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A Sub-Structure for Metamorphosis of data into Quick Response Code using Interpreted Language

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Abstract

As we all know the social media is growing rapidly day by day with the time. Each and every person required faster network as well as update/status. Social media has become the prime places for advertisement, activities campaigns and payments in recent years. It provides a platform for the people to get communicated with each other. It identifies that accessing the website, online payment, etc., through QR code or in the form of link is raised with in few years. QR code is common sight now, smartphone penetration that went from 59.01% in 2017 to 78.05% in 2020. And access to high-speed mobile internet increased from 48.8% in 2014 to 62.5% in Jan 2022. In addition to this, internet users have grown by 4% from Jan 2021 to Jan 2022. Here, 92.1% of device ownership belongs to mobile phone users. This research will be focused on transmitting large amounts of images or information faster in the satellite system automatically and transmission will be easier rather than multiple images better a single QR code.

Keywords—social media, metamorphosis, quick response code, satellite, Geolocation, Idiomatic, QR code

Introduction

Now a day's internet has been a part of everyone life, all the websites are keeping in touch with people in the form of social communication networking, it's become the main source for social communication

networks websites to interact with all kind of resources such as videos, photos, activities with each other. Social networking is the grouping of individuals based on their own interests into a specific

group [1]. Accessing the social networking is become more easily in the form of QR code or link. Usage of mobile devices increased as social networking becoming easily. In early days, if a person needs to send money from one place to other, they need to visit nearby banks but now scanning a single QR code, reduces the work as well as completed quickly. Not even in transferring money, accessing a website, sharing a document, booking tickets, etc., which are stored in black and white dots image known as QR code.

As discussed earlier, social networking can be used in the form of updating the status of satellite from the space directly to your social media communications like Gmail, WhatsApp, etc., Where information detected by satellite, whether it is an image or texted form information [2]. Suppose if a satellite detected an asteroid in space, it stores an image in server or website, where it updates the information through your mobile device. As per the situations or work in ground station satellite system, were different people work under different section or department wise with various shifts of day and night under the process of satellite observation, status, control, etc., where each and every person need to know the status of the satellite on off duty

staff [3]. To overcome the anxiety of the staff is the main abstract of paper work.

Problem Statement

First, confirm that you have the correct template for your paper size. This template has been tailored for output on the A4 paper size. If you are using US letter-sized paper, please close this file and download the Microsoft Word, Letter file. A problem is to sending a large amount of information in a single QR code manner directly to mobiles of an off-duty staff members with help of scanner they can easily access the information and updated every time. With the help of QR code transmitting huge number of images through satellite transmission will be more easily and securely. As until now under the satellite ground station system there is no image transmission of QR code in satellite and sending through in the form of QR code from satellite. The existing systems used in the device are basic methods to back up the device with a lot of manual operations. The system does not provide a secure channel for sending data. In the previous system users could not use the camera through the web and also could not transmit photos to the web [4]. QR code is not enabled to access mobile location details incorrectly placed with image via web. The existing system have limitations such slow transfer rate, manual operations, weak security mechanism, and the QR Code for user access is not implemented.

The proposed system procedure can be done in the form of image data. It can be directly installed in the satellite for the conversion of information which specifically stores the images directly to

the official server which can be useful for gathering the information at a server [5]. It can be used for updating the status quickly then the uplink downlink transmission, instead of sending multiple images. The procedure of proposed system is shown in Figure 1.

This can be installed in a ground station for the purpose of just knowing the status or information after receiving from the satellite through the same procedure [6]. The main advantages of proposed systems are quicker transfer rate, effectual stability, customer terminal is reciprocal, accurate security mechanism, and it provides enhanced features such as QR Code Access, Device Lock, Camera, Image Transmission and also tracks the Geolocation of the device with the image.

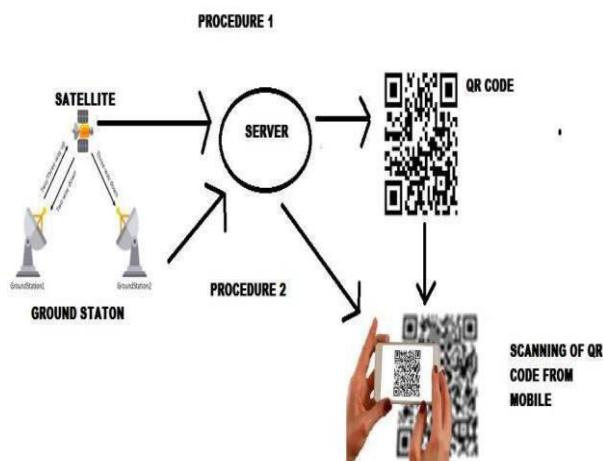


Fig. 1. Procedure of Proposed System

Literature Review

Images can be converted into data and processed through various transmission methods in image processing, videos, audios etc. can also be replaced by images. They are treated as 2D signals to apply robust transmission techniques. Mobile phones are used to make calls and can receive calls over a wide geographical area. People are using mobile phones more and more because of their efficiency, wireless, easy access, user friendly [7]. Advance software can be installed on the mobile. Mobile devices are equipped with a good number of useful applications.

