Mark Certificate Verification System for Directorate of Government Examinations, Tamil Nadu

Mark certificate Verification System incorporate 2D barcode which contains verifiable items in encrypted formats which can be used at places where internet connectivity is not available. This system has provided an easy access to the secured verification services for Government, Public and Private Organizations. Mark Certificate Verification is possible using hand held devices at anytime, anywhere.

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The Directorate of Government Examinations conducts massive board examinations, for which they issue about Eight lakhs of Higher Secondary Course Certificates, Twelve lakhs of Secondary School Leaving Certificates and Fifty thousand Diplomas for Elementary Education every year.

The **National Informatics Centre,** Tamil Nadu State Centre has designed and developed an Online Marks Certificates Verification System to provide easy access to the Secured Verification Services for Government, Public and Private Organizations. The system is set to verify about twenty lakhs certificates per annum.

OPEN STANDARD ENCRYPTED ONLINE 2D BARCODE AND ENCRYPTED OFFLINE BARCODE

The Mark Certificates have been re-designed incorporating open standard encrypted 2D barcode to facilitate online verification of certificates. 2D QR Bar code Encoder component is used to create the encrypted and encoded 2D QR Bar code images for printing on all the mark certificates for generation and verification anywhere in the country. This component is flexible enough to be used by any State and for generating any certificate. All the options such as barcode encoding and decoding are open to the Application Service Provider (ASP) for integration in their software while printing the mark certificate. "Generic 2D Bar Code Creator for any Marks Certificate" is registered in egov app store for horizontal and vertical replication.
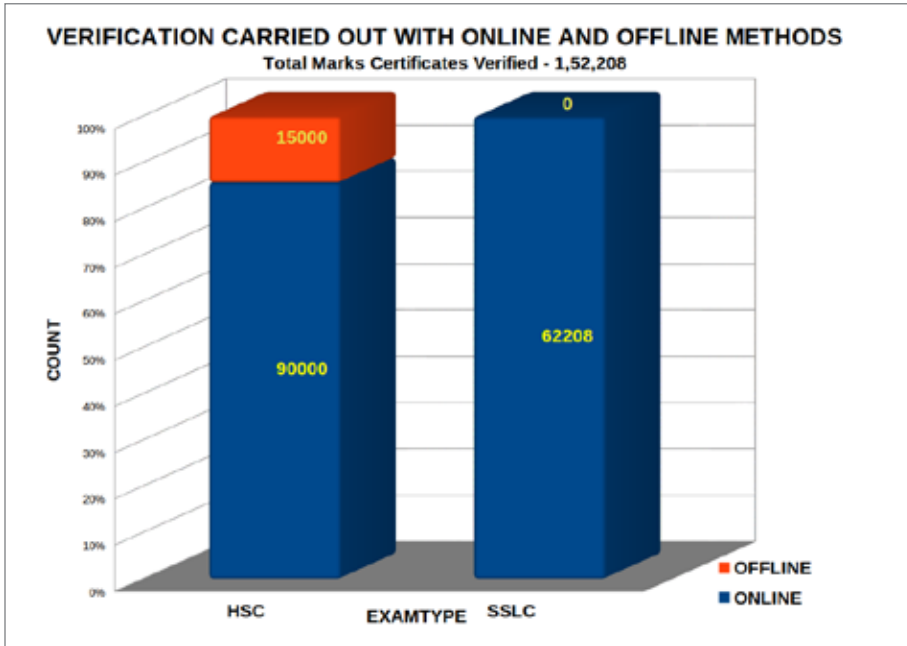
The Offline Barcode enables additional verification to the existing online option. This contains entire verifiable items in encrypted format which can also be used at places where the internet connectivity is not available.

VERIFICATION VOLUME

Candidates seeking admission for higher studies in Medical/ Engineering Colleges, Poly-Technic Colleges and also for getting employment are required to go through Mark certificate verification. Hence, about 15-18 lakhs of marks certificates are to be verified every year.

MANUAL VERIFICATION PROCESS

Manual verification process begin with taking records physically by the available resource persons of the Directorate. After completing the entire process, the Genuineness of the mark certificate will be dispatched by Registered/ Speed Post. This procedure is for verifying each and every photo copies of the mark certificates (Higher Secondary/S.S.L.C. & D.E.E Examination I & II year) received by the Directorate every year.

VERIFICATION CARRIED OUT WITH ONLINE AND OFFLINE METHODS
Total Marks Certificates Verified - 1,52,208

- Saving of cost, time and resources because of automated verification and minimize the verification process.

- Offline Mark Entry Module available for convenient offline entry at institutes which speed up the process and without the concerns of network speed and server load.

- On-Line verification services available at multiple levels as per the authorization of DGE.

- Mark Certificate Verification Mobile app at anytime, anywhere.

- Counter services for the additional services such as issuance of Certified Copies, Migration Certificates and Certified Extract of date of birth etc.

