

UGC 19-20

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67/63

Journal of Information and Computational Science

UGC - Care Group - II Certified Journal

ISSN NO: 1548-7741 / web : www.joics.org / E-mail : submitjoics@gmail.com

*Certificate of Publication*

This is to certify that the paper entitled

APPLICATION OF QUICK RESPONSE [QR] CODE FOR DIGITALIZATION OF PLANT TAXONOMY.

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Has been published in

JOURNAL OF INFORMATION AND COMPUTATIONAL SCIENCE, VOLUME 10, ISSUE 1, JANUARY 2020



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# APPLICATION OF QUICK RESPONSE [QR] CODE FOR DIGITALIZATION OF PLANT TAXONOMY.

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## Abstract

In this research work, the proposed application and its backend system, that provides access to plant information i.e. taxonomical classification, its origin, description, habitat and economical importance. Also we integrate a Quick Response (QR) codes for accessing plant information using a smart phone or tablet devices. The QR code was first designed for the automotive industry by Denso Wave in Japan. This code is the type of matrix barcode. QR codes are two-dimensional barcodes that may contain virtually any kind of data, including links to websites, text, videos, etc. The aim and objective of this research paper was to create a system that uses Quick Response (QR) codes to increase knowledge gain by students in the Dada Patil College Campus.

The present investigation has resulted in a number of new findings which have greatly helped in better understanding of the species and its importance. In the present research, the studied plant species and its information attached to the QR code.

**Keywords:** Digitalization, Quick Response code, Taxonomy, Application, Digital Information.

## Introduction

Educational systems around the world are under increasing pressure to use the latest technologies to teach students the knowledge and skills; need in the 21st century. In a rapidly changing knowledge society, integrating techniques at all levels of education is essential. However, even today one of the greatest challenges of techniques in education is lack of quality of Content. We need to create a digital learning culture and environment. E-learning serves this purpose in its various forms such as web-based learning.

Recent advances in digital technology, coupled with rapidly increasing interest in the creation and dissemination of digitized specimen data for use in broad-scale research by



botanists and other organismal scientists, have encouraged the development of a variety of new research opportunities in the botanical sciences.

### **Aims and Objectives**

The main aims and objectives of taxonomy for digitalization using new techniques these are as follows:

- To attach the plant information to quick response code.
- To visualized plant information through Quick response code

### **The Study Area**

The proposed study area is the Dada Patil Mahavidyalaya Campus Karjat Dist. Ahmednagar covers within 18°33'20.15"N to 18°33'29.34"N latitude and 75°00'21.39"E to 75°00'29.20" E longitude of geographical location. The campus has total covering an area of 77200 Sq. mts. The average height of these from mean sea level is 596 mts. The mean annual rainfall in the study area is 540 mm. About 85 percent rainfall is contributed by south west monsoon from second week of June to September and rest 15 percent is received during non-monsoon months (return monsoon).

## **Material and Methodology**

### **Source of Data-**

The present work was based on primary and secondary sources of data. The primary data will collect through intensive field work. The secondary data collect from various web sites, Published records of the state and central governments include published and unpublished reports of abstracts and other government records. Data of plant species was collect from botanical surveys of India.

### **Primary Data:-**

Actual survey has been done by field visit. Measured and observe the all species which are planted in Dada Patil Mahavidyalaya, campus. I gathered general information about plant species at field. Scheduled data has been collected from information collected from daily newspaper and oral instructions. The photographs of different species were captured by using Nikon D100 Digital SLR camera.

### **Secondary data:-**

The information of plant species collect at local level through various persons. Secondary data such as Census Data, Handbook, Gazetteer, Reports, plant species data has collect from internet and related departments and its websites.

