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An Effective Novel Approach for Crop Management System Using Android

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Abstract: ***A smartphone app devoted to agriculture serves the main objective of informing farmers about crops, pesticides, insecticides, the economy, and other topics. It offers advice on which crops are most suited to the farmer's region and which should be grown during each season. Additionally, it provides information on various bank loan rates and ongoing government initiatives to support farmers. Before informing the farmer automatically of the illnesses that are likely to impact that crop, the programme will contain a feature that asks them to pick the crop they have planted. Main objective of our project is to educate the farmer on their work. Farmers are getting loss while doing their old forming techniques; those are not suitable for getting profit according to present weather conditions.***
Keywords: Agriculture, Living, Crop, Farmer.

I. INTRODUCTION

New technologies are transforming the agriculture industry, which is very thrilling because it will assist this essential industry in achieving greater farm productivity and profitability. Precision agriculture, the third phase of the modern agricultural revolution (the first being mechanisation and the second being genetic modification), involves applying inputs (what is required) precisely when and where they are needed. It is currently being improved due to the introduction of farm knowledge systems and the availability of enormous quantities of knowledge. In October 2016, the U.S. Department of Agriculture (USDA) reported that precision agriculture technologies increased net returns and operating earnings. In addition, new technologies are increasingly utilised on farms to ensure the environmental sustainability of agricultural products. Nonetheless, there are risks and costs associated with the implementation of these technologies. Enhanced farmer education and training, data sharing, easy access to financial resources, and rising consumer demand for organic food, according to a market study, may make it easier for farmers to adopt sustainable agriculture technology. Because data is only meaningful when applied to crops as numbers or images, the challenge of data retrieval from crops is to provide something coherent and pertinent. Cost and labour savings, increased output or cost savings with less work, and the ability to produce high-quality food in an ecologically responsible manner are all advantages for farms that adopt a technology-driven strategy.

II. LITERATURE SURVEY

In [1], Himesh et al, they concentrate on Agriculture uses Internet of Things (IoTs), Big Data (BD), the digital revolution, and sensor technologies. The introduction concentrates on current BD research projects in agriculture, fundamental BD characteristics, and the most recent developments in BD analytics tools. The sections that follow discuss the significance of BD applications in the agricultural sector and examples of their success in boosting farm productivity, the current state of BD and digital agriculture, the longer-term prospects of BD, and the barriers to BD's deployment in the agricultural sector.

In [2], San Francisco proposed a With the release of its newest product, ALM Intelligence, ALM is forging a new research path. Pacesetter Research offers impartial evaluations of service providers and informed perspectives on demand patterns to assist consumers in evaluating their options and service providers in identifying business opportunities and challenges. The two-sided professional services market is analysed by Pacesetter Research from a platform perspective.

The research papers provide in-depth analysis of each of the segment leaders, who are selected by the pacesetter advisory council, which is comprised of buy-side experts and industry specialists from across all sectors.
In [2017],Diez C proposed a Understanding of digital technologies and applications of sensors, communication networks, unmanned activation systems (USA), artificial intelligence (AI), and other cutting-edge equipment aided the principles of the web in the agricultural sector and the potential of digital technology in India.

III. PROPOSED SYSTEM

Generally in olden days, the farmer doesn't know the Knowledge of which commodities are ideal for a particular region and when they should be grown.
They are oblivious of the fine print regarding the various bank lending rates and, consequently, the current government programmes that assist farmers. If any disease or virus has attacked to the crop the farmer might not be during a position to seek out what sort of disease has occurred thereto crop.
If he didn't found within the initial stage there could also be an opportunity that the entire crop may get damaged. this is often one among the main issues for crop production. And there are not any people to supply suggestions for the farmers. to beat these problems we choose proposed model.
The proposed system gives information associated with crop, financial sector. Additionally to the present it also provides that Before the app alerts the cultivator to any diseases that can impact the sown crop, the farmer must first choose the crop.

The following problems can be resolved by the suggested system:
1) The farmer is unsure of which crops are most suited for this area to plant during certain seasons.
2) They don't understand the nuances of different bank loan interest rates or contemporary political ideologies.
3) Farmers cannot know what sort of disease attacked for the crop.
4) The crop productivity could also be reduced.

