L.S. Davar & Company

Prior-Art Search Report

“Software developed to generate E-Certificates in large numbers with security and online verification systems”

1. **Understanding of the Invention and Key Features**
   1. Brief Understanding of the Invention

This is a software developed to generate E-Certificates in large numbers with security and online verification systems.

1. 1000 certificates can be generated in 5 minutes optimally.

2. Online verification system is embedded in each certificate, 3rd party can scan and verify online about the authenticity & details of the certificate.

3. The verification links are SHA-3 encrypted preventing any forgery.

4. Authorized login with surveillance, to keep track of who generated which certificate number. This helps in the accountability and tracing of lawbreakers.

5. Steganographic encryption as a second layer of security is hidden in the inner layer of the certificate. Decodable only by the institutional head.

6. Easy UI, certificate development from a template.

7. Place candidate images on the certificate, multiple dignitary's signatures, and QR code.

8. Application to access the data and rectify erroneous certificates.

9. Certificate data can be fed in XLSX, CSV, and Text file formats, containing thousands of rows and columns of data required.

10. The template, font, and style formats are reusable once created on any other computer where it's installed.

11. The data, font, style, and template formats are mapped and stored. The certificates can be generated when required instead of wasting storage space for certificate images.

* 1. Key Features of the Invention

The key feature of the invention is:

**CREATING ENCRYPTED LINKS**

* To begin with, user is asked to login if he/she already has an account
* If user is not registered, option is given to register the account
* Once the user is registered, he/she can login through the credentials
* User tokens are generated for every user at registration time.
* File upload option asks user to upload .csv/.xlsx file.
* Next alphanumeric codes will be generated (Datagram) which are further used for creating SHA-3 encrypted 256-Bit tokens.
* Finally append the static URL to the generated encrypted link and return the file to cloud server for further processing.

**VERIFICATION**

* After successful generation of certificate with QR code, scan the QR-Code for verification.
* Decoding of encrypted link happens at backend
* If decoding is successful query the database for the data, retrieve the data and display the same along with a header saying “VERIFIED”.
* If no data is found in the database, display “NOT VERIFIED” on the web page.

**CERTIFICATE GENERATION**

* Secured Login interface.
* Certificate template in format of .jpg / .png is chosen for generation
* Steganography security is embedded into the image, by hiding data inside the certificate generated. This is achieved by sophisticated image processing.
* This hidden code can also be used to verify the authenticity of the certificate issued.
* The encrypted links form the large data files of .xlsx / .csv are placed as QR codes on the certificate. These are scanned to verify the certificate issued.
* Values of the .xlsx file are formatted. Selection of location of the data on the certificate image, and also adjusting colour, size, and font type of the data.
* Images of recipients can be embedded with path of image pointing in the .xlsx file. The dignitary signatures can also be added in the generation time, instead of appending on the certificate template image.
* The complete process is logged, can be reused elsewhere to generate the same format certificates with new set of data.

**DATABASE**

* Access to verify and edit data.
* Erroneous data can be rectified.
* Keep a track of certificates generated, purpose and number.

Methodology

The methodology employed for the search comprised the following steps:

1. The key features of the invention were identified, based on the information provided in the invention titled as “***Software developed to generate E-Certificates in large numbers with security and online verification systems*”**.
2. Following keywords and variants of the keywords were identified based on the key features and the secondary search and were used for searching prior-art:

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| KEYWORDS | SYNONYMS |
| Software | System, Program |
| E-Certificates | Credentials, Documents, testimonial |
| Security | Safety |

1. Following Patent & Non-Patent databases were used during the search:

**Patent Databases:**

* + Orbit
  + Google patents
  + PatentScope
  + Patent Inspiration
  + Espacenet
  + USPTO
  + Free Patents Online
  + Indian Patent Office

**Non-Patent Databases:**

* + Google Scholar
  + Google
  + Science Direct

1. Using combinations of the above keywords, a patent database search was carried out on the Orbit database. The search was conducted through US (Full text), EP (Full text), GB (Full text), DE (English Abstract), JP (English Abstract) and CN (English Abstract) patent publications/granted patents, INPADOC, Abstracts of Japan, and WIPO PCT Publications.
2. The search results were analysed to assess the relevance by reviewing the full text to determine whether the patent publications disclose one or more key features of the present invention.
3. Following search strings were identified and used during the search:

