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Research paper

An efficient audio message transmission using QR-code

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Abstract

Introduction: Temporomandibular joint (TMJ) dysfunction (TMJD) is a group of related disorders of the muscles of mastication. Until now, no research has been conducted with particular attention to intra oral lateral pterygoid release along with conventional therapy.
Methods: The study was performed an experimental study and the samples were recruited in convenient sampling method. 30 patients were selected and divided them into two groups, Group A & B. The measurement of range of maximal mouth opening (MMO) and pain using the NPRS and TMD disability index was observed.
Results: All the outcome measures were analysed at baseline and after 4 weeks of treatment using appropriate statistical test. Level of significance was kept at 95%. Both the groups A and B, p values were <0.001, showing statistically signifacant difference in MMO, NPRS and TMDI score as compared to baseline.
Conclusion: The lateral pterygoid release technique along with ultrasound and conventional therapy is more effective in reducing pain, increasing range of mouth opening and reducing functional disability of TMJD than conventional therapy and ultrasound alone.

Keywords: *Temporomandibular Joint; Lateral Pterygoid Release Technique; Maximal Mouth Opening.*

1. Introduction

Two-dimensional Quick Response code is a standardized identification generally utilized as a part of numerous applications, for example, fabricating, promoting, retailing and so on. QR code resembles an uproarious structure.
The presence of Quick Response code will be enhanced by inserting a picture into the code. This work planned a strategy where the presence of Quick Response code is made out of outwardly important examples chose by clients. This work influences QR to code from machine read just to a customized frame with human visual satisfying appearance. The picture installing in the QR code isn't a simple undertaking on the grounds that inserted result ought to be decodable by standard disentangling applications and can be connected to any shading picture with full region scope with the same number of as half of us currently owning PDAs, and that numeral emerging consistently, Quick Response Codes have perhaps have a notable outcome upon humanity and specially in helping, show casing and shopper profit to an richness with item data only one output away. Commonly we think about a standardized tag as a gathering for plumb lines; 2D Barcodes or QR Codes are diverse in that way information is put away in the two headings and can be examined plumb else evenly. While a typical 1-D Barcode (EAN/UPC) puts away to 30 numbers, a QR-Barcode can hide away to a gigantic 7,089. It is this monstrous measure of information that empowers connects to such things as recordings, Face book or Twitter pages or a plenty of other site pages.
In today's world, we need security to protect the data from the hackers. Hence encoding image into QR-code is one of the most prominent approach to securely transmit data effectively and efficiently. And dealing with illegal and unauthorized usage of data from the hackers.



Fig. 1: Audio QR Concept.

2. Literature review

In [1] Secure against bit-changed assault, endure more mistakes than expected and recuperate the mystery data when assailant change any piece of shrouded bits. Length of mystery messages is littler.
In [2] The planned mystery concealing plan can convey 24 to 9720 mystery bits into a cover QR code and can't influence intelligibility of QR content Applied just on the esteem included QR standardized identification application By Combining Data Compression procedures and multiplexing technique, increment information limit and gives high information security.
In [3] Author utilize a QR code for secure information transmission yet security can be expanded by packed information in interactive media shape QR Code's utilization in various zones for confirmation and to give security and parcel more are yet to be

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investigated. Sight and sound Transformation Using QR-code not bolstered. Property of SQRC can be utilized as a part of future for vehicle and personality check frameworks.

In [4] Author utilized just dim logo picture for confirmation of proposed conspire. Considerable pressure of recorded seismic information will decrease the cost related with documented capacity. A lessening in the quantity of attractive tapes required to hold every datum set will diminish the cubic feet of atmosphere controlled condition required to house the attractive tapes. Additionally, less tapes and less time will be required to perform intermittent exchanges of chronicled tapes to new tapes.

In [5] Systems and strategies are depicted that incorporate utilizing fast reaction (QR) codes with cell phones for giving intuitive applications and administrations to a client by means of the cell phones. Epitomes utilize a scanner in the cell phone to examine the QR code of a question. The QR code or information of the QR code is exchanged from the cell phone to a particular URL.

In [6] Recording and indexing audio and video conference calls allows topic-based notification, navigation and playback of one or many recordings. An external conferencing system with five internal modules, recording, indexing, management, notification, and playback allows a plurality of meeting participants to record a conference call, and a plurality of subscribers to access, search, and be notified of the occurrence of an event of interest. The system automatically creates contextual or topic based time intervals which are used to immediately notify a subscriber of an event occurrence.

In [7] Data that is an MPEG program stream (PS) read out from a disc is supplied to a PS/TS converter via a variable rate control section. The PS/TS converter converts the PS MPEG data into a transport stream (TS) and transmits it to a presentation device via a 1394 transmission/reception section. Data received by a 1394 transmission/reception section of the presentation device is classified by a DEMUX section. An audio decoder and a video decoder decode the TS MPEG data. D/A converters convert resulting digital data into analog signals and output the analog signals.