Advantages of the Proposed System:
a) The farmers can easily know Farmers can comprehend the fine print of various loan rates and, consequently, the current government policies.
b) Farmers are able to readily select which crops to plant during which seasons and which crops are best adapted to a particular location.
c) Farmers can easily know what sort of virus attacked for the crop.
d) The crop productivity is increased.

In this proposed system for facilitating the implementation we divide the work into two modules. They are User and Admin.

A. User

Farmer is that the main module during this app because user can perform and there are many useful features during this. Farmers do and fallowing traditional farming methods this process will give loss to the farmer. it's the Knowing of useful information to the farmer from our android app.
Here we are proposing the considerably useful features to the farmer like crop diseases season and land and bank loans to the farmers and every one.

B. Admin

Admin is that the main module during this project this module can describe which crop are often effectively grow supported season and land type here admin can add the required information like crop name field type or land type and season to data base. By using the user or farmer can know the knowledge about the crop and season.

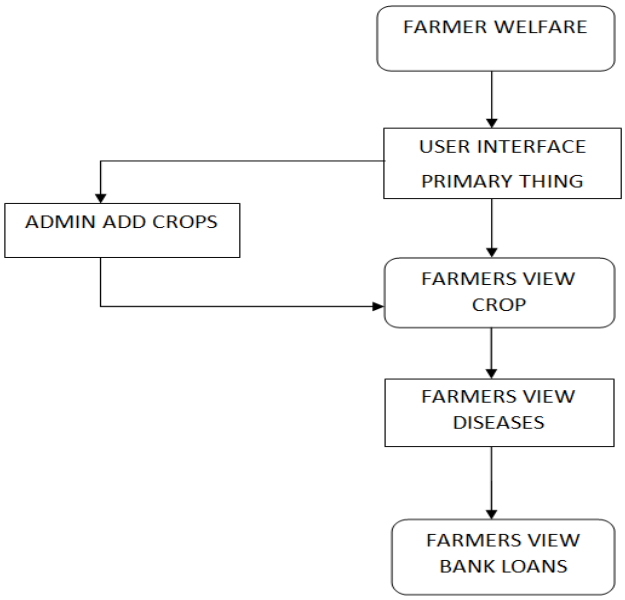


Figure 1: Block diagram of Proposed Work

IV. IMPLEMENTATION

The Android software stack for mobile devices may consist of an operating system, middleware, and essential applications. In 2005, Google Inc. acquired Android Inc., the developer of the software. Android's mobile operating system is supported by its Linux kernel. Google and other members of the Open Handset Alliance worked together to develop and distribute Android.The Android Open Source Project (AOSP) is responsible for the maintenance and development of Android. Android OS is the most widely used operating system in the globe.

The Android SDK contains the necessary resources and APIs for developing Java-based applications for the Android platform. A sizeable Android developer community creates "apps" that extend the capabilities of Android devices. There are currently over 250,000 Android applications.

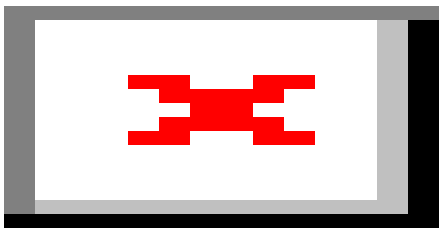


Figure 2: Android Architecture

Linux is supported by the Android operating system, which has a Java programming interface. In addition to its own Java virtual machine (DVM), it offers a tool emulator, debugger, and compiler. The Open Handset Alliance, which is led by Google, develops Android.

Android utilises a unique virtual machine, such as the Dalvik virtual machine. Dalvik utilises unique fragments of code. Therefore, conventional Java bytecode cannot be executed on Android. Android's "dx" utility is capable of converting Java class files into "dex" (Dalvik executable) files. The "aapt" (Android asset packaging tool) programme packages Android applications into.apk files to facilitate development. Google provides Eclipse with Android Development Tools (ADT). After deployment, the ADT automatically converts class files to dex files and generates an apk.

V. RESULTS AND DISCUSSION

With the Help of Android SDK we can develop an app which can be used to farmers for his crops selections based on season, pesticides, bank loans and government schemes.

