What is claimed is:

CLAIMS

1. A computer-implemented method for embedding copyright information in tables that hold digital content, the method comprising:

generating, by a computing device, a unique identifier (ID) based on copyright information associated with the digital content, wherein the copyright information and the digital content are recorded on a blockchain of a blockchain network;

identifying, by the computing device, a set of one or more attributes associated with a table;

embedding, by the computing device, the unique ID in the table by changing at least one attribute from the set of one or more attributes associated with the table to be representative of the unique ID, wherein the embedding produces an information-embedded table that enables retrieval of the copyright information from the blockchain based on the unique ID, and wherein a visual difference between the table and the information-embedded table is not apparent to an unaided human eye, wherein the at least one attribute comprises one or more of table size, cell size, row height, column width, or border style;

allocating, by the computer device, the digital content to the information-embedded table; and

distributing, by the computer device, the information-embedded table allocated with the digital content to the blockchain network.

2. The computer-implemented method of claim 1, further comprising:

before generating the unique ID, authenticating, by the computing device, that a copyright holder holds a copyright of the digital content based on a blockchain transaction ID associated with a transaction that recorded the digital content in the blockchain.

3. The computer-implemented method of any one of the preceding claims, wherein the copyright information associated with the digital content includes one or more of at least a portion of the digital content or identity information of a copyright holder of the digital content.

4. The computer-implemented method of claim 3, wherein the digital content is recorded on the blockchain as a first transaction associated with a first blockchain transaction ID and the identity information is associated with a second transaction associated with a second blockchain transaction ID, and wherein the first blockchain transaction ID or the second blockchain transaction ID is associated with one or more transaction records associated with the digital content.

5. The computer-implemented method of claim 4, wherein the one or more transaction records include one or more of creatorship, copyright ownership, update history, a timestamp, a location, or a license associated with the digital content.

6. The computer-implemented method of any one of the preceding claims, further comprising:

digitally signing, by a computing device, the unique ID using a private key assigned to the copyright holder.

7. The computer-implemented method of any one of the preceding claims, wherein the unique ID is generated based on one of hashing the copyright information using a hash function or encrypting the copyright information using a public key assigned to the copyright holder.

8. The computer-implemented method of any one of the preceding claims, wherein the unique ID is further generated based on one or more of a timestamp or an address associated with the copyright information.

9. The computer-implemented method of any one of the preceding claims, wherein embedding the unique ID is performed based on digital watermarking using one or more of a discrete wavelet transform, a discrete cosine transform, a singular value decomposition, a least significant bit, or undetectable steganography.

10. The computer-implemented method of any one of the preceding claims, wherein the table is visually represented by a plurality of pixels distributed based on the set of one or more attributes.

11. The computer-implemented method of claim 1, wherein the digital content is embedded with the unique ID.

12. A system for embedding copyright information to content, comprising:

one or more processors; and

one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon which are executable by the one or more processors to perform the method of any one of claims 1-11.

13. An apparatus for embedding copyright information to content, the apparatus comprising a plurality of modules for performing the method of any one of claims 1-11.