

A FILE MANAGEMENT SYSTEM AND METHOD

FIELD OF INVENTION

- 5 This invention relates to file management system and method. In particular, the invention relates to a system and method for importing or uploading files to be stored in a database that can be retrieved when needed.

10 BACKGROUND OF THE INVENTION

- A file management system facilitates the creation, organization, storage, retrieval, modification, and deletion of files on a computer or a network. The primary goal of a file management system is to efficiently manage and control access to data, ensuring
- 15 that users can work with files in a structured and organized manner. However, the files are often managed by different individuals or parties, which leads to many issues such as data loss, file redundancy, file disorganization resulting in difficulty to locate files, inadequate access controls or lax security measures causing unauthorized access to sensitive files, difficulty in managing different versions of the files, especially in
- 20 collaborative environments, and difficulty in tracking changes of files over time.

- Files may be shared for various purposes such as to obtain signature by multiple parties as disclosed in US2022092161A1. This invention reveals a method for sharing a document to be signed with human as the password to access the document. The method
- 25 programmed in a non-transitory memory of a device takes on the step of accessing the document to be signed, acquiring an official identification of a user; performing human identity analytics on the user; and signing the document with a device by scanning a scan code in the document. The human identity analytics performed on the user includes analyzing a trust score for the user, wherein the trust score is generated by analyzing
- 30 the acquired user information. Hence, policies can be implemented based on the trust

score. Usability of the user's device is limited based on the trust score. For example, if the trust score is below a threshold, the user may not be able to sign the document through disallowing the document to be signed using the device.

- 5 There are also solutions introduced for managing data growth and protecting data, such as migration techniques for moving data to lower cost storage over time and data reduction techniques for reducing redundant data and pruning lower priority data. One of such examples is US11656784B2 that discloses systems and methods for creating local, or on-premises, secondary copies of data managed and/or stored in online
- 10 repositories. In certain embodiments, the systems and methods perform a single application programming interface (API) call to a web application level of an online repository to transfer a copy of the data stored in the online repository from the online repository to a local site of a local information management system. The systems and methods access the copy of the data via a local site at the site of the local information
- 15 management system, generate a metadata manifest file that associates metadata files and data files within the copy of the data of the site of the local information management system, and transfer the data files and the metadata manifest file to a media agent for storage to a secondary storage device of the local information management system.
- 20 The present invention is neither about using a device to control access to a file, nor about creating secondary copies of data to be stored in repositories, but pertains to the sharing of various files by different parties that are stored in a database in an organized manner that the files can be retrieved for use by authorized parties.

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SUMMARY OF INVENTION

- The main object of the present invention is to provide a file management system and method that allows more than one user to send various files into a database for storage
- 30 such that the files can be retrieved by authorized users. Such invention facilitates the

sharing of files among users, both within a local system and over a network. As such, different versions of files, especially in collaborative environments, can be managed with changes that can be tracked over time. If any users leave a group, the files stored in the database will be kept in the database as well as trackable and usable by other
5 users without affecting the files.

It is an object of the present invention to provide a file management system and method which implement security measures to control access to files, ensuring that users have appropriate permissions to view, edit, or delete files based on their roles or privileges
10 in accordance with the trustworthiness score of the users.

Another object of the present invention is to provide a file management system and method that logs and records activities related to file management, providing an audit trail for security and compliance purposes.

15 Further another object of the present invention is to provide a file management system and method with an organized file management as well as efficient sorting and categorization, thereby enabling users to search for and retrieve files quickly using search functionalities, by navigating through the directory structure, or by retrieving
20 files based on their categories.

Yet another object of the present invention is to provide a file management system and method that allows various files including email and its attachment, document, text, image, video, audio, website and the like to be categorized through a convenient manner
25 and saved into the database accordingly.

At least one of the preceding objects is met, in whole or in part, by the present invention, in which the present invention provides a file management system that comprises a server for managing operations of the system; a database for storing at least one file; a
30 platform for providing at least one interface for managing the file; a categorizing

module for establishing one or more categories for the file; and a storing module for storing the file to the database upon assigning the file to at least one category accordingly; wherein the stored files include email that are retrievable based on the assigned category through the platform by a retrieval module.