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| S No. | Search Strings |
| 1 | **Software to generate E-Certificates** |

1. **Results of the Search:**

Relevant Patent/Publications found in this search are listed in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Reference Number | Patent/Publication No. | F1 | F2 | F3 |
| D1 | **IN201711011187** | **\*** | **\*** | **\*** |

Relevant Non-Patent Literature found in this search are listed in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Reference Number | Non-Patent Literature | F1 | F2 | F3 |
| D2 | Adobe Spark's free online certificate generator | **\*** | **\*** | **\*** |
| D3 | [Visme](https://worldwide.espacenet.com/publicationDetails/originalDocument?CC=CN&NR=203811765U&KC=U&FT=D&ND=3&date=20140903&DB=EPODOC&locale=en_EP) Certificate Maker | **\*** | **\*** | **\*** |
| D4 | [Canva](https://worldwide.espacenet.com/publicationDetails/originalDocument?CC=EP&NR=1309061A2&KC=A2&FT=D&ND=3&date=20030507&DB=EPODOC&locale=en_EP) Certificate Maker | **\*** | **\*** | **\*** |
| D5 | [E-Certificate - Kitinfinet](https://www.kitinfinet.com/e-certificate.php) | **\*** | **\*** | **\*** |

**INDICATORS AS BELOW:**

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| --- | --- |
| **** | **Feature Present** |
| **\*** | **Feature Partially Present** |
| **-** | **Feature Absent** |

1. **Results of the Search:**
   1. **Relevant Patent References**
      1. Search Result 1:

[Click here to return to the ‘Results of the Search’ table](#result)

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| **Patent/Publication No.** | **D1: IN201711011187** |
| **Title** | Intelligent ball head hanging ring used for flashover fault positioning and flashover fault positioning system and method |
| **Assignee/Applicant** | Ankur Gupta |
| **Inventor(s)** | Gupta Ankur Gupta Rishi PrabhatPurnendu SawhneySahil |
| **Priority Date** | 2017-03-29 |
| **Application Date** | 2017-03-29 |
| **Publication Date** | 2018-10-05 |
| **Family Member(s)** | IN201711011187 |
| **Abstract** | The invention discloses a system used by **an educational institution or any business organization to issue many certificates, official letters to its students, employees etc. in physical/digital form.**  **However, these documents can be easily forged and manipulated.**  **The proposed system issues e-certificates and e-documents to employees, generating a unique DOI for each certificate/document and imprinting it on the document which can then be verified by any external third-party. Role- Based Access Control policies ensure that only authorized functionaries within an organization can issue relevant official documents.**  **Further, audit trail maintained by the proposed invention ensures that all transactions in the system are recorded in encrypted form to prevent misuse within the organization.**  **Thus, manipulation or forgery of such documents is prevented and management of official documents is simplified.** |
| **Relevant Specifications** | **Claim 1-A system and method for securely issuing official documents, the method comprising: An authentication and sessions service; a Role-Based Access Control (RBAC) manager module for managing user rights and privileges; a workflow enforcer module for ensuring process compliance; a document manager for generating and issuing documents; a DOI manager for obtaining DoI for each document from external DOI issuing agency; a document repository maintaining association of DOIs and digital documents; a document template repository storing pre-defined templates of official documents; a document verification manager which performs document verification through DOI matching in response to external third-party requests an encrypted audit trail manager for keeping record of all transactions/operations in the system; a notification service; a digital signing service using digital signature; a universal DOI lookup service comprising both API-based and web-lookup options providing third-party document verification functionality; wherein the system prevents official documents from being forged or manipulated in any manner.** |

