Website Monitoring Software as A Service Using NodeJS, MySQL & Django

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Abstract **- Digitalisation is taking over the world with a rapid speed and each individual is getting more dependent on the internet with each passing day. One can get every solution, knowledge, idea over the web easily. But this dependency over the internet makes it even more powerful. And with great power comes great responsibility. We all have noticed once or a while those certain websites crash when a large number of users click at once. This can happen with any web server on the internet. But the catch is, the user does not know this in the real time so that he/she can mend their website and host it again. This leads to site crashes for a longer time. We are trying to eradicate this problem by designing a dashboard which will notify the host about the crash of their website so that they can check for the problem and resolve in less time. With the help of our software, the host will be the first to know if their site is going down and can fix it without letting his customers know. Website Monitoring Saas will deal with the server response of one's website. The software basically sends a HTTP request to the server, if the server responds back, it means it is working just fine. While when we will not get the response back it means the server is not working properly and then we will notify the user about the odds through the mode they have selected. Initially we have only two modes which are through the emails and the other one is through the phone texts. With the help of our software the user can also keep track of their servers performance. We are providing the user a dashboard where they can check the previous performances of their server and sites on a weekly, monthly, or yearly basis. The software is user friendly because most of the work is being done in the back thread. While the user interface only consists of user authentication and monitoring of websites. A user can monitor multiple sites from one dashboard so that it will be easiest for them to check on all their sites at one time.**

I.INTRODUCTION

Website Monitoring SaaS is software that will help the hosting of various web servers and sites to test on the server. One can also specify which PORT on their server we should look for (e.g. PORT 80, PORT 443). One can specify the interval between each test performed by our web application, (eg check my website every 5 minutes.). In the event that your server goes down and we are unable to access it, we will notify the user immediately using the method they have chosen (e.g., email, text). We look it up in many places before informing the user to avoid GOOD LIES. Also, they can see all performance reports in their account dashboard in the backend, our software sends a GET request to the server. The server then processes the request, gives a response, and turn off the process when it detects the connection. Our software sends a HTTP GET request to the server. HTTP represents the Hyper Text Transfer Protocol and is used to process requests and responses over the Internet. HTTP requires data transfer from one point to another over a network. Transferring resources takes place using TCP (Transmission Control Protocol) [1]. In overlooking the web page, TCP controls the channels between your browser and the server of the client [2]. TCP is used to manage different kinds of internet connections when a computer or smart phone wants to send something to the other device. Once the TCP connection is made, the client sends a HTTP GET request to the server of the web page to find the web page to be displayed. After the server sends the response, it closes the TCP connection. When try you open a website in the browser again, or when your browser automatically requests something from the server, a new connection opens following the same process described in the line above. GET requests are the only type of HTTP client I can call. After the user has typed the URL into our software, they will also extract the http section and determine which network protocol name to use. Now the user knows the local IP address. It then starts the server connection to the address, using the HTTP protocols as defined. It will start the GET request on

the server that contains the administrator IP address and voluntarily upload the data. In addition, we will notify the user with the help of node mailer. Nodemailer is a zero-dependent Nodejs, designed to send emails. Its key features include the independence of the platform. How to use the node mailer:

- Enter the module module into this code using the requirement ('nodemailer')[3].
- Use the demaema.createTransport () function to build a carrier to send mail. Contains a service name and authentication details (username and password).
- Announce dynamic mail details containing the sender and recipient email, subject and content of this email.
- Use the mailTransporter.sendMail () function to send an email from sender to recipient. If sending a message fails or contains an error, then it will display an error message otherwise sending the message successfully.

II.SERVER MONITORING: A LITERATURE REVIEWSELECTING A TEMPLATE

This research was conducted to get all the main points that are needed to establish the objective of this project, which for us is 'Website/server surveillance solution'. This service is essentially called for in the B2B market of SaaS. There is a lack of different choices existing in the current market room, and they do not also have comprehensive functions available in them.

We used several high-level programs languages to construct the core of all the performances, for instance, Python, JavaScript with many prominent libraries. Python was utilized on the backend side, webapp's core was developed with a very popular as well as extensive collection which is known as Django. JavaScript collections such as NodeJS were additionally utilized on a few performances. Concerning the front end of the application, it primarily includes HTML, CSS as well as JS, which operates on top of Django. These were the names of the few innovations that have been utilized for growth purposes. As the application regularly checks if the web servers of all the users are down or not, an intensive web server would certainly be needed to hold it. This webapp will be powered by EX42-NVME Web server which works on a high- performance Quad-Core CPU by Intel ® (i7- 6700) with the tried and tested “Skylake” design and also 64 GB DDR4 RAM, this model is geared up with 2 512 GB NVMe SSDs. Linux would be made use of as the os of the web server, as Linux was utilized on the advancement servers also. Multiple APIs were also used during the procedure, specially the ones for informing the customer when their server dropped. Protocols such as SMTP are used in the software to make the users aware about the downtime through their emails. Basic python modules were used to make this in runtime. Function like Whatsapp alerts are also provided in the function, this feature was achieved through Twilio’s API, which makes things a lot more easier. Telegram's API was also used to inform the individuals who subscribed for it. TwiML API by Twilio was also used in the process to make calls to the customers who opted in to get informed through phone calls.For further advancements in this project, More research has to be conducted in order to determine the complete scope which is not yet discussed in this literature. A module name celery was the primary driver for this webapp. It gives a very flexible approach to scheduling tasks in large quantities while giving operations with the tools called for to keep such a system. It works with real time handling and tasks organization as well. Celery is also backed up by a good community where people are trying to make it a better product, so it was a good fit for this webapp. In the backend, it runs on redis, “an in-memory data structure store, used as a distributed, in-memory key–value database” that could also be called a message broker, this plays a big role in the production. It makes good use of the resources given in the server which makes it the efficient way to approach this problem as well. This service would be available on pay per month basis with multiple subscriptions involved in the process each with a different set of features. A user should select the service which suits most of their needs, A live demo is also available on the webapp for the users who want to try it before paying anything for the service. A bunch of other python modules were also used in the making which are not discussed here. This website monitoring checker will make very productive use of web owners time and it will make sure they get as little downtime as possible.

