An air conditioner includes an air-conditioning unit to exchange heat between air in an interior space and an exterior space using an exchange medium flowing through the air-conditioning unit and/or to dehumidify the interior space. A control unit controls the air-conditioning unit to dehumidify the interior space using a plurality of dehumidifying temperatures and a plurality of dehumidifying time, when at least one dehumidifying time is preset for a corresponding dehumidifying temperature and when the preset dehumidifying time has expired the corresponding dehumidifying temperature is changed to a next dehumidifying temperature.
Fig. 1

10 AIR-CONDITIONING UNIT

50 CONTROL UNIT

20 INPUT UNIT

30 INTERNAL THERMOMETER

40 EXTERNAL THERMOMETER
AIR CONDITIONER, CONTROL METHOD THEREOF, AND DEHUMIDIFYING METHOD THEREOF

CROSS-REFERENCE TO RELATED APPLICATIONS


BACKGROUND

[0002] The present disclosure relates to an air conditioner, and more particularly, to an air conditioner having a dehumidifying function, a control method thereof, and a dehumidifying method thereof.

[0003] An air conditioner is a home appliance designed to condition air in an interior space, i.e., to conduct cooling and/or heating of air in the interior space. Recently, an air conditioner having a dehumidifying function to dehumidify the interior space has been on the market. However, the air conditioner with the dehumidifying function usually has insufficient dehumidifying capacity to dehumidify the whole interior space, or consumes too much electric energy to perform the function. Further, most of the air conditioners with the dehumidifying function have an operation algorithm in which the set temperature is maintained while performing the dehumidifying function. Using such operation algorithm makes a user feel too cold as the dehumidifying operation goes on.

SUMMARY

[0004] For instance, in a hot and humid weather, the user feels much more hotter due to the humidity in the air. Thus, the user may set the air conditioner at a temperature which will quickly cool the user and provide relief. However, once the humidity has been removed from the interior space, the user may feel cold. Also, the user may raise the temperature of the air-conditioner which results in the interior space becoming humid and hot again. Thus, the user may have to lower the temperature again. This activity inconveniences the user and because of the interior space temperature fluctuation, the user feels uncomfortable. Also, if the temperature of the interior space is too low, the user feels very uncomfortable when the user goes outdoors.

[0005] Accordingly, embodiments provide an air conditioner, a control method thereof, and a dehumidifying method thereof that are designed to dehumidify the interior space more efficiently and economically.

[0006] Embodiments also provide an air conditioner, a control method thereof, and a dehumidifying method thereof that are designed to dehumidify the interior space in a manner that the user will feel comfortable during the dehumidifying operation.

[0007] In one embodiment, an air-conditioning unit to exchange heat between air in an interior space and an exterior space using an exchange medium flowing through the air-conditioning unit and/or to dehumidify the interior space. A control unit controls the air-conditioning unit to dehumidify the interior space using a plurality of dehumidifying temperatures and a plurality of dehumidifying time, where at least one dehumidifying time is preset for a corresponding dehumidifying temperature and when the preset dehumidifying time has expired the corresponding dehumidifying temperature is changed to a next dehumidifying temperature.

[0008] In another embodiment, a dehumidifying method includes: determining by a control unit on whether a preset time has passed to dehumidify an interior space at a preset dehumidifying temperature; changing by the control unit the preset dehumidifying temperature to a next preset temperature if the preset time has passed; and repeating the determining step and the changing step until a preset maximum dehumidifying temperature is reached.

[0009] According to the embodiments, the interior space is dehumidified efficiently and provide a user with a more comfortable environment.

[0010] Further, power consumption for dehumidifying the interior space is reduced, enabling the interior space to be dehumidified more economically.

[0011] The details of one or more embodiments are set forth in the accompanying drawings and the description below. Other features will be apparent from the description and drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a schematic view illustrative of an embodiment of an air conditioner.

[0013] FIG. 2 is a flow diagram illustrative of a procedure of a control method of the air conditioner according to an embodiment.

[0014] FIG. 3 is a graphic chart illustrative of a comparison result of a dehumidifying efficiency between an embodiment and the related art.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0015] Reference will now be made in detail to the embodiments of the present disclosure, examples of which are illustrated in the accompanying drawings.

[0016] FIG. 1 is a schematic view illustrative of an embodiment of an air conditioner.

[0017] Referring to FIG. 1, the air conditioner carries out the operation of conditioning the air in the interior space, i.e., cooling and/or heating the air in the interior space. In the present embodiment, the air conditioner also carries out the operation of dehumidifying the interior space. The air conditioner includes an air-conditioning unit 10, an input unit 20, an internal thermometer 30, an external thermometer 40, and a control unit 50.