3. Proposed system

a) Sender Side Modules:

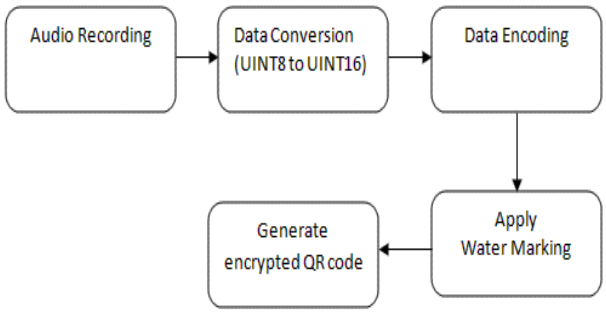


Fig. 2: Sender Side.

Step 1: Input Module: Record

Step 2: Analysis Pre-Processing: Audio File Remove Noise and Clipping and Datatype Encoding i.e Audio Double Data Convert into Integer

Step 3: Data Compression Method: Base-64 Encoding Method Compression Data to Character

Step 4: Character to QR Code Encoding.

Step 5: Watermarking Data QR into Username QR-code using binary into binary image watermarking with DWT.

System works start with Audio recording then that data will be converted into int 16 then after converting the data, data decoding and water marking technique is applied and then QR code is generated.so this we can say like its sender side process.

b) Receiver Side Modules:

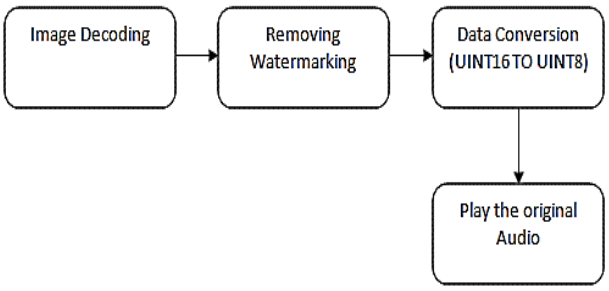


Fig. 3: Receiver Side.

Step 1: Input Module: Read QR-Image

Step 2: Check username is match with sender data

Step 3: Extract watermark QR-image

Step 4: QR-code to Character Converter. Audio integer-8 Data Convert into integer-16

Step 5: Apply Decompression using Base-64 Decoding.

Step 6: Convert Data into Audio and Write as .wav file and play it.

So now, on receiver side first of all image decoding (QR code scanning) after that removing of water marking technique then Data conversion to int 8 from int 16 and lastly audio will be played with same size without any loss of important data. So, this we can say system on receiver side process.

i) Base-64

The "specific arrangement of 64 characters spoke to the 64 put esteems for the base fluctuates between usages. The general system is to pick 64 characters that are the two individuals from a subset basic to most encodings, and furthermore printable. This mix leaves the information probably not going to be changed in travel through data frameworks, for example, email, that were customarily not 8-bit clean. For instance, MIME's Base64 usage utilizes A– Z, a– z, and 0– 9 for the initial 62 esteems. Different varieties share this property yet contrast in the images decided for the last two qualities; an illustration is UTF-7. "

ii) QR-Code

The two-dimensional Quick Response Code is a scanner tag that is in the kind of the Matrix Code. Structure of a QR code

1) Finder Pattern is planned to be utilized to identify the situation of Quick Response Code for Submission to decoder.
2) Presentation space is intended to store information, learning sort and database that is worried in interpretation.
3) Temporal request Pattern is intended to find the directions of the picture for cryptography.
4) Alignment Pattern inside the pictures inside the tilt will be perused effectively by Decoder Application.
5) Data space is used to store learning, QR Code, that will be that the greatest region.
6) Noiseless Region is likewise a section of the announcement destruction the bleached territory that flavors up the Finder Pattern to distinguish rapidly. Parts of the QR Code QR Code is predicated on the Type of the Alignment Pattern is shown inside the Version 2 or later.

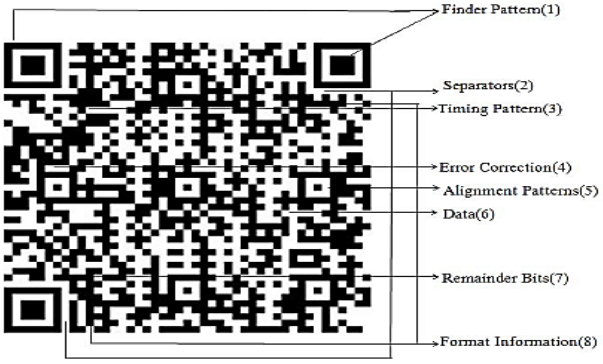


Fig. 4: QR-Code Structure.

iii) DWT

Discrete Wavelet Transform (DWT) based Watermarking Audio watermarking methodologies, that work in a repeat space, take the advantage of sound veiling properties of a human sound-related framework (HAS) to install an infrasonic watermark movement in automated sound. Changing the sound banner from time zone to repeat space empowers a watermarking structure to insert the watermark into perceptually basic portions. This may outfit the structure with an anomalous condition of value, thus, and set out to take away the watermark will end in exhibiting an imperative twisting in one of a kind sound banner devotion. The data hail is starting changed to repeat are a wherever the watermark is embedded. The ensuing banner by then encounters turns around repeat update to get the watermarked hail.