III.ANALYSIS OF YOUR WORK

With the help of various Web advancement instruments like HTML CSS, JavaScript, Python, Django, MySQL, CELERY and APIs, the following project has been completed. The front end is received by the client of HTML and the CSS. HTML gives content design and importance by featuring that content, for example Headings, Sections, or Pictures. CSS is an Introduction language made to style the presence of substance— utilizing, for instance, text styles or tones. JavaScript has been utilized for the coordination of different APIs and it really functions as an extension among the frontend and the backend. It is a book put together programming language utilized both with respect to the customer side and worker side that permits you to make pages intelligent. MySQL is the data set and an open-source social data set administration framework. It is used to store anything from a singular record of information to an entire load of open things for an on the web store. It will contain all the client validation and record of their worker's performance. MySQL is extremely mainstream since it offers progressed highlights and dependability a long way past a regular freeware project. Effective organizations, for example, Verizon, Netflix, and Twitter depend on MySQL information bases to control their organizations. Notwithstanding being free, another extremely engaging part of MySQL is its open-source nature. There are numerous favorable circumstances Of MySQL over other information bases. Like,

1. MySQL is globally popular for being the most secure and reliable informational index organization system used in standard web applications like WordPress, Drupal, Joomla, Facebook and Twitter. The data security and Support for esteem based setting up that go with the new type of MySQL, can massively benefit any Business especially if it is an internet business that incorporates progressive money moves.
2. MySQL offers unrivaled adaptability empower the organization of significantly embedded applications using a more unobtrusive impression even in colossal circulation places that stack terabytes of data. On-demand versatility is the star highlight of MySQL This open-source plan licenses complete customization to online business associations with intriguing informational index laborer necessities.
3. MySQL features an unquestionable storing engine structure that urges system heads to Plan the MySQL data base laborer for wonderful execution. Whether or not it is an online business webpage that gets 1,000,000 inquiries each and consistently or a high-speed esteem based taking care of structure, MySQL is planned to meet even the most mentioning applications while ensuring ideal speed full- text documents and special memory stores for improved execution. Aside from this we have utilized Celery which is an assignment line usage for Python Web applications used to non-concurrently execute Work outside the HTTP request response cycle. Celery is a usage of the undertaking line idea. Learn more in the web improvement section or view the chapter-by-chapter guide for all subjects. Significant division of the work examination has been done in 2 Sections. The initial segment comprises of the fundamental UI which will contain the client verification utilizing the email and the secret word, essentially, we are giving the client a different dashboard where they can screen the advancement and the issue of their worker over a period. We are likewise offering a Google hint in component for the accommodation of clients. The subsequent part contains the backend where we have different back string things going on. At whatever point the client enters a site URL, we need to check the URL in the given range of time to check it is working. We will send a solicitation to the worker and on the off chance that we get the response, that is acceptable. While we do not get a reaction, we will advise the client on the given methods for correspondence like email or telephone number. Other than that, we need to save all the chances for the client to see and investigate later. There are a few ports on which we will send and accepting reactions from. We are monitoring the worker reaction time also to check the presentation of the worker.

IV.CONCLUSION

Website Monitoring SaaS provides a platform for all the web server hosts and website owners to check the performance of their website and also keep track of the server's performance. We are trying to eradicate this problem by designing a dashboard which will notify the host about the crash of their website so that they can check for the problem and resolve in less time. With the help of our software, the host will be the first

to know if their site is going down and can fix it without letting his customers know. At the end it is all about notifying the host as their server goes down so that they can check for the problem and resolve the same in less time.

V.FUTURE SCOPE

There are not a whole lot of downtime checkers in the market, and the features and user interface present in the pre-existing ones are not that great. In future iterations, we can add some amazing features such as ping monitoring, data analytics with custom user demographics, server speed optimization with DOM objects and a few more, which will make the product stand in the current market circumstances. We would like to include machine learning to the scope of this project in the future that can make predictions based on the data that is being collected about how often your site is supposed to go down in the coming days and what are the steps that users need to take to make sure the server keeps up and running. Another calculation which depends on 3-Level cloud engineering incorporates shopper, service supplier and the resource provider. This calculation is helpful from both the client and the supplier of the administration since it has a powerful timetable redistribution which shows better asset usage. The primary objective of this paper is to show greatest usage on both customers. Furthermore, worker side which is gotten to in the cloud Climate. This calculation likewise improves the pace of proficiency. The prerequisites of client and supplier of administration are completely fulfilled in this calculation since it follows the proficient booking approach and furthermore based upon the need reassignment. Furthermore, new improvements will be made for the admin level dashboard, so that moderators and managers can take all the decisions that are required. Apart from this, there are a lot of normal bug fixes that need to be pushed in the future updates of the web app.

REFERENCES

These are the list of all the external references mentioned in this project study:

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