[0018] Particularly, the air-conditioning unit 10 is used for air-conditioning and/or dehumidifying the interior space. The air-conditioning unit 10 may include heat-exchange parts, e.g., a compressor, an external heat-exchanger, an expansion valve, an internal heat-exchanger, and the like. Air-conditioning and/or dehumidifying of the interior space is conducted by heat exchange between the cooling medium circulating through the air-conditioning unit 10 and the air of the interior and exterior spaces. The construction of an air-conditioning unit is well known in the art and a detailed explanation thereof will be omitted.
An operation of the air-conditioner will now be described. The input unit 20 receives a signal for air conditioning and/or dehumidifying of the interior space. As an example, the input unit 20 receives an input for selecting a mode to dehumidify the interior space and/or a dehumidifying temperature T0. Here, the temperature T0 indicates a dehumidifying temperature of the interior space that a user has selected. In another embodiment, the temperature T0 may be preset in the air conditioner.

The internal thermometer 30 detects the temperature of the interior space. The external thermometer 40 detects the temperature of the exterior space.

The control unit 50 controls the air-conditioning unit 10 to air-condition and/or dehumidify the interior space according to the input received by the input unit 20. For example, when the input unit 20 receives an input indicating the dehumidifying mode and/or the desired temperature T0, this information is forwarded to the control unit 50 which causes the air-conditioning unit 10 to cool and/or dehumidify the temperature of the interior space until the desired temperature T0, which may be a user selected temperature or a temperature preset in the air conditioner, is reached. Then, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at a dehumidifying temperature T, which is preset, for a preset dehumidifying time t, which may vary from the desired temperature T0.

As an example, the dehumidifying temperature T is set to increase incrementally. For example, the dehumidifying temperature T may be set in such a manner that, if the desired temperature T0 is set below 22°C, the dehumidifying temperature T is set to increase incrementally by one degree within the range from 22°C to 28°C. For example, if the desired temperature T0 is set in a range from 22°C to 27°C and includes a decimal, the dehumidifying temperature T is rounded off to the next highest integer, and then increased incrementally by one degree until a temperature of 28°C is reached. For example, if the desired temperature T0 exceeds 27°C, the dehumidifying temperature T is set to 28°C. and no incremental increase of the dehumidifying temperature T is performed. Exemplary table for the dehumidifying temperature T according to the desired temperature T0 is shown in Table 1 below.

Thus, for example, if the desired temperature T0 is 22°C, the dehumidifying temperature T is set to increase by one degree within the range from 22°C to 28°C. Thus, if the desired temperature T0 is 22°C, the dehumidifying temperature T is set to 22°C. which then increases to 23°C, to 24°C, to 25°C, to 26°C, and to 27°C. If the desired temperature T0 is 25°C, the dehumidifying temperature T is set to 25°C, which then increases to 26°C, to 27°C, and then to 28°C. For convenience of explanation, the dehumidifying temperatures, which are set to the range from 22°C to 28°C., will be hereinafter referred to as first to seventh dehumidifying temperatures T1, T2, T3, T4, T5, T6, and T7.

The dehumidifying temperature T may be compensated according to the temperature difference between the interior temperature detected by the internal thermometer 30 and the external temperature detected by the external thermometer 40. In the present embodiment, when the dehumidifying temperature T increases from 26°C to 27°C, by one degree, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5° C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°C., the dehumidifying temperature T is set to 28°C. and not 27°C., thus the dehumidifying temperature T increases by two degrees and not by one degree. In this instance, if the dehumidifying temperature T is 26°C., the interior space is dehumidified at the dehumidifying temperature T such that, if the temperature difference between the interior and the exterior is above 5°
TABLE 2

<table>
<thead>
<tr>
<th>Dehumidifying Temp. (T)</th>
<th>22°C</th>
<th>23°C</th>
<th>24°C</th>
<th>25°C</th>
<th>26°C</th>
<th>27°C</th>
<th>28°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehumidifying Time (t)</td>
<td>19 min</td>
<td>23 min</td>
<td>30 min</td>
<td>35 min</td>
<td>40 min</td>
<td>54 min</td>
<td>70 min</td>
</tr>
</tbody>
</table>