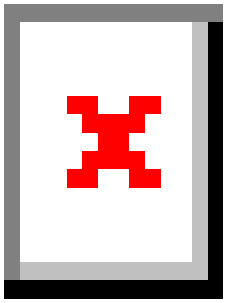


Figure 3:Home Page

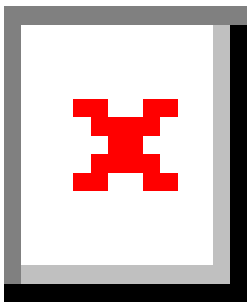


Figure 4: Registration Page

The Farmer can register himself as a user by creating an account with his details like username, password, phone number to access the services.

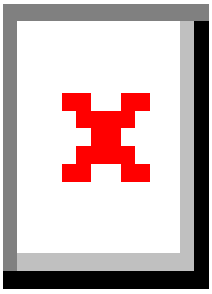


Figure 5: Admin Page

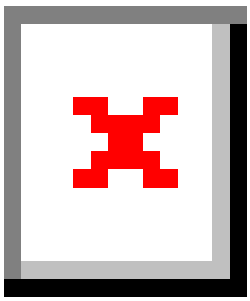
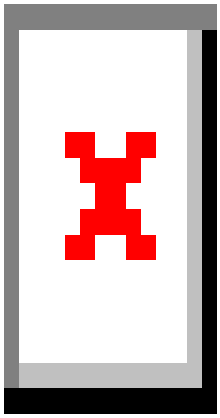


Figure 6: Main Page

In the Figure 5 the Administrator created a page for a adding the crop name, season type and field type.



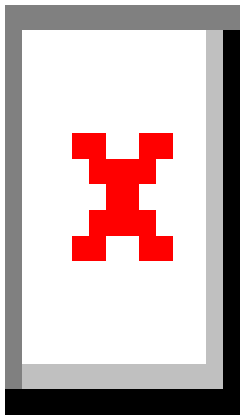
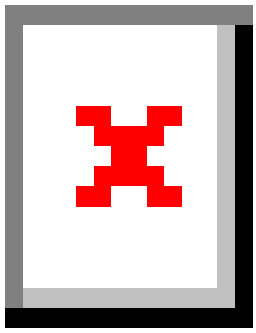


Figure 7: Rice Crop Diseases List Figure 8: Maize Crop Diseases List

In the Figure 7 & 8, we mention the crop disease list of Rice and Maize. This helps for the Farmers and Admin for identifying the crop disease.



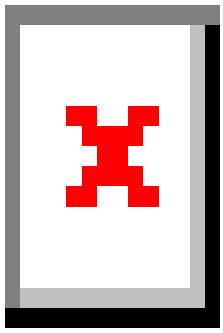


Figure 8: Description of Maize Disease List Figure 9: Farmer Welfare App

In the Figure 7, the total description of the maize disease crop is listed.Along with this we can also display the Farmer Welfare App which gives the information about View crops,bank information etc.

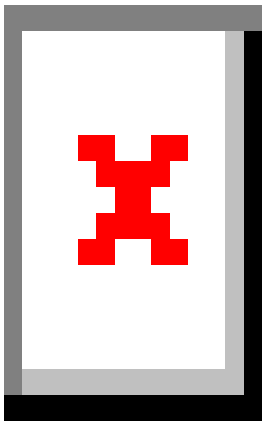


Figure 9: View Crop Details

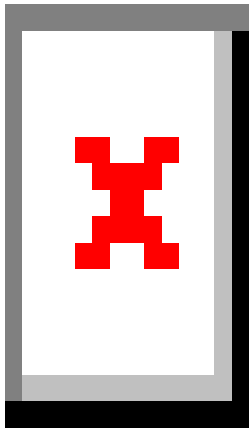


Figure 10: Schemes in Farmer Welfare App

VI. CONCLUSION AND FUTURE ENHANCEMENT

In this project I even have concluded that highlights the need for reliable agricultural data in order to make the best decisions. To handle issues unique to individual farms, an efficient Novel Approach for Crop Management system could coordinate its outputs. This type of cooperative digital support for farmers unites. The time now seems ideal after thirty years of great hopes and failures over the employment of robotics in agriculture. To enhance agricultural income, nevertheless.