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| **Patent/Publication No.** | **D2:** [Adobe Spark](https://spark.adobe.com/) |
| **Title** | Adobe Spark's free online certificate generator |
| **Assignee/Applicant** | Adobe |
| **Abstract** | Adobe Spark puts the power of creation in your hands. You can resize your text, move it around the page, add special effects filters, make elements transparent, and change border configuration. The magic layout function moves your text as you experiment with different layouts so you always see what your design will look like. Adobe Spark makes it easy to design and create a certificate exactly the way you want it to look. Spark’s intuitive, easy to use functions mean you spend less time trying to figure out how to use the program and more time creating the perfect certificate. Best of all, Adobe Spark is completely free to use. |
| **Relevant Specifications** | **HOW TO MAKE A CERTIFICATE****PICK THE PERFECT SIZE** **Start the design process by selecting a size and layout for your certificate. Adobe Spark Post gives you many standard size selections to choose from. You can also get creative and customize the size to fit your needs.** **CHOOSE A THEME** **Themes are a great way to start the design process. Adobe Spark has numerous themed design templates to choose from. You can find the theme that’s perfect for your certificate or design one from scratch. Themes help set the tone for your certificate.** **PERSONALIZE WITH IMAGES** **Add photos and other images to personalize your certificate and make it stand out. You can upload your own images or choose from Adobe Spark’s library of free stock photos.** **DESCRIBE WITH ENGAGING TEXT** **Make your certificate stand out with text. With Adobe Spark, you can add or edit text and make changes to spacing, opacity, font, color, and orientation.** **DOWNLOAD, SHARE, OR PRINT** **Once you’re finished with your certificate, you can download it to your device, print it out, or share it online. Adobe Spark makes it easy to download in a format that works for you.** |

* 1. **Related Patent References**

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| **Patent/Publication No.** | **D3:** [**Visme**](https://worldwide.espacenet.com/publicationDetails/originalDocument?CC=CN&NR=203811765U&KC=U&FT=D&ND=3&date=20140903&DB=EPODOC&locale=en_EP) **Certificate Maker** |
| **Title** | MAKE CUSTOMCERTIFICATESIN MINUTES. |
| **Assignee/Applicant** | Visme |
| **Abstract** | **Make customcertificatesin minutes.**  * **– Easy-to-customize certificate maker.** * **– Apply your own colors, fonts, images and logos.** * **– Download as a ready-to-print PDF file with crop marks.**   [**Create Your Certificate**](https://www.visme.co/certificate-maker/)**It’s free and easy to use.** |
| **Relevant Specifications** | * Visualize the kind of certificate you want to give your students and attendees. What are they being awarded? Is it formal or casual? * Note down all the relevant information that will be included on the certificate. * Log in to the Visme dashboard and access the certificate maker through the Certificates icon inside Printables tab. * Select from one of the available templates. Cute ones for kids’ activities, formal ones for higher education certificates, athletic styles for sports awards and more. * Customize the color palette easily with one of the color themes or branded color palettes in the color picker. * Add all your information in the placeholders on the certificate template to personalize it. * Change the fonts to fit the style you are going for. Keep the title of the certificate as the biggest and most important visual in the design. * Customize the color of the fonts to fit the rest of your color palette and adjust the sizes to get a good balance. * Add any relevant illustrative graphics or icons to add some visual spark to your certificate or award. |

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| **Patent/Publication No.** | **D4:** [**Canva**](https://worldwide.espacenet.com/publicationDetails/originalDocument?CC=EP&NR=1309061A2&KC=A2&FT=D&ND=3&date=20030507&DB=EPODOC&locale=en_EP) **Certificate Maker** |
| **Title** | Create certificates for every award under the sun with Canva’s free drag and drop certificate maker. |
| **Assignee/Applicant** | Canva |
| **Abstract** | How to make a certificate  1. **Launch Canva**   Open Canva on your desktop or launch the app to get started. Log in or sign up using Google or Facebook then search for “”Certificates”” to start designing.   1. **Select a template**   Browse different styles and themes of certificate designs for your needs. From certificates of recognition to completion certificates and more, simply select the layout you want and start customizing.   1. **Personalize your design**   Get your certificates looking exactly how you want it by using our easy drag-and-drop design tools. Change the text, colors, fonts and backgrounds with just a few clicks.   1. **Add more design elements**   Explore our image and graphics library filled with millions of photos, icons, illustrations and vectors to use on your design. Add more frames and text boxes to your layout.   1. **Order your prints**   Order high-quality prints of your certificates through Canva Print and enjoy free shipping. Or, save your design as a PDF, JPG or PNG file. Remember you can always edit your design any time.  [Open a New Certificate Design](https://canva.me/certificates?uid=a84a7904-15db-4413-af11-38f1ee59773f) |
| **Relevant Specifications** | By using Canva, there is no need to start your design from scratch. Canva’s amazing designers have come up with over a hundred certificate templates you can use and re-use for free. Browse through the selection to find the right one you need like Certificates of Recognition, Attendance, Course Completion, Achievement and Diplomas. Create Award Certificates for contests or simply for fun — with Canva you have everything you need to design right at your fingertips. |

