

What Is Claimed Is

1 1. A computer-executed method for providing a two-dimensional
2 code, comprising:
3 receiving, by a computer from a terminal of a first user, a two-dimensional
4 code generation request comprising service data, which comprises at least an
5 identifier from a terminal of the first user, the request comprising service data
6 corresponding to the two-dimensional code, the service data comprising a user
7 identifier of the first user;
8 obtaining~~acquiring~~ a human-recognizable first picture to correspond to the
9 user identifier, the first picture being a picture identifiable by naked eyes;
10 associating the obtained picture with the~~storing an association~~
11 relationship between the user identifier of the first user and storing the association
12 between the obtained picture and the identifier of and the first user~~picture;~~
13 encrypting a combination of the service data and the obtained picture to
14 obtain encrypted data;
15 generating a two-dimensional code based on the encrypted~~service~~ data;
16 and
17 providing the two-dimensional code and the obtained~~first~~ picture to the
18 first user, thereby facilitating the first user to display the two-dimensional code
19 and the obtained picture when providing services.

20 2.——A method for ~~providing a two-dimensional code, comprising:~~
21 ——receiving a two-dimensional code generation request from a terminal of a
22 first user, the request comprising service data corresponding to the two-
23 dimensional code, the service data comprising a user identifier of the first user;
24 ——acquiring a first picture to correspond to the user identifier, the first
25 picture being a picture identifiable by naked eyes;
26 ——storing an association relationship between the user identifier and the first

1 picture;
2 ~~generating a two-dimensional code based on the first picture and the~~
3 ~~service data; and~~
4 ~~providing the two-dimensional code and the first picture to the first user.~~

5 23. The method according to claim 1 ~~or 2~~, wherein providing the two-
6 dimensional code and the obtained~~first~~ picture to the first user comprises:
7 generating a service code by superposing the obtained~~first~~ picture and the
8 two-dimensional code to acquire a service code; and
9 ~~providing the service code to the first user.~~

10

11 34. The method according to claim 23, wherein the obtained~~first~~
12 picture is a picture readable by a two-dimensional code identification apparatus.

13 45. The method according to claim 23, wherein the obtained~~first~~
14 picture is located inside the two-dimensional code.

15 56. The method according to claim 45, wherein an area occupied by~~of~~
16 the obtained~~first~~ picture in the two-dimensional code is determined based on an
17 error correction level of the two-dimensional code.

18 67. The method according to claim 1 ~~or 2~~, wherein the obtained~~first~~
19 picture comprises one or more of~~at least one of the following content~~: a pattern, a
20 character, a number, and a symbol.

21 78. The method according to claim 1 ~~or 2~~, wherein a possibility~~rate of~~
22 repeated acquisition of the obtained~~first~~ picture being associated with an identifier

1 ~~of a different~~for corresponding to other user IDs is lower than a first
2 predetermined value.

3 9.——The method according to claim 8, wherein the user identifier
4 uniquely corresponds to the first picture.

5 ——~~8~~10. The method according to claim ~~7~~8, wherein acquiring the
6 ~~obtained~~first picture corresponding to the user identifier comprises acquiring the
7 first picture corresponding to the user identifier from a pre-established ~~belongs to~~
8 ~~a picture library comprising a number of, and wherein the picture library~~
9 comprises pictures ~~greater~~with a quantity more than a predetermined value.

10 11.——The method according to claim 10, further comprising, after
11 acquiring the first picture corresponding to the user identifier from the pre-
12 established picture library, marking the first picture in the picture library.

13 12.——The method according to claim 10 or 11, wherein acquiring the
14 first picture corresponding to the user identifier from the pre-established picture
15 library comprises randomly acquiring the first picture corresponding to the user
16 identifier from the pre-established picture library.

17 13.——The method according to claim 2, wherein the image data size of
18 the first picture is less than or equal to a second predetermined value.