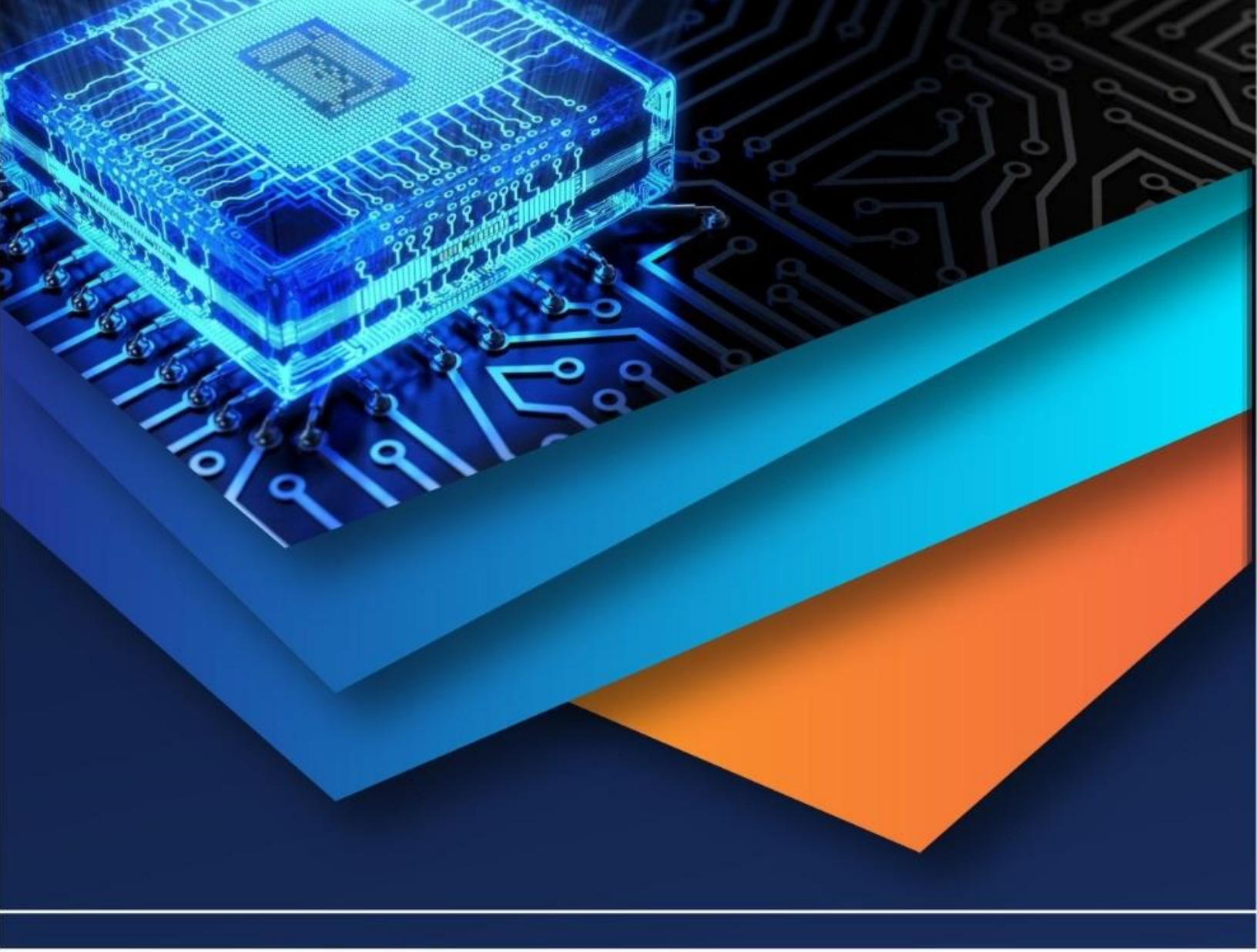
A. Future Enhancement

1) With this project we plan to enable a farmer to step into a replacement reality, where he becomes an actual "node in farming in android".
2) Farming encompasses crops, animals, poultry, fish, and sericulture.
3) A combination of one or more agricultural and cropping enterprises offers higher returns than a single enterprise, especially for small and marginal farmers.
4) The soil and climate of the location
5) The availability of resources such as land, manpower, and capital.