Barcodes contain information about a specific product, but it only has 20 numeric digits, while a QR code can store up to 7089 characters. Storage capacity is estimated based on alpha-numeric byte/binary and kanji/kana input. A QR code has vertical and horizontal dimensions. They are square in shape and their storage capacity is higher compared to bar code. A QR code has information (contains data) on all four corners, while a barcode has data on only one side [8]. There are 40 versions of QR codes and different module configuration. The module represents that decorative QR code in black and white dots. The largest storage capacity is version 40 and the error

correction level is L. The module configuration extends from version 1 (21 x 21) to version 40 (177 x 177). Each character type is counted.

Designing Of QR Code Detection

They are five consecutive steps in QR code detection processing.

- 1) Expressions of Idiomatic
- 2) Exposing the corners harshly.
- 3) Depicts three distinct corners.
- 4) Reveals a fourth corner that is not marked.
- 5) To generate a 2-level image by scanning the code.

Inverse perspective is done through the principle of transformation [9] and it is shown in figure 2.

$$u = \frac{P_1x + P_2x}{P_3 + P_4 + 1} \quad (1)$$

$$v = \frac{P_3x + P_4x}{P_1 + P_2 + 1} \quad (2)$$

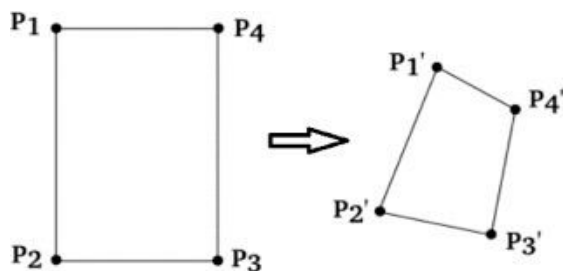


Fig. 2. Inverse perspective transformation

The main three steps of image processing are:

- a) *The threshold of black and white boundaries is defined by*

Histogram.

- b) *Rescale the native pic.*
- c) *Quick Response code clarification and identification for expansion of area.*

Quick Response code is used in various utilities [10]. It can store more items but requires only a small printout area. Traversing speed is relatively high [11].

The features of this code icon are large capacity, small printout size and high-speed scanning. The step-by-step procedure of image processing is shown in figure 3.

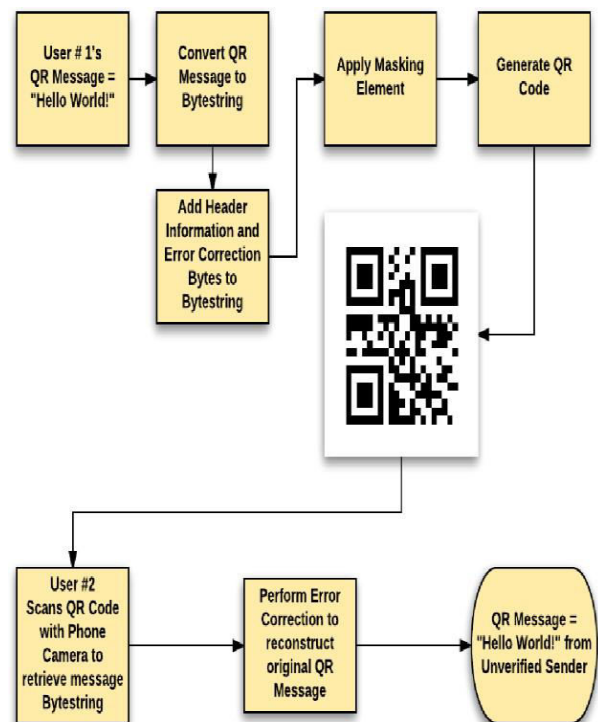


Fig. 3. Procedure of Image processing

The image captured by the camera is converted to binary in the form of a JPEG file. The JPEG image on the server is converted to binary. The binary image is then converted to a QR code on the server and saved [12]. The algorithm for Metamorphosis of Data into Quick Response Code is as follows.