CHALLENGES IN MANUAL VERIFICATION PROCESS:

- Completing verification process in the same year remains a challenge due to shortage of resource and inherent delay in manual verification

- Occurrence of errors handling the work manually

- Damage of records due to frequent manual handling

- Difficulties in deploying additional manpower

KEY FEATURES:

- Open standard encrypted 2D QR code on Mark certificates for online verification anytime, anywhere.

- Open standard encrypted PDF 417 2D linear barcode on Mark Certificates for offline verification as an additional security option.

- Automated Batch Verification for speeding up the verification for bulk verification from institutes.

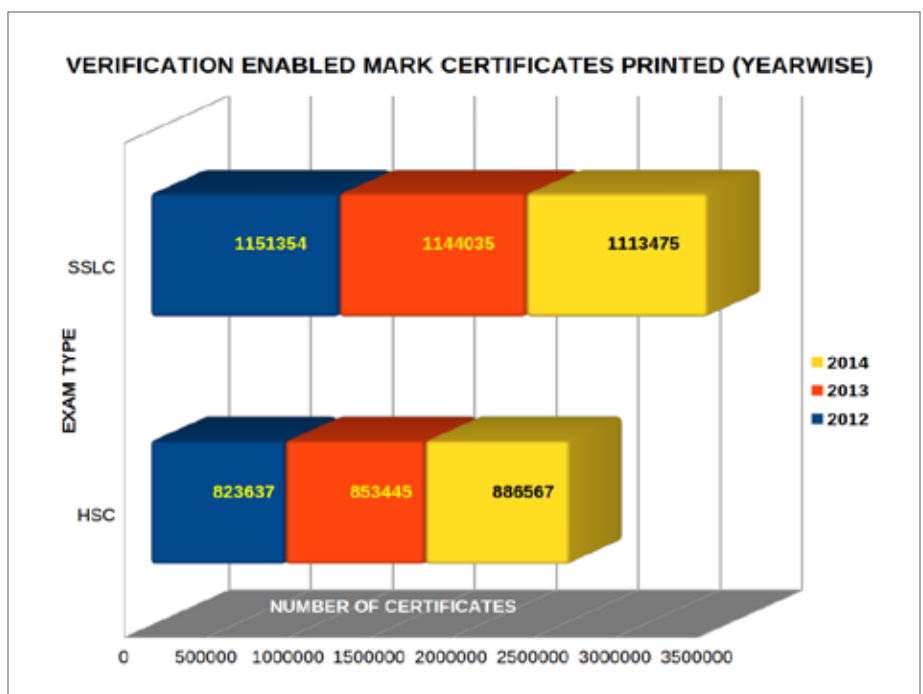- Direct Batch Verification for certif-

icates in batches received directly from Government / Unregistered Institutes by DGE.

- With necessary authentication, staff selection commission, employment exchange, Govt./Pvt. recruitment board, engineering/medical counselling board etc. can make use of the system.

IMPORTANT MODULES:
Automated Batch Verification (Online Mode):

In the Automated Batch Verification, a batch is created by each institution with necessary details, marks of each individual students are entered, con-

VERIFICATION ENABLED MARK CERTIFICATES PRINTED (YEARWISE)

firms the marks entered and then submitted online to verification by DGE. On acceptance of the batch, automated verification is done by comparing the marks entered by the Institution against marks in the database available with DGE. Necessary verification reports are further generated and sent to the respective institutes. Following are the advantages and features:

- The implementation of automated verification will cut down the entire process of manual verification process.

- Facility for the registered Institutes to submit on line batches for verification.

- Verification of the entered marks against the Department Marks Database.

- Verification Report generated signed by the DGE official and then sent to the respective Institutes.

Automated Batch Verification

Offline Mark Entry Application has been developed in order to speed-up the data entry by the institutes, an offline application based on HTML5. Institute users can download this module, which can then be copied to their local system and further the data can be entered in offline mode (without the requirement of internet connection). They can then export the data and upload to the application server for verification.

Direct Batch Verification:

- This option is normally used by Government Departments to submit batches for marks certificates verification.

- Verification done manually by us-

ing open standard 2D Barcode/ Register Number.

- Facility can be availed by any unregistered Institutes also.

- Verification Reports can be generated based on the manual securitizes and signed by the DGE Officials, which are then sent to the respective Government Departments.

Counter Services Module for Issuance of Certified Copy of Marks, Certified Extract of Date of Birth and Migration Certificate.

This module has been developed and implemented for automation of Counter Services helps to minimize the time taken for actual issuance of the following certificates at Directorate of Government Examinations:

- Certified Copy of Marks (CCM) for HSC

- Certified Copy of Marks (CCM) for SSLC

- Certified Extract of Date of Birth

- Migration Certificate (MC) for HSC

- Migration Certificate for SSLC

- Certificates given on the same day/ next day

TECHNOLOGY:

Operating System: CentOS (App Server), Windows (Database Server)

Technology Stack: Java Struts2 Hibernate and HTML5 / CSS3

Database: MS SQL Server

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