copy number Q will be referred to as a scanned image whose copy number Q is "1".

[0038]

Fig. 8A is a flow diagram illustrating an example of a sorting process according to the sorting method A. In the sorting method A, the page number P is mainly used for sorting. In this exemplary embodiment, in the sorting method A, scanned images are sorted for each page number P. That is, the controller 2a sets the value of a parameter "P1", which is held in the main storage 2b, to "1" (S207A).

[0039]

Then, the controller 2a reads from the database scanned images with the value of the page number P being "P1" (S207B). After that, the controller 2a generates a piece of document data (information), which includes the read scanned images as individual page images (S207C), and stores the document data in the hard disk 2c. The position of each scanned image in the document data is defined by the copy number Q. That is, a scanned image with the value of the copy number Q being "N (N is an integer)" is defined as the "N-th" page image in the document data. The controller 2a may specify the direction (posture) of each scanned image read in S207B and change the direction of the scanned image so that the direction becomes a predetermined erected method when generating the document data.

[0040]

Then, the controller 2a increments the value of "P1" by "1" (S207D). If there is a scanned image with the value of the page number P being "P1" in the database (Y in S207E), the controller 2a performs S207 and the subsequent steps again. If there is no scanned image with the value of the page number P being "P1" in the database (N in S207E), the controller 2a ends the process.

[0041]

Thus, the document data is generated for each page number P.

[0042]

Next, a sorting process according to the sorting method B will be explained. Fig. 8B is a flow diagram illustrating an example of a sorting process according to the sorting method B. In the sorting method B, the page number Q is mainly used for sorting. In this exemplary embodiment, in the sorting method B, scanned images are sorted for each copy number Q. That is, the controller 2a sets the value of a parameter "Q1", which is held in the main storage 2b, to "1" (S207a).

[0043]

Then, the controller 2a reads from the database scanned images with the value of the copy number Q being "Q1" (S207b). After that, the controller 2a generates a piece of

document data which includes the read scanned images as individual page images (S207d) and stores the document data in the hard disk 2c. The position of each scanned image in the document data is defined by the page number P. That is, a scanned image with the value of the page number P being "N (N is an integer)" is defined as the "N-th" page image in the document data. The controller 2a may change, as in the sorting method A, the direction of each scanned image so that the direction becomes a predetermined erected method when generating the document data.

[0044]

Then, the controller 2a increments the value of "Q1" by "1" (S207d). If there is a scanned image with the value of the copy number Q being "Q1" in the database (Y in S207e), the controller 2a performs step S207b and the subsequent steps again. If there is no scanned image with the value of the copy number Q being "Q1" in the database (N in S207e), the controller 2a ends the process.

[0045]

Thus, the document data is generated for each copy number Q.

[0046]

In the sorting method C, the printing execution date and time T is used for sorting. That is, in the sorting method C, a piece of document data, which includes all the

scanned images received by the image processing apparatus 2 as individual page images, is generated based on the printing execution date and time T that is held in the database as sorting information. That is, a scanned image with the printing execution date and time T being the "N-th (N is a positive integer)" earliest is defined as the "N-th" page image. In this case, as in the sorting methods A and B, the controller 2a may change the direction of each scanned image so that the direction becomes a predetermined erected method when generating the document data. Thus, the document data is generated.

[0047]

It should be noted that an exemplary embodiment of the prevent invention is not limited to the exemplary embodiment described above.

[0048]

For example, sorting information may not be acquired even though scanned images are analyzed due to a broken two-dimensional code image because of dirt, or absence of a two-dimensional code image in the first place. In the case where sorting information cannot be acquired even though the controller 2a analyzes the scanned image (i) in S203, the controller 2a (sorting information acquisition means) may acquire sorting information of the scanned image (i) on the basis of sorting information of a different scanned image.

which guides the identified sorting method, to the printer with scanner 6 (S305).

[0053]

On the printer with scanner 6 which has received the available method data, a sorting method list including sorting methods guided by the available method data, is displayed (S306). A staff of the educational affairs section selects a sorting method from the displayed sorting method list. As a result, the sorting method information indicating the selected sorting method is transmitted to the image processing apparatus 2. In the image processing apparatus 2 which has received the sorting method information, the value of the parameter "i" is incremented by one (S307).

[0054]

After that, the printer with scanner 6 sequentially scans the second and subsequent sheets of printing paper, and transmits the scanned images to the image processing apparatus 2. As a result, every time the image processing apparatus 2 receives a scanned image, the controller 2a performs S203 and the subsequent steps.

[0055]

[Variation 2]

Next, Fig. 10, that is, Variation 2 will be explained.

