**Project Summary - Server Health Monitoring App**

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**Introduction :**

Server health is a very important component when it comes to running and executing servers. However, the current methods used to monitor the health of multiple servers are fairly inefficient and time consuming. Hence, we developed an app which allows you to monitor the health of multiple servers at once, from a remote location, making the entire process easier and more efficient. After around a month of constant building and tweaking, we were able to come out with an optimal application.

**Working:**

Our application takes in the IP address of a remote server and monitors its health i.e. CPU usage, Disk Usage and Network Usage. We will be storing all these details in a database and returning it to the user whenever he needs to access this information.

**Objectives:**

* To allow users to keep a constant watch over their server conditions.
* To prevent server downtime and system errors
* To ensure optimal performance of a server.

**Overall Description:**

**Functionality :**

* Login/Registration page allowing individual users to maintain accounts wherein,they can check the health of the existing servers as well as register new servers into the database
* For added security,the user’s private key for their server will be encrypted for automated login
* Predictive Analysis using Machine Learning will be used to give the user a detailed analysis of their remote server’s health.

**Platform :**

1. Backend development based on FLASK application library in Python.
2. Front-End Development based on React.js in JavaScript.

**Constraints,Assumptions and Dependencies:**

Database Structure will be assumed as follows:

* Database will be created using 3 different types of tables:
* **User table**:Contains all the users.
* **Server Table**: Contains all the servers of each user.This will be unique to each user.
* **Health Data Table**: Contains the health details of each server. This will be unique to each server.

**Dependencies:**

This website will be initially made to monitor only Linux Operating System based remote servers.

**Features**:

Monitors:

* CPU utilization,
* Memory utilization
* Bytes and packets sent and received to the remote server(net I/O counters).
* Predictive Analysis of data collected from the remote server.
* Database Encryption

**Specific Requirements**:

* We will work on using psutil to create a python program that monitors the health of a server. Then using a Flask Application we connect the python program to the database containing the IP address of the servers that exist.
* Built-in Visualizations to comprehensively monitor server hardware health and allow the user to easily identify when server usage reaches critical thresholds.