International Journal of Interdisciplinary Innovative Research &Development (IJIIRD)
ISSN: 2456-236X
Vol. **05** Issue **02** | **2021**

Building and React Application, Deploying and Managing It Through Azure

Mr. Akshay Kumar Mishra

MCA Scholar, School of CS & IT, Dept. of MCA, JAIN(Deemed-to-be) University, Bangalore

ABSTRACT

In our advance era, everything is automated and digitalized. Things are not physically available as much as they are available on the web. In today's world, cloud computing is one such advancement which has made our lives and business easier than before. Azure is a public cloud computing platform—with solutions including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) that can be used for services such as analytics, virtual computing, storage, networking, and much more. For my paper, I am using platform as a service (PaaS) offering of Azure that is Azure App service along with other Azure services such as Azure storage Account and Azure database for MySQL Server. This feature of Azure App Service gives application a platform which is scalable and allow the usage of cross-platform coding such as Node.js.

Keywords: Azure, PaaS, azure app service, azure storage, Serverless, react, Node.js.

1. INTRODUCTION

1.1 Azure

Azure Serverless computing enables developers to build applications faster by eliminating the need for them to manage infrastructure. With serverless applications, the cloud service provider automatically provisions, scales and manages the infrastructure required to run the code.

1.2 Azure app service

Azure App Service is an HTTP-based service for hosting web applications, REST APIs, and mobile back ends. You can develop in your favorite language, be it .NET, .NET Core, Java, Ruby, Node.js, PHP, or Python. Applications run and scale with ease on both Windows and Linux-based environments.

1.3 Azure Database for MySQL

It is a relational database service powered by the MySQL community edition. You can use either Single Server or Flexible Server (Preview) to host a MySQL database in Azure. It's a fully managed database as a service offering that can handle mission-critical workloads with predictable performance and dynamic scalability.

1.4 Azure storage account

An Azure storage account contains all of your Azure Storage data objects: blobs, file shares, queues, tables, and disks. The storage account provides a unique namespace for your Azure Storage data that's accessible from anywhere in the world over HTTP or HTTPS. Data in your storage account is durable and highly available, secure, and massively scalable.

1.5 Sell Buy Website Application

The website application – SellnBuy is a platform where one can sell their old and used products like gadgets, appliances, furniture etc. for customers to buy. The web app is very simple to use as the user only needs to login themselves with the help of their Gmail id and can contact the seller from the app by clicking on the button 'call seller'. This will trigger and event where the user will be taken to the dialer section on their mobile phone with the phone number of the seller from where the user can make a call to the seller and can proceed with the further discussion about buying any particular item or to get any other product related information.

1.6 Node.js

Node.js is an open-source, cross-platform, back-end JavaScript runtime environment its executes JavaScript code outside a web browser it is a runtime environment used for executing server-side code with higher efficiency and it presents a larger bandwidth to handle large code payloads.

1.7 Auth0

It allows you to add authentication to your React application quickly and to gain access to user profile information. it is a flexible, drop-in solution to add authentication and authorization services to your applications. Organization can avoid the cost, time, and risk that comes with building your own solution to authenticate and authorize users

2. LITERATURE REVIEW

Many insightful information were provided by some authors during the literature review.

[1] This paper covers detailed introduction to Azure Platform, its components, Architecture and provides insights into different aspects of Azure based development especially for those who are interested in adopting Windows Azure within their Enterprise IT landscape. This paper also described the latest development of the azure, that is used the cloud computing platform.

[2] With the increase in the technology worldwide, many organizations have come forward to utilize efficient and faster UI frameworks. Redux is a library that can be used with any UI framework, including React, Angular, Vue and vanilla JS. Even though Redux works with all framework, redux and react are commonly used togather, they are independent of each other.