[0056]

As described above, specifying data is updated as needed. For example, when a criterion for management is changed, the specifying data is updated in an appropriate manner. Furthermore, the specifying data is appropriately updated in accordance with the characteristics of a document to be printed. A staff of the educational affairs section does not necessarily only scan answer sheets but also scan a mixture of multiple types of documents. Therefore, not all the pieces of sorting information held in the database (see Fig. 7) necessarily hold the same information. Therefore, in Fig. 10, a sorting method is determined not based on the sorting information acquired from the scanned image of the first sheet of printing paper but based on the sorting information acquired from the scanned images of all the sheets of printing paper.

[0057]

That is, in Fig. 10, when a scanning execution operation is performed, as in S201, the controller 2 first sets the value of the parameter "i" to "1" (S301). Then, every time the image processing apparatus 2 receives a scanned image, the controller 2a performs steps S402 to S406.

[0058]

That is, as in S202, the controller 2a sets the image number of the scanned image received by the image processing apparatus 2 to "i" (S402). As in S203, the controller 2a

CLAIMS

[Claim 1]

An image processing apparatus comprising:

image sequence acquisition means for acquiring an image sequence including a plurality of images;

sorting information acquisition means for analyzing the individual images included in the image sequence, and acquiring sorting information corresponding to the images on the basis of an analysis result; and

image sequence generation means for generating, based on the sorting information, one or a plurality of pieces of information indicating an image sequence which includes at least part of the plurality of images.

[Claim 2]

The image processing apparatus according to Claim 1, wherein the sorting information acquisition means

acquires information represented by a two-dimensional code image within an image included in the image sequence, as sorting information corresponding to the image.

[Claim 3]

The image processing apparatus according to Claim 1 or 2, wherein the image sequence generation means

generates the one or plurality of pieces of information in accordance with a method selected by a user from among a plurality of methods.

[Claim 4]

The image processing apparatus according to Claim 1 or 2, wherein the image sequence generation means

generates the one or plurality of pieces of information in accordance with a method corresponding to the sorting information acquired by the sorting information acquisition means from among a plurality of methods.

[Claim 5]

The image processing apparatus according to Claim 1 or 2, wherein the sorting information acquisition means

acquires sorting information corresponding to an image on the basis of sorting information corresponding to a different image, in a case where it is impossible to acquire the sorting information corresponding to the image by analyzing the image.

[Claim 6]

A program for causing a computer to function as:

image sequence acquisition means for acquiring an image sequence including a plurality of images;

sorting information acquisition means for analyzing the individual images included in the image sequence, and acquiring sorting information corresponding to the images on the basis of an analysis result; and

image sequence generation means for generating, based on the sorting information, one or a plurality of pieces of

information indicating an image sequence which includes at least part of the plurality of images.

copy number Q will be referred to as a scanned image whose copy number Q is "1".

[0038]

Fig. 8A is a flow diagram illustrating an example of a sorting process according to the sorting method A. In the sorting method A, the page number P is mainly used for sorting. In this exemplary embodiment, in the sorting method A, scanned images are sorted for each page number P. That is, the controller 2a sets the value of a parameter "P1", which is held in the main storage 2b, to "1" (S207A).

[0039]

Then, the controller 2a reads from the database scanned images with the value of the page number P being "P1" (S207B). After that, the controller 2a generates a piece of document data (information), which includes the read scanned images as individual page images (S207C), and stores the document data in the hard disk 2c. The position of each scanned image in the document data is defined by the copy number Q. That is, a scanned image with the value of the copy number Q being "N (N is an integer)" is defined as the "N-th" page image in the document data. The controller 2a may specify the direction (posture) of each scanned image read in S207B and change the direction of the scanned image so that the direction becomes a predetermined erected direction when generating the document data.

[0040]

Then, the controller 2a increments the value of "P1" by "1" (S207D). If there is a scanned image with the value of the page number P being "P1" in the database (Y in S207E), the controller 2a performs S207 and the subsequent steps again. If there is no scanned image with the value of the page number P being "P1" in the database (N in S207E), the controller 2a ends the process.

[0041]

Thus, the document data is generated for each page number P.

[0042]

Next, a sorting process according to the sorting method B will be explained. Fig. 8B is a flow diagram illustrating an example of a sorting process according to the sorting method B. In the sorting method B, the copy number Q is mainly used for sorting. In this exemplary embodiment, in the sorting method B, scanned images are sorted for each copy number Q. That is, the controller 2a sets the value of a parameter "Q1", which is held in the main storage 2b, to "1" (S207a).

[0043]

Then, the controller 2a reads from the database scanned images with the value of the copy number Q being "Q1" (S207b). After that, the controller 2a generates a piece of

document data which includes the read scanned images as individual page images (S207d) and stores the document data in the hard disk 2c. The position of each scanned image in the document data is defined by the page number P. That is, a scanned image with the value of the page number P being "N (N is an integer)" is defined as the "N-th" page image in the document data. The controller 2a may change, as in the sorting method A, the direction of each scanned image so that the direction becomes a predetermined erected direction when generating the document data.