19 14.——The method according to claim 2, wherein generating the two-
20 dimensional code based on the first picture and the service data comprises
21 encrypting a combination of the first picture and the service data using a

1 ~~predetermined encryption method to obtain encrypted data, and generating a two-~~
2 ~~dimensional code based on the encrypted data.~~

3 915. ~~The~~A method according to claim 1 for verifying a two-dimensional
4 ~~code, further comprising:~~

5 receiving, from a terminal of a second user, two-dimensional code
6 information and a first picture, wherein the two-dimensional code information and
7 the picture are obtained by the from a terminal of the a second user scanning a
8 service code;

9 ~~obtaining content data of a two-dimensional code based on the two-~~
10 ~~dimensional code information;~~

11 ~~obtaining service data based on the content data of the two-dimensional~~
12 ~~code, the service data comprising a user identifier of a third user;~~

13 ~~obtaining a third picture corresponding to the user identifier of the third~~
14 ~~user based on a pre-stored association relationship between user IDs and pictures;~~

15 determining a user identifier and whether the first picture based on the
16 received two-dimensional code information is consistent with the third picture;

17 ~~comparing the determined picture and the received picture; and~~

18 outputting determining that the a verification result of the service code
19 based on an outcome of the comparison does not pass in situations where the first
20 picture is not consistent with the third picture.

21 16. ~~The~~ method according to claim 15, further comprising:

22 ~~determining that the verification passes in situations where the first picture~~
23 ~~is consistent with the third picture; and~~

24 ~~transmitting the service data to the terminal of the second user.~~

25 1017. ~~The~~A method according to claim 9, wherein comparing the
26 determined picture and the received picture comprises for verifying a two-
27 dimensional code, comprising:

1 ~~receiving two-dimensional code information and a first picture from a~~
2 ~~terminal of a second user;~~
3 ~~obtaining content data of a two-dimensional code based on the two-~~
4 ~~dimensional code information;~~
5 ~~obtaining service data and second picture information based on the content~~
6 ~~data of the two-dimensional code;~~
7 determining a similarity between the determined first picture and the
8 received second picture, and wherein outputting the verification result comprises:
9 ~~based on information of the first picture and the second picture; and~~
10 in response to determining that the verification does not pass when the
11 similarity being is lower than a predetermined threshold, outputting a result
12 indicating that the verification fails.

13 18.—The method according to claim 17, wherein obtaining the service
14 data and the second picture information based on the content data of the two-
15 dimensional code comprises decrypting the content data of the two-dimensional
16 code using a predetermined decryption method to obtain service data and a second
17 picture.

18 19.—The method according to claim 17, wherein receiving the two-
19 dimensional code information and the first picture from the terminal of the second
20 user comprises receiving a service code from the terminal of the second user,
21 wherein the service code comprises a two-dimensional code and the first picture
22 which are superposed.

23 20.—The method according to claim 17, wherein the two-dimensional
24 code information comprises content data of a two-dimensional code.

1 1121. The method according to claim 1017, wherein outputting the
2 verification result~~the service data comprises a user identifier of a third user, and~~
3 ~~the method further comprises:~~
4 in response to the similarity being greater than a predetermined threshold,
5 identifying, obtaining a third picture corresponding to the user identifier of the
6 ~~third user based on previously a pre-stored associations relationship between user~~
7 identifiers~~IDs and pictures, a in situations where the similarity between the first~~
8 ~~picture and the second picture corresponding to the~~ is higher than a pre-determined
9 user identifier threshold;
10 determining whether the first picture is consistent with the third picture;
11 and
12 in response to the identified picture determining that the verification does
13 not match~~pass in situations where the received first picture, outputting a result~~
14 indicating that the verification fails~~is not consistent with the third picture.~~

15 1222. The method according to claim 1121, further comprising:
16 in response to the identified picture matches~~determining that the~~
17 ~~verification passes in situations where the received first picture, is consistent with~~
18 ~~the third picture; and~~
19 transmitting the service data associated with the determined user identifier
20 to the terminal of the second user.

21
22 13. The method according to claim 9, wherein determining the user
23 identifier and the picture comprises decrypting content data associated with the
24 two-dimensional code information.

25
26 14. The method according to claim 9, wherein determining the picture
27 comprises identifying, based on previously stored associations between user

1 identifiers and pictures, a picture corresponding to the determined user identifier,
2 and wherein comparing the determined picture and the received picture comprises
3 determining whether the identified picture matches the received picture.