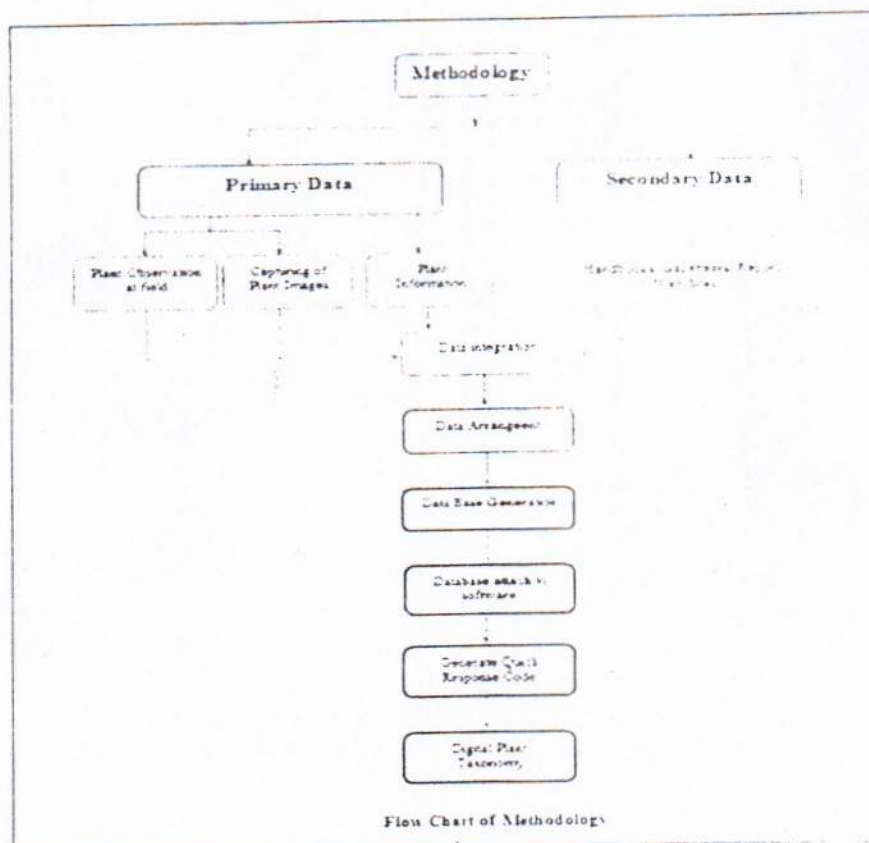
### **Methodology-**

The collected data from different sources was process and represented by employing different techniques. The details regarding the various methods and techniques will be as follows-

Now spatial and non-spatial with primary and secondary data has integrated. The whole data has used as a base information for final analysis. After this Analysis species data arrange in

taxonomical format. These soft copies of taxonomical database provide to software and create web link. Generated link attached to software and generates quick response code of all species. The quick response code is ready to scan. This code we scan with help of Android QR Code Scanner Application.

By using this information complete statistical analysis and prepared various graphs. Finally Digitalization of taxonomy has been done by using all above research methodology.



### Discussion and Analysis:-

The task of inventory the plant diversity of Dada Patil Mahavidyalaya campus was undertaken systematically and intensively year 2018-19 to cover most species flowering and fruiting stages and also to covers most species in various seasons. Field observations made and plants were photographed plant species were identified using regional floras. Herbarium is systematically made up. Plant species are enumerated and arranged as per Angiosperms phylogeny Group III (APG III2009)

### Software Work:-

The integrated database of plant taxonomy is arranged in botanical taxonomical format. These plant species data base has upload in Google drive and create sharable link of plant species database. Shareable link copy into QR code generator software and generate quick response code of plant species.

The various electronic devices can use to scanning QR code. Like Mobile, Tablet etc. Following screen shot shows the process of the work.