[0044]

Then, the controller 2a increments the value of "Q1" by "1" (S207d). If there is a scanned image with the value of the copy number Q being "Q1" in the database (Y in S207e), the controller 2a performs step S207b and the subsequent steps again. If there is no scanned image with the value of the copy number Q being "Q1" in the database (N in S207e), the controller 2a ends the process.

[0045]

Thus, the document data is generated for each copy number Q.

[0046]

In the sorting method C, the printing execution date and time T is used for sorting. That is, in the sorting method C, a piece of document data, which includes all the

scanned images received by the image processing apparatus 2 as individual page images, is generated based on the printing execution date and time T that is held in the database as sorting information. That is, a scanned image with the printing execution date and time T being the "N-th (N is a positive integer)" earliest is defined as the "N-th" page image. In this case, as in the sorting methods A and B, the controller 2a may change the direction of each scanned image so that the direction becomes a predetermined erected direction when generating the document data. Thus, the document data is generated.

[0047]

It should be noted that an exemplary embodiment of the prevent invention is not limited to the exemplary embodiment described above.

[0048]

For example, sorting information may not be acquired even though scanned images are analyzed due to a broken two-dimensional code image because of dirt, or absence of a two-dimensional code image in the first place. In the case where sorting information cannot be acquired even though the controller 2a analyzes the scanned image (i) in S203, the controller 2a (sorting information acquisition means) may acquire sorting information of the scanned image (i) on the basis of sorting information of a different scanned image.

which guides the identified sorting method, to the printer with scanner 6 (S305).

[0053]

On the printer with scanner 6 which has received the available method data, a sorting method list including sorting methods guided by the available method data, is displayed (S306). A staff of the educational affairs section selects a sorting method from the displayed sorting method list. As a result, the sorting method information indicating the selected sorting method is transmitted to the image processing apparatus 2. In the image processing apparatus 2 which has received the sorting method information, the value of the parameter "i" is incremented by one (S307).

[0054]

After that, the printer with scanner 6 sequentially scans the second and subsequent sheets of printing paper, and transmits the scanned images to the image processing apparatus 2. As a result, every time the image processing apparatus 2 receives a scanned image, the controller 2a performs S303 and the subsequent steps.

[0055]

[Variation 2]

Next, Fig. 10, that is, Variation 2 will be explained.

[0056]

As described above, specifying data is updated as needed. For example, when a criterion for management is changed, the specifying data is updated in an appropriate manner. Furthermore, the specifying data is appropriately updated in accordance with the characteristics of a document to be printed. A staff of the educational affairs section does not necessarily only scan answer sheets but also scan a mixture of multiple types of documents. Therefore, not all the pieces of sorting information held in the database (see Fig. 7) necessarily hold the same information. Therefore, in Fig. 10, a sorting method is determined not based on the sorting information acquired from the scanned image of the first sheet of printing paper but based on the sorting information acquired from the scanned images of all the sheets of printing paper.

[0057]

That is, in Fig. 10, when a scanning execution operation is performed, as in S201, the controller 2 first sets the value of the parameter "i" to "1" (S401). Then, every time the image processing apparatus 2 receives a scanned image, the controller 2a performs steps S402 to S406.

[0058]

That is, as in S202, the controller 2a sets the image number of the scanned image received by the image processing apparatus 2 to "i" (S402). As in S203, the controller 2a

CLAIMS

[Claim 1]

An image processing apparatus comprising:

image sequence acquisition means for acquiring an image sequence including a plurality of images;

sorting information acquisition means for analyzing the individual images included in the image sequence, and acquiring sorting information corresponding to the images on the basis of an analysis result; and

image sequence generation means for generating, based on the sorting information, one or a plurality of pieces of information indicating an image sequence which includes at least part of the plurality of images in accordance with a method selected by a user from among a plurality of methods.

[Claim 2]

The image processing apparatus according to Claim 1, wherein the plurality of methods are identified based on a type of the sorting information.

[Claim 3]

The image processing apparatus according to Claim 1, wherein the plurality of methods are identified based on common sorting information corresponding to all the images acquired by the sorting information acquisition means.

[Claim 4]

The image processing apparatus according to Claim 1,

wherein the plurality of methods are identified based on a union of sorting information corresponding to the individual images acquired by the sorting information acquisition means. [Claim 5]

A program for causing a computer to function as:

image sequence acquisition means for acquiring an image sequence including a plurality of images;

sorting information acquisition means for analyzing the individual images included in the image sequence, and acquiring sorting information corresponding to the images on the basis of an analysis result; and

image sequence generation means for generating, based on the sorting information, one or a plurality of pieces of information indicating an image sequence which includes at least part of the plurality of images.