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In one of the embodiments of the invention, the categorizing module is configured to scan content of the email to detect the assigned category inserted therewithin.

According to a preferred embodiment of the invention, the files further include any one
10 or combination of images, audios, videos, texts, documents, and websites.

Preferably, the categorizing module is configured to prompt a user to assign the category to the files upon instructing the storing module to store the file in the database.

15 It is preferred that the category includes any one or combination of file group, and file access authority.

Based on a preferred embodiment, the system further comprises a sharing module for sharing the file to be edited by users based on level of file access authority.

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The system is preferred to further comprise a sorting module for sorting the stored files in chronological order.

Another aspect of the present invention is to provide a file management method that
25 comprises the steps of establishing one or more categories for at least one file through a platform using a categorizing module; and storing the file to a database by a storing module upon assigning the file to at least one category accordingly; wherein the stored files include email that are retrievable based on the assigned category through the platform by a retrieval module.

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According to a preferred embodiment, the email is assigned with the category by inserting the category within content of the email.

Preferably, the content of the email is scanned to detect the inserted category by the
5 categorizing module.

It is preferred that the files further include any one or combination of images, audios, videos, texts, and websites.

10 Preferably, the method further comprises the step of prompting a user to assign the category to the files upon instructing the storing module to store the file in the database by the categorizing module.

In addition, the method further comprises the step of sharing the file to be edited by
15 users based on level of file access authority by a sharing module.

Preferably, the method further comprises the step of sorting the stored files in chronological order by a sorting module.

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BRIEF DESCRIPTION OF THE DRAWINGS

This invention will now be described in greater detail with reference to the accompanying drawings.

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Figure 1 is a block diagram illustrating the main components of an exemplary file management system.

Figure 2 is a flowchart illustrating the main steps of an exemplary file management
30 method.

DETAILED DESCRIPTION OF THE INVENTION

- 5 For a better understanding of the invention, preferred embodiments of the invention that are illustrated in the accompanying drawings will be described in detail.

Disclosed herein is a file management system and method. A computer-readable memory may also be used for storing the computer program instructions, which can
10 direct a computer or other programmable data processing apparatus to function in an intended manner to carry out the steps of the method as illustrated in the drawings.

The invention will now be described in greater detail, by way of examples, with reference to the drawings.

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The term “file” used herein refers to a unit of storage or information that may include but not limited to email, file attachment of email, document, text, images, audio, video, website, or a combination of these. Each file is identified by a name and may be organized within directories or folders on a computer's hard drive, external storage
20 devices, network servers, or cloud storage. Further, the files may have attributes or metadata associated with them, providing additional information about the file, such as category, creation date, modification date, and permissions to access the file. On the other hand, the term “management” of the file herein involves tasks that imports, exports, stores, edits, removes, shares, searches, categorises and retrieves the file.

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Referring to **Figure 1**, the exemplary system comprises a server **110** having at least a processor for managing components of the system including modules and the platform
200 to execute the method to manage the files. The server **110** can be provided with a local database, linked to a cloud database, or both for storing the files in assigned
30 folders. As such, these local and cloud databases are collectively known as ‘database

120' herein.

The platform **200**, preferably an online platform, is accessible by any computing devices including a system device and user devices **300** with internet access through a software application, web browser, or both. The platform **200** allows interaction
 5 between its users through the user device **300** and the server **110**. Such user device **300** can be smartphones, computers, tablets, smart watches, and the like. It is preferred that users have a user account to access and use the platform **200**.

10 It should be noted that the term “user” herein are users of the platform **200** with a user account created to use the platform **200**. Upon creating a user account, the user establishes his identity through creating a user profile, or simply known as a profile. The profile of the user with identity information can be used to generate a trustworthiness score of the user that can be included in the user’s identity. The
 15 trustworthiness score is important in maintaining security, trust, and data integrity in various digital environments. They help in building confidence among users, preventing fraud, and ensuring the reliability of data and interactions. Thus, the trustworthiness score can be used for user authentication, security, fraud prevention, user reputation, data integrity, risk assessment, regulatory compliance, mitigation of
 20 cyber treats, customer confidence, access control and customization of user experience.