4
5 1523. A computer system~~device for providing a two-dimensional code,~~
6 comprising:

7 a processor;

8 a storage device coupled to the processor and storing instructions, which
9 when executed by the processor cause the processor to perform a method,
10 the method comprising:

11 a-receiving, by a computer~~unit configured to receive a two-~~
12 ~~dimensional code generation request from a terminal of a first user, the~~
13 ~~request comprising service data corresponding to the~~ a two-dimensional
14 code generation request comprising, the service data, which comprises~~ing~~
15 at least a user identifier of the first user;

16 obtaining a human-recognizable~~an acquisition unit configured to~~
17 ~~acquire a first picture to correspond to the user identifier, the first picture~~
18 ~~being a picture identifiable by naked eyes;~~

19 a storage~~unit configured to store an associating~~ on the obtained
20 picture with the identifier of the first user and storing the
21 association~~relationship between the obtained picture and the~~ user identifier
22 of the first user~~and the first picture;~~

23 encrypting a combination of the service data and the obtained
24 picture to obtain encrypted data;

25 a generation~~unit configured to generating~~ a two-dimensional
26 code based on the encrypted~~service data; and~~

27 a providing~~unit configured to provide~~ the two-dimensional code
28 and the obtained~~first picture to the first user, thereby facilitating the first~~

1 user to display the two-dimensional code and the obtained picture when
2 providing services.

3 24. — A device for providing a two-dimensional code, comprising:
4 — a receiving unit configured to receive a two-dimensional code generation
5 request from a terminal of a first user, the request comprising service data
6 corresponding to the two-dimensional code, the service data comprising a user
7 identifier of the first user;
8 — an acquisition unit configured to acquire a first picture to correspond to the
9 user identifier, the first picture being a picture identifiable by naked eyes;
10 — a storage unit configured to store an association relationship between the
11 user identifier and the first picture;
12 — a generation unit configured to generate a two-dimensional code based on
13 the first picture and the service data; and
14 — a providing unit configured to provide the two-dimensional code and the
15 first picture to the first user.

16 1625. The computer system device according to claim 1523 or 24,
17 wherein the providing unit further comprises: a superposition subunit configured
18 to superpose the first picture and the two-dimensional code and the obtained
19 picture to the first user comprises:
20 — generating to acquire a service code by superposing the obtained picture
21 and the two-dimensional code; and
22 — a providing subunit configured to provide the service code to the first user.

23 1726. The computer system device according to claim 1625, wherein the
24 obtained first picture is a picture readable by a two-dimensional code identification
25 apparatus.

1 1827. The computer system~~device~~ according to claim 1625, wherein the
2 obtained~~first~~ picture is located inside the two-dimensional code.

3 1928. The computer system~~device~~ according to claim 1827, wherein an
4 area occupied by~~of the~~ obtained~~first~~ picture in the two-dimensional code is
5 determined based on an error correction level of the two-dimensional code.

6 2029. The computer system~~device~~ according to claim 1523 or 24,
7 wherein the obtained~~first~~ picture comprises one or more of~~at least one of the~~
8 following content: a pattern, a character, a number, and a symbol.

9 2130. The computer system~~device~~ according to claim 1523 or 24,
10 wherein a possibility~~rate of repeated acquisition~~ of the obtained~~first~~ picture being
11 associated with an identifier of a different~~for corresponding to other~~ user IDs is
12 lower than a first~~predetermined~~ value.

13 31.—The device according to claim 30, wherein the user identifier
14 uniquely corresponds to the first picture.

15 2232. The computer system~~device~~ according to claim 2130, wherein the
16 acquisition unit is further configured to acquire the obtained~~first~~ picture belongs
17 to a~~corresponding to the user identifier from a pre-established~~ picture library, and
18 the picture library comprising~~es~~ a number of pictures greater~~with a quantity more~~
19 than a predetermined value.

20 33.—The device according to claim 32, further comprising a marking
21 unit configured to, after acquiring the first picture corresponding to the user

1 identifier from the pre-established picture library, mark the first picture in the
2 picture library.

3 34.——The device according to claim 32 or 33, wherein the acquisition
4 unit is further configured to randomly acquire the first picture corresponding to
5 the user identifier from the pre-established picture library.

6 35.——The device according to claim 24, wherein the image data size of
7 the first picture is less than or equal to a second predetermined value.

8 36.——The device according to claim 24, wherein the generation unit
9 comprises an encryption subunit configured to encrypt a combination of the first
10 picture and the service data using a predetermined encryption method to obtain
11 encrypted data, and a generation subunit configured to generate a two-
12 dimensional code based on the encrypted data.