REFERENCES

[1] Himesh, S. Digital revolution and Big Data: A new revolution in agriculture. CAB Rev. 2018, 13, 1-7.
[2] Zhang, Y. The Role of Precision Agriculture. Resource 2019, 19, 9.
[3] Schimmelpfening, D. Farm Profits and Adoption of Precision Agriculture. USDA 2016, 217, 1-46.
[4] Grand View Research, Precision Farming Market Analysis. Estimates and Trend Analysis; Grand View Research Inc.: San Francisco, CA, USA, 2019; pp. 1-58.
[5] Diez, C. HAcia una agriculture intelligent (Towards and intelligent Agriculture). Cuaderno de Campo 2017, 60, 4-11.
[6] Accenture Digital. Digital Agriculture: Improving Profitability.
[7] CEMA. Digital Farming: What Does It Really Mean? Available online: http://www.cem-agri.org/publication/ digital-farming-what-does-it-really-mean (accessed on 17 September 2019).

[8] Nierenberg, D. Agriculture Needs to Attract More Young People. Available online: http://www.gainhelth. Org/Knowledge-center/worlds-farmers-age-new-blood-needed (accessed on 18 September 2019).
[9] European Comission. Generational Renewal in EU Agriculture: Statistical Background; DG Agriculture & Rural Development: Economic analysis of EU agriculture unit: Brussels, Belgium, 2012; pp. 1-10.
[10] Paneva, V. Generational renewal. Available online: https://enrd.ec.europa.eu/enrd-thematic-work/generational-renewal_en (accessed on 28 December 2019).
[11] Alpha Brown. What is IoT in Agriculture? Farmers Aren't Quite Sure Despite $4bn US Opportunity—Report. Available online: https://agfundernews.com/iot-agriculture-farmers-arent-quite-sure-despite-4bn-usopportunity.html (accessed on 28 December 2019).
[12] Gralla, P. Precision Agriculture Yields Higher Profits, Lower Risks. Available online: https://www.hpe. com/us/en/insights/articles/precision-agriculture-yields-higher-profits-lower-risks-1806.html (accessed on 29 December 2019).
[13] Tzounis, A.; Katsoulas, N.; Bartzanas, T.; Kittas, C. Internet of Things in agriculture, recent advances and future challenges. Biosyst. Eng. 2017, 164, 31–48.
[14] Sarni, W.; Mariani, J.; Kaji, J. From Dirt to Data: The Second Green Revolution and IoT. Deloitte insights. Available online: https://www2.deloitte.com/insights/us/en/deloitte-review/issue-18/second-greenrevolution-and-internet-of-things.html#endnote-sup-9 (accessed on 18 September 2019).
[15] Myklevy, M.; Doherty, P.; Makower, J. The New Grand Strategy; St. Martin's Press: New York, NY, USA, 2016; p. 271. Agronomy 2020, 10, 207 18 of 21
[16] Manyica, J.; Chui, M.; Brown, B.; Bughin, J.; Dobbs, R.; Roxburgh, C.; Hung Byers, A. Big Data: The Next Frontier for Innovation, Competition, and Productivity | McKinsey. Available online: https://www.mckinsey. Com/business-functions/mckinsey-digital/our's-insights/big-data-the-next-frontier-for-innovation (accessed on 21 November 2019).
[17] V. S. Bhargavi and S. V. Raju, "Enhancing security in MANETS through trust-aware routing," 2016 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), Chennai, India, 2016, pp. 1940-1943, doi: 10.1109/WiSPNET.2016.7566481.
[18] V. S. Bhargavi, M. Seetha and S. Viswanadharaju, "A hybrid secure routing scheme for MANETS," 2016 International Conference on Emerging Trends in Engineering, Technology and Science (ICETETS), Pudukkottai, India, 2016, pp. 1-5, doi: 10.1109/ICETETS.2016.7602991.
[19] Kunisch, M. Big Data in Agriculture—Perspectives for a Service Organization. Landtechnik 2016, 71, 1–3.
[20] Kamilaris, A.; Kartakoullis, A.; Prenafeta-Boldú, F.X. A review on the practice of big data analysis in agriculture. Comput. Electron. Agric. 2017, 143, 23–37.
[21] Proagrica. How Big Data Will Change Agriculture. Available online: https://proagrica.com/news/how-bigdata-will-change-agriculture/ (accessed on 21 November 2019).
[22] Wolfert, S.; Ge, L.; Verdouw, C.; Bogaardt, M.-J. Big Data in Smart Farming—A review. Agric. Syst. 2017, 153, 69–80.



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