To generate the trustworthiness score, the system comprises a trustworthiness score module **1040** that determines the trustworthiness score of the user based on any one or combination of identity verification of the user, endorsement from other users, feedback
 25 from other users, and participation level in activities on the platform **200**. An endorsement of a user refers to an action taken by an endorsing party who is preferably another user of the platform **200**, or a third-party who is not a user of the platform **200** to publicly support or promote a user, whether it is based on the user's profile, content, skills, or contributions, as a form to express support, approval, or validation of the
 30 endorsed user's contributions or qualities within the context of the platform **200**, society,

country or the like. The endorsement score is determined according to the reputation, qualification, and trustworthiness score of the endorsing party, in which an endorsing party who is highly reputable or with high qualification or trustworthiness score can provide higher endorsement score to the endorsed user.

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The trustworthiness score may be used to determine level of file access authority of users. Access authority is crucial for maintaining the confidentiality, integrity, and security of sensitive information. Access authority defines the permission levels granted to individuals, specifying what actions they are allowed to perform, what information
10 they can access, and what functionalities they can use. In addition, access authority includes monitoring and logging mechanisms to track who accesses what files and when the access happens. This facilitates auditing, detecting unauthorized access, and investigating security incidents of the files. The users may be categorized based on their level of file access authority. For example, sensitive files may only be accessed by users
15 in the category of admin, super admin, manager, director, owner, or the like.

The platform **200** provides one or more interface for managing the files. The interface may be part of or a whole webpage that contains various content, including text, images, multimedia, links, and interactive elements. In addition, the platform **200** is preferably
20 a marketplace platform **200** with functions that allow exchanging of items to be performed such as buying/selling, leasing/renting, licensing in/licensing out, assigning/receiving and the like. Also, the platform **200** can provide a community for users with functions for banking or any payment transactions, registration of the user as a member of the platform **200**, logging in or out of user account of the platform **200**,
25 publication and updating of item listing and request listing, communication between users such as potential item provider and requester, appointment scheduling, arrangement of logistic services including courier services, virtual inspection of items, virtual auction of items, performing searches for items, management of digital tokens usable on the platform **200**, recording exchange records and the like.

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In a preferred embodiment, the platform **200** has file management interface that allows users perform actions to manage and manipulate the files such as copy, paste, read, write, delete, share, create, import, export, search, categorize, and retrieve. The file management interface displays list of files that are saved in respective folders with log
 5 data that shows the file name, date of creation, date of modification, date of storage, file size, author of the file, author who last edited the file, source of file, location of creation, location of edit and the like.

The system comprises a categorizing module **130** for establishing, editing, or removing
 10 one or more categories for the file through the file management interface. In addition, when a file from a third-party platform is selected to be exported or uploaded, and stored in the database **120** of the file management system, a user interface will be opened, whether it is in the form of a pop-up window or a non pop-up window, to prompt the user to assign one or more categories to the file to be sent to the database **120**. The
 15 categories can be created by providing a category name. In addition, past inputted categories or categories suggested by the categorizing module **130** can be selected by the user for assigning to the files. There are two main types of categories which are a file group, and a file access authority. The file group represents the group of which the file is classified or categorized as, whereas the file access authority refers to the group
 20 of users authorized to access the file. Users creating the category may inform the categorizing module **130** on whether the category is a file group or a file access authority.

A hashtag system for indexing the files can be implemented to the categorization
 25 module **150** and use to categorize the files. The categories in hashtag form comprises a hashtag system (#) followed by a word or phrase without any spaces that describes the categories. For example, #projectX can be a file group category in which files assigned with this category relates to “Project X”. In another example, #manager can be a file access authority category in which the files in this category can only be access by users
 30 in the position of “manager”. It should be noted that the categories can be named using

any words, phrases, numbers, symbols or combination thereof without utilizing the hashtag system.