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| **Patent/Publication No.** | **D5: [E-Certificate - Kitinfinet](https://www.kitinfinet.com/e-certificate.php)** |
| **Title** | Online certificate issuance and verification process |
| **Abstract** | [**KITINFINET**](https://kitinfinet.com/contact-us.php)**has conceptualised the process of Online Certificate E-certificate Issuance and Verification process since June 2010 and is market leader in the field. The company is providing this service to some top organisation in education sector like**[**University Grants Commission**](https://ugcnetonline.in/)**,**[**National Testing Agency**](http://ecertificate.nta.ac.in/candidate_login.php)**,**[**SWAYAM**](https://swayam.gov.in/explorer)**(India's national MOOC platform) to**[**MSME**](https://udyogaadhaar.gov.in/UA/UAM_Registration.aspx)**and**[**Start-ups**](https://www.startupindia.gov.in/content/sih/en/reources/knowledge-bank.html)**.** |
| **Relevant Specifications** | * E-certificate is secured document as it is embedded **with latest available**[**technologies**](https://www.kitinfinet.com/raas.php)**and management tools.*For each institution, it contains unique E-certificate number, Photo of concerned qualified candidate, online verification system.*** * Verification of E-certificate is very simple process and safe. There is two ways to get verified the E-certificate: * The employer can get reply containing information about genuine/non-genuine through website by Online Reply System which may be mentored by dealing authority concerned institution. * The employer can get reply instantly by using her/his smart phone or QR bar code scanner. * The system is a good [solution](https://www.kitinfinet.com/vision-mission.php) to minimise the limitation of paper based certificate’s verification as this is fast and safe. No need to transfer/post the original document to avoid the possibility of theft. |

1. **Conclusion**

The research on the subject matter **“*Software developed to generate E-Certificates in large numbers with security and online verification systems*”** was conducted to ascertain the patentability aspect of the said subject matter. The objective was to search and provide closest available prior art published. ***The inventors are required thereafter to scheme through the prior arts and discuss the technical difference between the prior art found and subject matter with the researcher to strengthen the patentability claim.***

All the cited prior arts disclose the software that are used for developing E-certificates. Most of the software’s that are disclosed in the prior arts are already used by various top most organization.

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| S No. | Patent Law | Yes/No |
| 1 | Novelty in the device (*under Section 2(1)(l) of The Patents Act, 1970)* | No |
| 2 | Inventive Step in the device*(under Section 2(1)(ja) of The Patents Act, 1970)* | No |
| 3. | Industrial Applicability (*under* Section *2(1)(ac) of The Patents Act, 1970)* | Yes |

1. **DISLCAIMER AND LIMITATIONS OF SEARCH**

This research report is based only on the product and the process details as provided by the Client. In concluding this research, we have relied upon the patents database as available over web. The information provided in this research is based on databases and information sources that are believed to be reliable by L.S. Davar& Co. While L.S. Davar& Co. has used the best resources for this research, we disclaim all warranties to the accuracy, completeness, or adequacy of such information. The above mapping is prepared on the information extracted from patent databases considered reliable by L.S. Davar& Co. and mapping is based on the product and process details specified by the client. The information shown in the research is the same as found at patent databases during the project tenure. L.S. Davar& Co. disclaims all ambiguities if the data has been changed/edited at the patent databases during or after the project tenure. This work product is not a legal opinion and should not be construed as a legal advice of any sort.