[3] This paper states that Different cloud platforms are used in different scenarios as per the requirements. Azure provides different set of service platforms where every platform is responsible for providing a specific service to the application developers. Azure provides a combination of all the cloud services that you require to develop, test and deploy your application Architecture

[4] This paper states the azure provides user enterprises with various capabilities to store and process their data in third party data centers. Its main focus is to maximize effectiveness of shared resources Cloud Computing helps companies to avoid upfront infrastructure cost and focus on projects that differentiate their businesses instead of infrastructure. Cloud Computing has now become a highly demanded service or utility due to advantages of high computing power, cheap cost of services, high performance, scalability, accessibility as well as availability

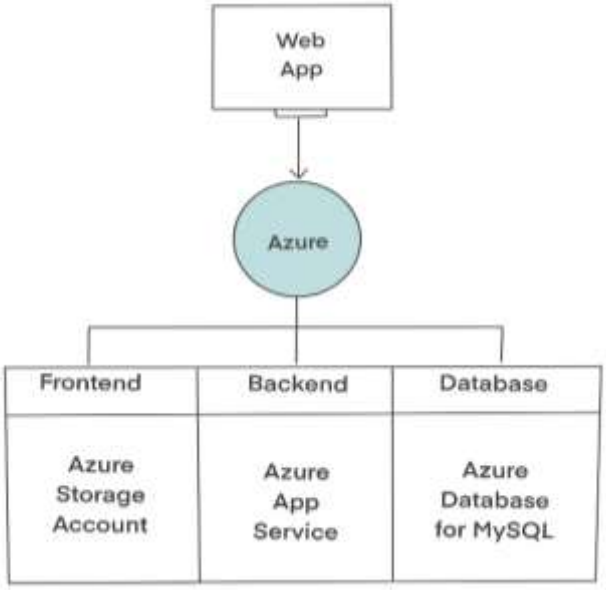

Figure 2.0 Workflow of SellnBuy

3. PROBLEM STATEMENT

Buying and selling of used products when carried out traditionally is very problematic as there is lack of a common platform to deal with the buyer or customers. The process is manual hence it is not only time-consuming but also a big hassle when it comes to contacting the sellers. Carrying out the selling process offline also is very expensive as it needs servers to be bought and space to keep them. Keeping everything offline also means hiring additional staffs to manage the data and its storage. There can be a big problem when things can get out of hand and data become unmanageable as its maintained manually which means its prone to human error and delay in certain process.

4. PROPOSED SOLUTION

The Proposed Method eleminates all the drawbacks of traditional and offline approach as in the proposed system, procedure and process of selling used goods are hosted on Azure platform and integration of a website application is done on the cloud. Azure offer cloud comouting services from which the application SellnBuy is implemented and deployed on cloud using one of the servies offered by Azure which is Azure App Service. It helps deploying our app on cloud which means its makes the process serverless and thereby making the process highly cost-effective and efficient. As Azure features a pay-as-you-go model of service, only the cost incured by our applicaton needs to be payed which insures proper utilization of resource. It also makes the process of data management easier and error-free as the data is now managed by the SQL database service of Azure.

5. PROPOSED MODEL ARCHITECTURE

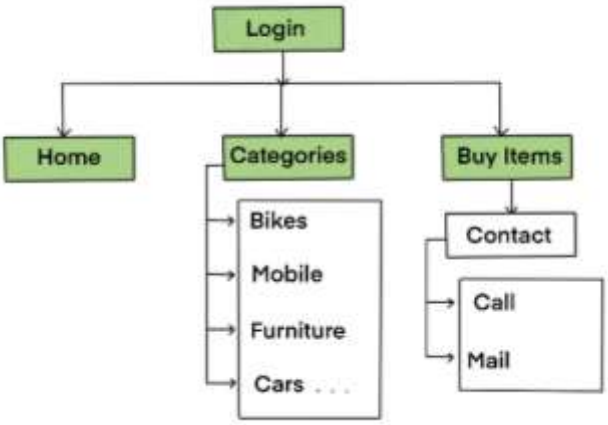

Fig 3.0 Proposed Model Architecture

The app BuynSell is a web application which helps buyers buy second hand used or old products listed by the seller on the app. They can login to the application with the help of their Gmail accounts which insures their authenticity. Once they are logged in successfully, they can browse through different categories of products listed on the app by the seller. After selection of their desired item, they can contact the seller by clicking on the button "Contact Seller" which then takes the buyer to their phone's dialer page from where they can call the seller and discuss further about the items. The application comprises of 4 main elements:

- Login Section - Login section on the app comes when a user is in home page. The user needs to login with the help of their Gmail accounts. Once they are logged in is only when they get an option to call the seller for enquiring about the desired item that they want to buy from SellnBuy.
- Home Page - This is the main entry page of SellnBuy web application. It consists of the different categories of items that the web application offers to the buyers.
- Categories Section - This section contains all the categories of products that the web app has to offer to buyers. This section is further divided into 4 different categories which are:
  - Bikes
  - Mobiles
  - Furniture
  - Cars etc.
- Buying of Items – In order to buy an item, the buyer needs click on 'Contact Seller' button, they are directed to their phone's dialer page with the seller's contact number. They can then make a call and enquire about the product that they are interested in buying. They have two options to contact the seller:
  - Call
  - Mail

6. FLOW CHART

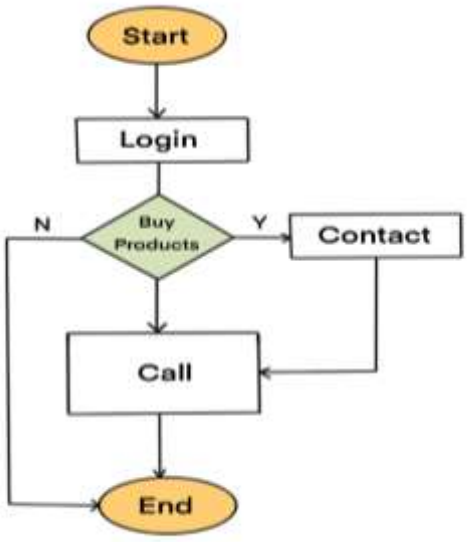

Fig 4.0 System Flow Chart

7. IMPLEMENTATION

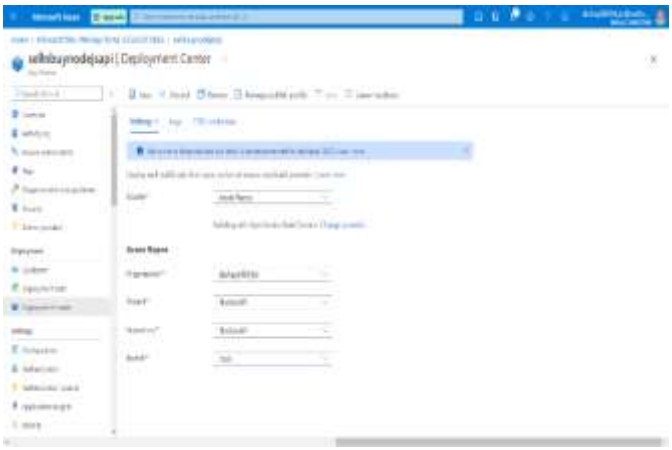

Fig 5.0 Creating Web App (sellnbuy)