To retrieve files, one or more categories can be inputted through typing the category or
 5 selecting from available categories. Files belonging to the category, be it a file group category or a file access authority category will be fetched and a list of files belonging to the category will be displayed. For users without the file access authority, they will not be able to retrieve the files from the category with file access control. For instance, by retrieving the files under the category of “admin”, non admin users will not be able
 10 to obtain or view any results of the files. By inputting two categories such as “kitchen” and “executive”, executive level users will be able to retrieve files categorized under the category of “kitchen”. The files may be saved in the folders based on the categories such that folders storing the files can be retrieved when the categories are searched. Optionally, the files are saved in a general folder, and are retrievable based on the
 15 metadata of the files that are categories of the files. For instance, the files are aggregated with a certain hashtag that creates a virtual collection of files related to the hashtag. By searching the category, files with metadata of the category will be fetched to be display in the list of searched files.

20 In addition, the system comprises a storing module **140** for storing the file to the database **142** upon assigning the file to at least one category accordingly. The storing module **140** is responsible for transferring or uploading files from a third-party platform to the database **120**. The files that can be stored include email, attachment of email, document, text, image, audio, video, website, and the like. Conversations from
 25 messaging or chat applications can be exported to the database **142** as well. Screenshots of any interface displayed in a user device **300** can also be stored in the database. To instruct the storing module **140** to save a selected file to the database **120** from a third-party platform, the user may click on a user interface in the form of an icon or open a menu to choose an option to save, export or share the file. Upon selecting the option or
 30 icon to store the file in the database **120**, the categorizing module **140** prompts the user

to input or select one or more categories to be assigned to the files.

For files of email with or without attachment, they can be saved by the storing module **140** by forwarding or sending the email to a dedicated email address linked to or
 5 provided by the file management system such that the email can be exported or sent to the database **120**. To categorize the email, users may input one or more categories or select available categories for the email. However, it is preferred that the categories are typed in the content of the email in a format that is recognizable by the categorizing module **130** as categories. For example, the hashtag system is adopted for the
 10 categories, any content with a hashtag in the email will be detected as the assigned category for the email. The categorizing module is configured to scan content of the email to detect the assigned category inserted therewithin, thereby allocating the files accordingly based on the assigned category.

15 It is preferred that the system further comprises a sharing module **160** for sharing the file to be edited such as signed or add, change or remove any content of the file by users based on level of file access authority. The sharing module **160** allows the file to be shared via various channels such as email, text message, file management interface of the platform **200**, third-party platforms and the like. An example is to share a document
 20 that needs to be signed by multiple users. The sequence of signing is determined by the level of file access authority which can be set by the author of the file. The highest ranked user may sign the document first followed by lower ranked users in sequential order. Users without access authority to view or even sign the file will not be permitted to open or receive the file.

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Furthermore, the system may comprise a sorting module **170** for sorting the stored files in chronological order to ease retrieval of the files and organize the files such that the history of the files can be easily tracked and recorded. The time of storing, creation, editing and/or removal of the files can be time stamped.

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To retrieve the files, the file name, category name, author name, date of creation, date of modification and the like may be used as query in the search bar of the file management interface. Upon inserting the search query, a retrieval module **150** of the system searches the database **120** and generates a list of search results that match with the search query. In an example where the search query is a category of the file in the form of hashtag, the retrieval module **150** collects files under the searched hashtag and generates a list of relevant search results.

The present invention also relates to the method for managing files as illustrated in **Figure 2**. At step **2001**, one or more categories for at least one file is established through the platform **200** using the categorizing module **130**. The categories can be established by inputting a category name or by selecting categories suggested by the categorizing module **130**.

Next in step **2002**, users may select a file from a third-party platform to be sent to the file management system for being stored in the database **120** using the storing module **140**, through email to the database **120**, via a save/export/share icon or a menu to select the file to be saved/exported/shared in the database **120**. Alternatively, the file may be uploaded from the file management interface of the platform **200**.

