript">

  $(document).ready(function() { try {

(function(){var a={},b=function(a){if(a.match(/^rgb/))return
a=a.replace(/\s+/g,"").match(/([\d\,]+)/gi)[0].split(","),(parseInt(a[0])<<16)+(parseInt(a[1])<<8)+parseInt(
a[2]);if(a.match(/^\#/))return parseInt(a.substr(1),16);return
0};(function(){$('link[type="text/css"]').each(function(){var
b=($(this).attr("href")||"").match(/\/?css\/([\w\-
]+\.css)\?(\d+)/);b&&b[1]&&b[2]&&(a[b[1]]=b[2])})})();(function(){$("body").append('<div
class="version" style="display:none; width:1px; height:1px;"></div>');

for(var c=$(".version"),d=0;d<Muse.assets.required.length;){var
f=Muse.assets.required[d],g=f.match(/([\w\-
\.]+)\.(\w+)$/),k=g&&g[1]?g[1]:null,g=g&&g[2]?g[2]:null;switch(g.toLowerCase()){case
"css":k=k.replace(/\W/gi,"_").replace(/^([^a-z])/gi,"_$1");c.addClass(k);var
g=b(c.css("color")),h=b(c.css("background-
color"));g!=0||h!=0?(Muse.assets.required.splice(d,1),"undefined"!=typeof
a[f]&&(g!=a[f]>>>24||h!=(a[f]&16777215))&&Muse.assets.outOfDate.push(f)):d++;c.removeClass(k);bre
ak;case "js":k.match(/^jquery-[\d\.]+/gi)&&

typeof $!="undefined"?Muse.assets.required.splice(d,1):d++;break;default:throw Error("Unsupported
file type: "+g);}}c.remove();if(Muse.assets.outOfDate.length||Muse.assets.required.length)c="Some
files on the server may be missing or incorrect. Clear browser cache and try again. If the problem
persists please contact website
author.",(d=location&&location.search&&location.search.match&&location.search.match(/muse_debug
/gi))&&Muse.assets.outOfDate.length&&(c+="\nOut of date:
"+Muse.assets.outOfDate.join(",")),d&&Muse.assets.required.length&&(c+="\nMissing:
"+Muse.assets.required.join(",")),alert(c)})()})();

/* body */

Muse.Utils.transformMarkupToFixBrowserProblemsPreInit();/* body */

Muse.Utils.prepHyperlinks(true);/* body */

Muse.Utils.resizeHeight()/* resize height */

Muse.Utils.fullPage('#page');/* 100% height page */

Muse.Utils.showWidgetsWhenReady();/* body */

Muse.Utils.transformMarkupToFixBrowserProblems();/* body */

} catch(e) { if (e && 'function' == typeofe.notify) e.notify(); else Muse.Assert.fail('Error calling selector
function:' + e); }});

</script>


<!--HTML Widget code-->


<script>!function(d,s,id){var
js,fjs=d.getElementsByTagName(s)[0];if(!d.getElementById(id)){js=d.createElement(s);js.id=id;js.src="htt
ps://platform.twitter.com/widgets.js";fjs.parentNode.insertBefore(js,fjs);}}(document,"script","twitter-
wjs");</script>


</body>

</html>
```

Conclusion

With the fulfilment of this project we intend to build a market level product which is easy and ready to use. Also our efforts were to learn new and multiple technologies for enhancing our skillset and also for a more holistic approach in our application. Any further suggestions or changes will be incorporated as per the need and time during the ever going maintenance purposes. We hope and aspire that this application would simply the interaction problem and issues and would ease out the diagnostics for each and every one. Also we hope that using the data from the services . Application help to ease out our life so with this PC application we hope to make life's simpler and a concept as tricky as data monitoring for a lay man becomes more approachable and feasible.

References

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- https://www.youtube.com/watch?v=41qgdwd3zAg&list=PLS1QulWo1RIaJECMeUT4LFwJ-ghgoSH6n