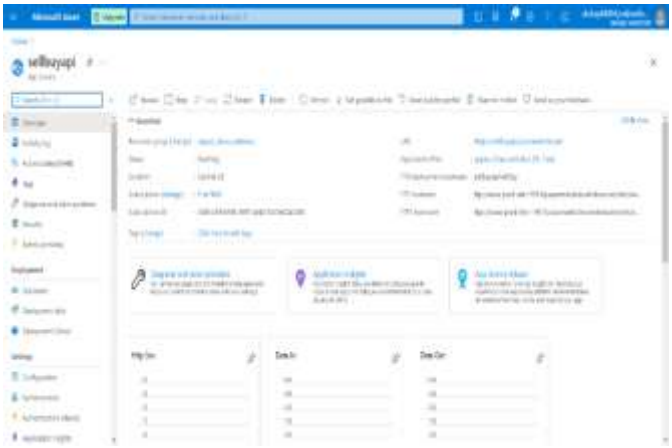

Fig 5.1 Web App overview

Fig 5.2 Uploading Web app code through VScode

8. OUTPUT

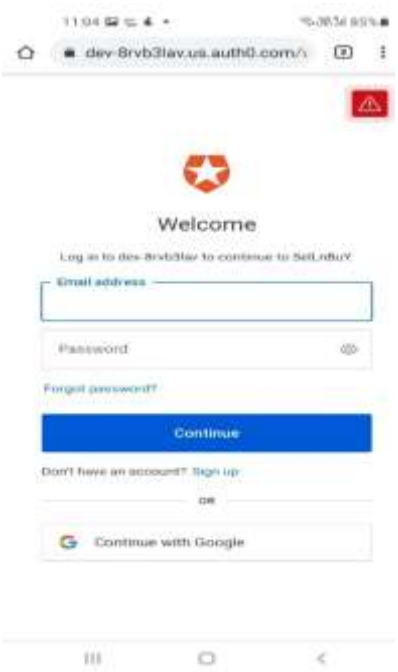

Fig 8.1 Login Page

Fig. 8.3 Category Page

Fig. 8.5 call seller Page

Fig 8.2 Home Page

Fig. 8.4 Products Page

9. CONCLUSION

The paper concludes that cloud is one of the most cost-effective, time saving and efficient way to host a website as it eliminates the need of expensive servers or datacenters to host the web app on. By launching our website on the cloud platform, it not only becomes easy to manage the app with the help of cloud services like Azure's app service, but also manage the data more efficiently with the help of Azure's SQL servers for hosting databases.

10. FUTURE DEVELOPMENT

As of now, the application does not have a seller's portal where people can register themselves as sellers and sell their used products on the app. Currently, they have to contact the admin through phone call in order to get their products listed on the app for selling. In the future development, a seller's portal can be added which would eliminate the above discussed issue.

11. REFERENCES

[1] P. P. Nikam and R. S. Suryawanshi, "Microsoft Windows Azure: Developing Applications for Highly Available Storage of Cloud Servcie," *International Journal of Science and Research (IJSR),* vol. 04, no. 12, p. 4, 2015.

[2] B. S. Đorđević, S. P. Jovanović and V. V. Timčenko, "Cloud Computing in Amazon and Microsoft Azure platofrms: performance and service comparison," *IEEE,* p. 5.

[3] D. Canali, D. Balzarotti and A. Francillion, "The Role of Web Hosting Providers in Detecting Compromised Websites," *International Conference on Workd Wide Web,* 2013.

[4] E. Bocchi and M. Mellia, "Cloud Storage Services Benchmarking: Methodologies and Experimentation," *IEEE 3rd International Conference on Cloud Networking,* 2014.

[5] N. Mangla, J. Singh and M. Singh, "Improving Performance of Web Applications Using Cloud Resources," *ICRITO* , 2014.

[6] P. Mell and T. Grance, "Definition of Cloud Computing Technical Report," *National Institure of Standard and Technology (NIST),* 2009.

[7] R. S. G., "Windows Azure: A Highly Available Storage of Cloud Services through Secured Channels," *International Journal of Advanced Research in Computer Science and Software Engineering,* vol. 04, no. 09, 2014.

[8] T. Zou, R. Bras, M. Salles, A. Demers and J. Gehrke, "ClouDiA: a deployment advisor for public clouds," *Proceedings of the 39th International Conference on Very Large Data Bases,* 2012.

[9] R. P. Padhy, "AZURE PAAS CLOUD: AN OVERVIEW," *INTERNATIONAL JOURNAL OF COMPUTER APPLICATION,* vol. 1, no. 2, 2012.

[10] R. Nara, R. Nimbkar, S. Khairnar and M. Mhatre, "Azure Services Platform," *International Research Journal of Engineering and Technology (IRJET),* vol. 04, no. 02, p. 5, 2017.