13 2337. The computer system according to claim 15, wherein the method
14 furtherA device for verifying a two-dimensional code, comprising:

15 a-receiving, unit configured to receive two-dimensional code information
16 and a first picture from a terminal of a second user, two-dimensional code
17 information and a picture, wherein the two-dimensional code information and the
18 picture are obtained by the terminal of the second user scanning a service code;

19 a first acquisition unit configured to acquire content data of a two-
20 dimensional code based on the two-dimensional code information;

21 ——a second acquisition unit configured to acquire service data based on the
22 content data of the two-dimensional code, the service data comprising a user
23 identifier of a third user;

24 determining a third acquisition unit configured to acquire a third picture

1 ~~corresponding to the user identifier and a picture of the third user based on the~~
2 ~~received two-dimensional code information a pre-stored association relationship~~
3 ~~between user IDs and pictures;~~
4 ~~comparing the determined a first determination unit configured to~~
5 ~~determine whether the first picture and is consistent with the received third picture;~~
6 ~~and~~
7 ~~outputting a second determination unit configured to determine that the~~
8 ~~verification result of the service code based on an outcome of the comparison does~~
9 ~~not pass in situations where the first picture is not consistent with the third~~
10 ~~picture.~~

11 38. ~~The device according to claim 37, further comprising:~~
12 ~~—— a third determination unit configured to determine that the verification~~
13 ~~passes in situations where the first picture is consistent with the third picture; and~~
14 ~~—— a transmission unit configured to transmit the service data to the terminal~~
15 ~~of the second user.~~

16 2439. ~~The A computer system according to claim 23 device for verifying a~~
17 ~~two-dimensional code, wherein comparing comprising:~~
18 ~~a receiving unit configured to receive two-dimensional code information~~
19 ~~and a first picture from a terminal of a second user;~~
20 ~~—— a first acquisition unit configured to acquire content data of a two-~~
21 ~~dimensional code based on the two-dimensional code information;~~
22 ~~—— a second acquisition unit configured to acquire service data and second~~
23 ~~picture information based on the content data of the two-dimensional code;~~
24 ~~—— a first determination unit configured to the determined picture and the~~
25 ~~received picture comprises determining a similarity between the determined first~~
26 ~~picture and the received second picture, and wherein outputting the verification~~
27 ~~result comprises: based on the first picture and the second picture information;~~

1 and
2 in response to a second determination unit configured to determine that the
3 verification does not pass when the similarity being is lower than a predetermined
4 threshold, outputting a result indicating that the verification fails.

5 40. — The device according to claim 39, wherein the second acquisition
6 unit is further configured to decrypt the content data of the second dimensional
7 code using a predetermined decryption method to obtain service data and a second
8 picture.

9 41. — The device according to claim 39, wherein the receiving unit is
10 further configured to receive a service code from the terminal of the second user,
11 wherein the service code comprises a two dimensional code and the first picture
12 which are superposed.

13 42. — The device according to claim 39, wherein the two dimensional
14 code information comprises content data of a two dimensional code.

15 2543. The computer system device according to claim 2439, wherein
16 outputting the verification result the service data comprises a user identifier of a
17 third user, and the device further comprises:

18 a third acquisition unit configured to acquire a third picture corresponding
19 to the user identifier of the third user based on a pre-stored association
20 relationship between user IDs and pictures in situations where in response to the
21 similarity being greater between the first picture and the second picture is higher
22 than a predetermined threshold, identifying, based on previously stored
23 associations between user identifiers and pictures, a picture corresponding to the
24 determined user identifier;

1 a third determination unit configured to determine whether the first picture
2 is consistent with the third picture; and
3 in response to the identified picture a fourth determination unit configured
4 to determine that the verification does not match pass in situations where the
5 received first picture, outputting a result indicating that the verification fails is not
6 consistent with the third picture.

7 2644. The computer system device according to claim 2543, wherein the
8 method further comprisesing:

9 a fifth determination unit configured to determine that the verification
10 passes if the first picture is consistent with the third picture; and
11 in response to the identified picture matches the received picture, a
12 transmission unit configured to transmitting the service data associated with to the
13 determined user identifier to terminal of the second user.

14 27. The computer system according to claim 23, wherein determining
15 the user identifier and the picture comprises decrypting content data associated
16 with the two-dimensional code information.

17 28. The computer system according to claim 23, wherein determining
18 the picture comprises identifying, based on previously stored associations
19 between user identifiers and pictures, a picture corresponding to the determined
20 user identifier, and wherein comparing the determined picture and the received
21 picture comprises determining whether the identified picture matches the received
22 picture.

23 45. — A computer apparatus, comprising a memory and a processor,
24 characterized in that the memory stores executable code, and the processor, when

- 1 ~~executing the executable code, implements the method according to any one of~~
- 2 ~~claims 1-22.~~