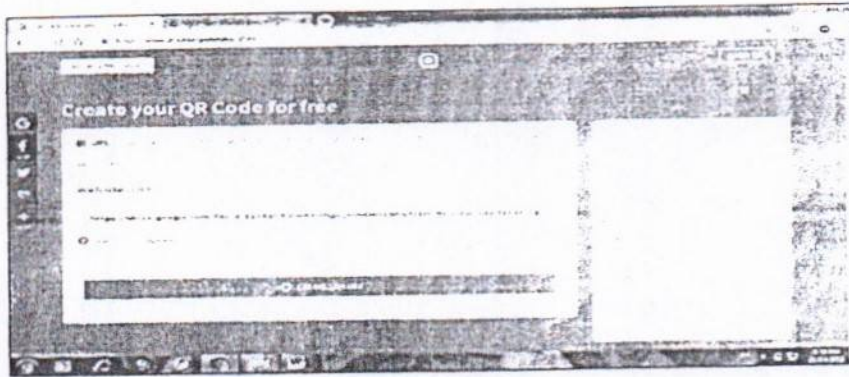


Fig. 1.7, URL paste in QR Code Software

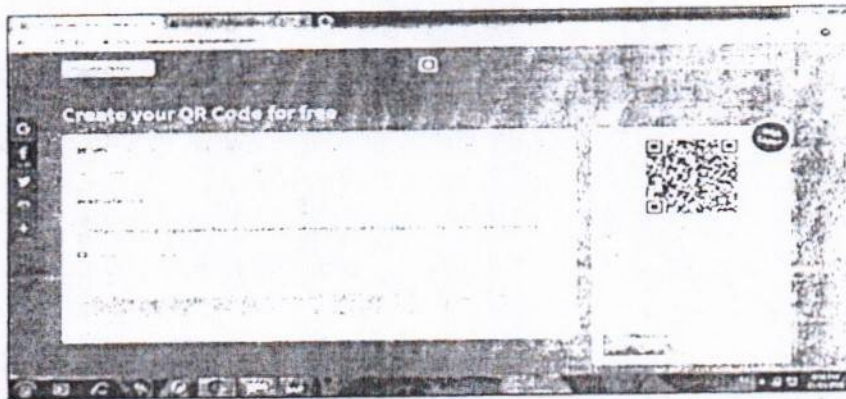


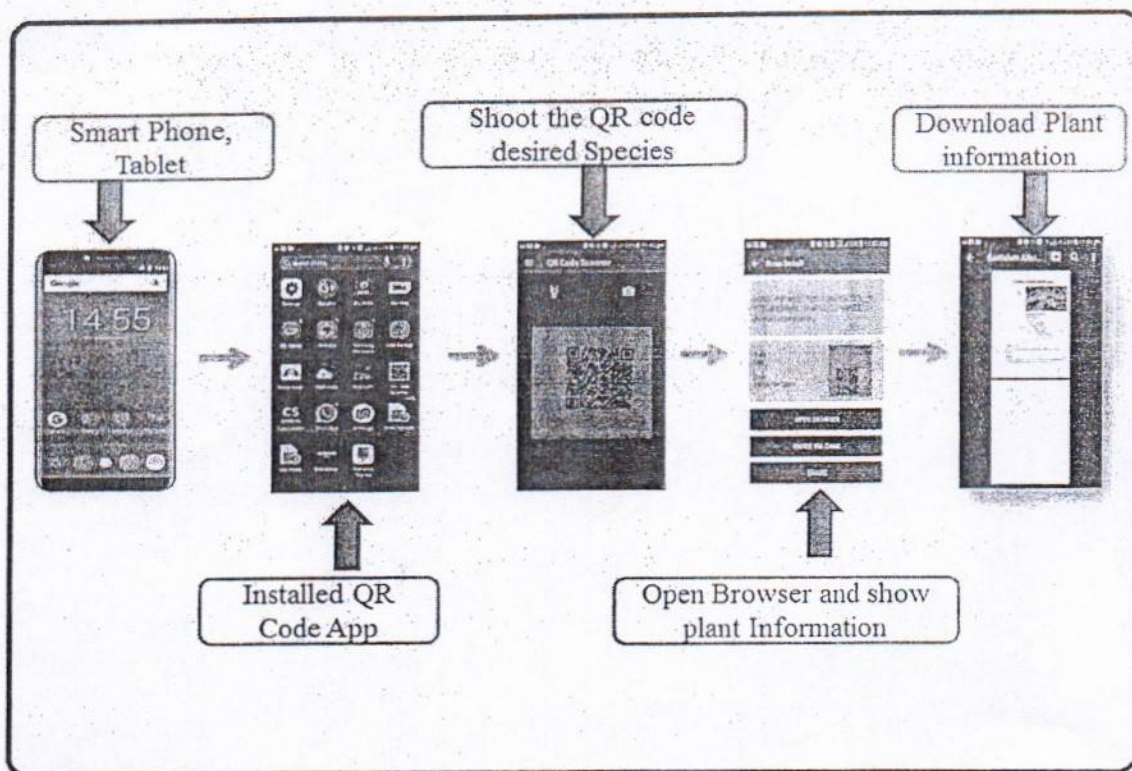
Fig. 1.8 QR Code Generate



Fig. 1.9 QR Code



The following image shows procedure of downloading digital information of plant species.



### Result & Conclusion

Its aim was to reap the benefits that the smartphone can offer without impairing the sensual experience and unmediated learning. This initial attempt to integrate experiential learning and smartphones, however, turned out to be a difficult task. This research paper expand and increase the social shortcomings of traditional and existing navigation systems through mobile devices, such as mobile phones as well as mobile QR Code barcodes, accessed through internet networks. As QR code provides the structural flexibility, they provide huge information to student and researchers about plant species. The whole information of plant species shown by using quick response code digital technique. The QR code can store complex information within a small code. By using the small QR code the student and researcher can download detail information of such plant species but they must have smartphone with installed QR code Scanner application. This fabulous technology is very well suited to enhance the visitor experience in any botanical garden.

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