Step 1: Images are detected by the cameras or locating a path with the sensors.

Step 2: Information has been sent to the ground station as well as directly to the server.

Step 3: After receiving by the server then information will be stored in the form of documentary.

Step 4: Through from the ground station or server it will generate QR code and send it directly to the Gmail account.

Step 5: With the help of various scanners or Google lenses, we can scan the QR code or upload the QR code to the scanner.

The following figure 4 shown the flowchart of Metamorphosis of Data into Quick Response Code.

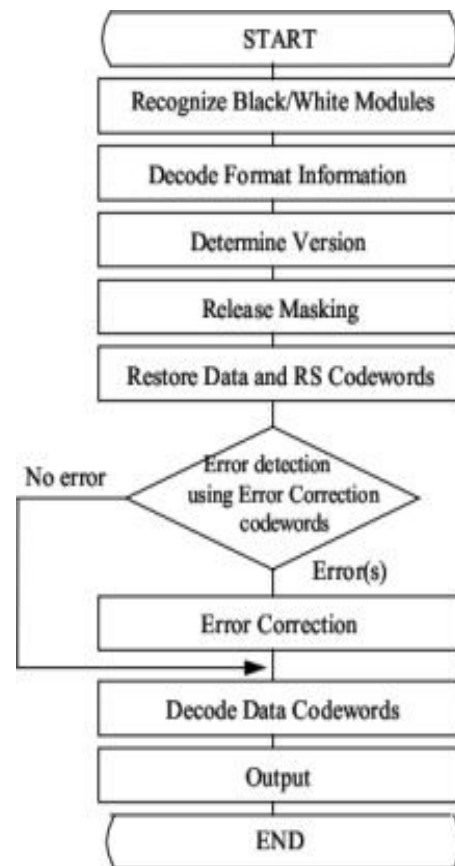


Fig. 4. Procedure for Metamorphosis of data into quick response code

The Image Sharing Technique

As per the procedure mentioned above, the algorithm was done with the computer language python for generating of quick response code and sending it to mail automatically. These have been tested with various formats images, text format, etc., for various formats [13]. The code will help us in generating quick response code and sent it directly to mail. The sample code and its output for transformation of data shown in figure 5.

```
import qrcode
import matplotlib.pyplot as plt
# importing yagmail and its packages
import yagmail
# importing yagmail and its packages
import yagmail
# initiating connection with SMTP server
data="amuragsat-university.mailchimpsites.com";
filename="MY_QR.png";
image = qrcode.make(data);
image.save(filename);
plt.imshow(image,cmap='gray');
yag = yagmail.SMTP("20eg107125@amurag.edu.in", "tejkoneru");
# Adding multiple attachments and mailing them
yag.send("20eg107137@amurag.edu.in", "project", "media", attachments=[MY_QR.png]);
```



Fig. 5. Transformation of data using quick response code

After getting quick response code to your mail, through Google lenses we can scan the image or insert into scanner and it will appear as shown in the below figure 6.

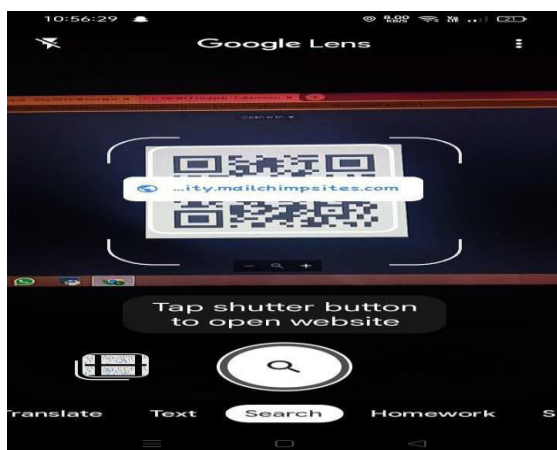


Fig. 6. Scanning the image using Google Lenses

Conclusion

This Research Mainly Focused On Transmitting Large Amounts Of Images Or Information Faster In The Satellite System Automatically And Transmission Will Be Easier Rather Than Multiple Images Better A Single QR Code. The Main Purpose Of This Ideology Is To Reduce The Time For Further Studying The Satellite And Storing Information As Well As Staff Will Be On Update 24/7 With The Status Of The Satellite. Status Will Be Updated Through With The Help Of Social Media With Our Daily Using App Or Website.

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