The discovery calculation is performed while not abuse the first sound flag. We tend to beginning deteriorate a watermarked sound flag into 5-level moving edge disintegration. At that point, we fragment the coefficients at the coarsest guess sub-band as in the inserting strategy and compute the normal of each portion of sound flag moving edge coefficients. On the off chance that the mean is bigger than zero, a touch "1" is identified. On the off chance that the mean is lower than zero, a bit "- 1" is identified. This progression is intermittent till every installed bit are recognized. At that point, we have a tendency to unravel the watermark by abuse consistent irregular succession utilized in installing strategy. At last, all identified bits are modified to make a paired picture as a distinguished watermark.

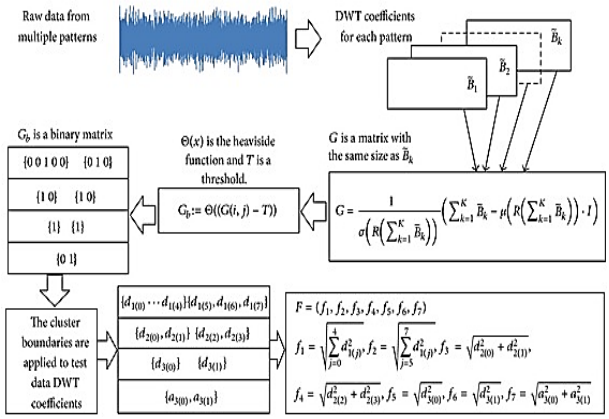


Fig. 5: DWT Levels.

4. Results

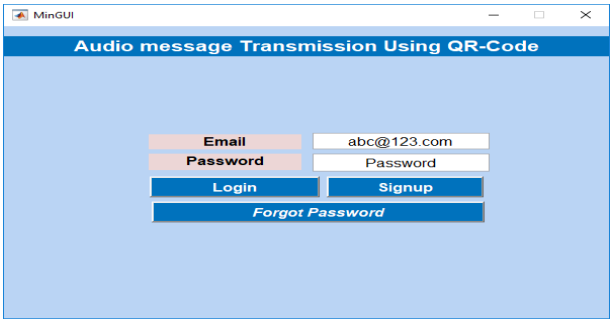


Fig. 6: Login Page.

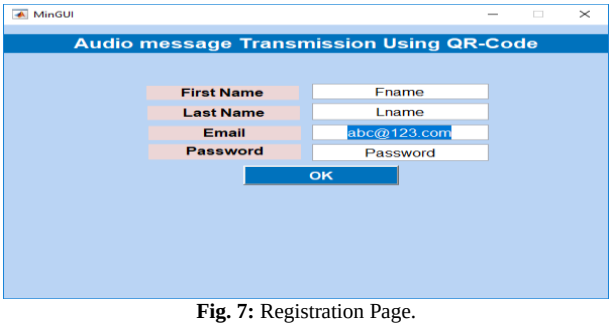


Fig. 7: Registration Page.

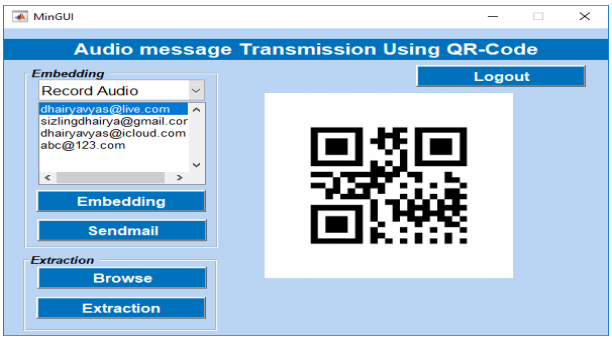


Fig. 8: Audio to QR Encoding.

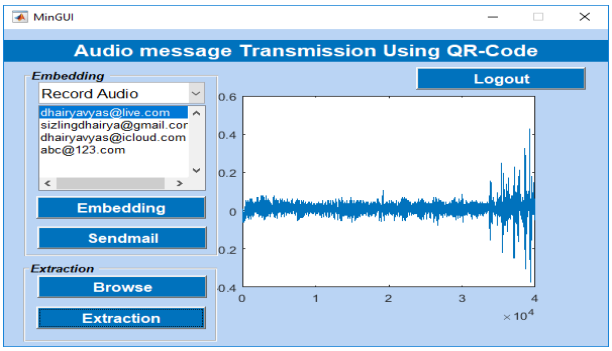


Fig. 9: QR to Audio Decoding.

5. Conclusion

The main goal of our proposed work is try to increase security for Message transfer and store the data into less storage space. So, try to produce new approach for generating QR code from audio. Here we have done compression using DWT & DCT but DWT gives better results and more Compression. And also done text to audio conversation using simple method which generate large amount of text which text is not support to generate QR code. So, need to reduce size of text by using proposed base64 algorithm, so, in future we can generate QR-code of Audio.

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