Upon selecting or uploading the file, at least one category is assigned to the file accordingly in step **2003**. The system, in particular the categorizing module **130**, prompts the user to assign the category to the files after instructing the storing module **140** to store the file in the database **120**. The category may be typed or selected from a list of available categories. The stored files include email, document, text, audio, video, image, website and the like that are retrievable based on the assigned category through the platform **200** by the retrieval module **150**. The category includes any one or combination of file group, and file access authority. Should the file intended to be set with access restriction, the user keys in or selects a category that indicates file access authority for a certain group of users.

In an example where an email is intended to be stored in the database **120**, the email can be inserted with one or more categories within the content of the email. The storing module **140** allows the email to be sent to the database **120** by sending the email to a
5 dedicated email address of the database **120**. Upon sending the email, the content of the email is scanned by the categorizing module **130** to detect the inserted categories. In a situation where no category is detected, the email is saved in an uncategorized folder.

The files may be shared to be edited by different users based on the level of file access
10 authority by a sharing module **160**. Users without access authority will not be able to access the file. In addition, the sequence of editing or viewing the file may be set based on the level of file access authority. For example, for a document to be signed, users with the highest file access authority may sign first before other users with lower file access authority can sign. The database **120** automatically saves each version of the
15 document that is signed by the different users until the document is fully edited or signed by all required users with the help of the storing module **140**. Since the file is already categorized, the categorizing module **130** may or may not prompt the user to add, edit or remove any category for the file.

20 In a preferred embodiment, the method further comprises the step of sorting the stored files in chronological order by a sorting module **170**. The retrieved files can be listed based on the chronological order for easy history tracking of the files. Further, the sorting module **170** may time stamp the files based on their time of creation, time of storage, time of modification, or combination thereof.

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Although the description above contains many specifications, it is understood that the embodiments of the preferred form are not to be regarded as a departure from the invention and it may be modified within the scope of the appended claims.

CLAIMS

1. A file management system comprising
a server (110) for managing operations of the system;
5 a database (120) for storing at least one file;
a platform (200) for providing at least one interface for managing the file;
a categorizing module (130) for establishing one or more categories for the file;
and
a storing module (140) for storing the file to the database (120) upon assigning
10 the file to at least one category accordingly;
wherein the stored files include email that are retrievable based on the assigned
category through the platform by a retrieval module (150).
2. The file management system according to claim 2, wherein the categorizing
15 module (130) is configured to scan content of the email to detect the assigned
category inserted therewithin.
3. The file management system according to claim 1 or 2, wherein the files further
include any one or combination of images, audios, videos, texts, documents,
20 and websites.
4. The file management system according to any one of the preceding claims,
wherein the categorizing module (130) is configured to prompt a user to assign
the category to the files upon instructing the storing module (140) to store the
25 file in the database (120).
5. The file management system according to any one of the preceding claims,
wherein the category includes any one or combination of file group, and file
access authority.

6. The file management system according to any one of the preceding claims, further comprising a sharing module (160) for sharing the file to be edited by users based on level of file access authority.
- 5 7. The file management system according to any one of the preceding claims, further comprising a sorting module (170) for sorting the stored files in chronological order.
- 10 8. A file management method comprising the steps of
establishing one or more categories for at least one file through a platform (200) using a categorizing module (130); and
storing the file to a database (120) by a storing module (140) upon assigning the file to at least one category accordingly;
wherein the stored files include email that are retrievable based on the assigned
15 category through the platform (200) by a retrieval module (150).
9. The file management method according to claim 8, wherein the email is assigned with the category by inserting the category within content of the email.
- 20 10. The file management method according to claim 8 or 9, wherein the content of the email is scanned to detect the inserted category by the categorizing module (130).
- 25 11. The file management method according to any one of claims 8 to 10, wherein the files further include any one or combination of images, audios, videos, texts, and websites.
12. The file management method according to any one of claims 8 to 11, further comprising the step of prompting a user to assign the category to the files upon

instructing the storing module (140) to store the file in the database (120) by the categorizing module (130).

5 13. The file management method according to any one of claims 8 to 12, further comprising the step of sharing the file to be edited by users based on level of file access authority by a sharing module (160).

10 14. The file management method according to any one of claims 8 to 13, further comprising the step of sorting the stored files in chronological order by a sorting module (170).