For example, at the first dehumidifying temperature T1, the dehumidifying time t1 is set to less than 21 minutes, preferably 19 minutes. At the second dehumidifying temperature T2, the dehumidifying time t2 is set ranging between 21 minutes and 26 minutes, e.g., 23 minutes. At the third dehumidifying temperature T3, the dehumidifying time t3 is set ranging between 26 minutes and 33 minutes, e.g., 30 minutes. At the fourth dehumidifying temperature T4, the dehumidifying time t4 is set ranging between 33 minutes and 38 minutes, e.g., 35 minutes. At the fifth dehumidifying temperature T5, the dehumidifying time t5 is set ranging between 38 minutes and 47 minutes, e.g., 40 minutes. At the sixth dehumidifying temperature T6, the dehumidifying time t6 is set ranging between 47 minutes and 62 minutes, e.g., 54 minutes. Finally, at the seventh dehumidifying temperature T7, the dehumidifying time t7 is set ranging above 62 minutes, e.g., 70 minutes. The individual dehumidifying time t may be set by the user according to the user preference and/or it may be set by the manufacturer. For convenience of explanation, the dehumidifying time t will be hereinafter referred to as first to seventh dehumidifying times t1 to t7 corresponding to the first to seventh dehumidifying temperatures T1 to T7, respectively.

A control method of the air conditioner according to an embodiment will now be described in detail with reference to the accompanying drawings.

Referring to FIG. 2 with reference to FIG. 1, the input unit 20 receives an input indicating a desired temperature T0 (S11). Here, the input unit 20 may receive the desired temperature T0 by the unit of 1°C, 0.5°C or 0.1°C.

The control unit 50 determines whether or not the desired temperature T0 received by the input unit 20 is below 22°C. (S13). If it is determined to be below 22°C, the dehumidifying temperature T is set to 22°C, i.e., the first dehumidifying temperature T1 (S15). Then, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at the first dehumidifying temperature T1.

Next, the control unit 50 determines whether the first dehumidifying time t1 has passed or not after dehumidifying the interior space started at the first dehumidifying temperature T1 (S17). If the first dehumidifying time t1 is determined to have passed, the dehumidifying temperature T is set to the second dehumidifying temperature T2, i.e., 23°C which may be an increase of one degree from the first dehumidifying temperature T1 (S19). Then, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at the second dehumidifying temperature T2.

The control unit 50 then determines whether a second dehumidifying time t2 has passed or not after dehumidifying the interior space at the second dehumidifying temperature T2 (S21). If the second dehumidifying time t2 is determined to have been passed, the dehumidifying temperature T is set to the third dehumidifying temperature T3, i.e., 24°C which may be an increase of one degree from the second dehumidifying temperature T2 (S23). Then, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at the third dehumidifying temperature T3. Similar measures may be taken for a third dehumidifying temperature T3 (S25), a fourth dehumidifying temperature T4 (S27), a fourth dehumidifying time t4 (S29), and a fifth dehumidifying temperature T5 (S31). That is, the dehumidifying temperature T is set in increase incrementally from the third, the fourth, to the fifth dehumidifying temperatures T3, T4, and T5. Note that, in the present embodiment, the dehumidifying temperatures are increased incrementally. However, in some embodiments, it may be desirable to increase the dehumidifying temperatures arbitrarily.

The control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at the third to fifth dehumidifying temperatures T3, T4, and T5. Similar to the above, the control unit 50 determines whether the respective third to fifth dehumidifying times t3 to t5 have passed or not after the start of dehumidification of the interior space at the respective third to fifth dehumidifying temperatures T3 to T5 (S25), (S29), and (S33). If it is determined that the respective third to fifth dehumidifying time has passed, steps S27, S31, and S35 are respectively performed.

In the present embodiment, at step S33, if the control unit 50 determines that the fifth dehumidifying temperature T5 has passed, the control unit 50 determines whether the temperature difference AT between the interior and exterior temperatures, which are respectively detected by the internal thermometer 30 and the external thermometer 40, is above 5°C or not (S35). At step S35 if the control unit 50 determines that the temperature difference AT is below 5°C, the dehumidifying temperature T is set to the sixth dehumidifying temperature T6 of 27°C. That increases by one degree from the third dehumidifying temperature T5 (S37). Next, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior space at the sixth dehumidifying temperature T6, and determines whether the sixth dehumidifying time t6 has passed or not after starting of dehumidifying the interior space at the sixth dehumidifying temperature T6 (S39).

At step S39, if the control unit 50 determines that the sixth dehumidifying time t6 has passed, the dehumidifying temperature T is set to the seventh dehumidifying temperature T7 (S41). Thus, the control unit 50 controls the air-conditioning unit 10 to dehumidify the interior at the seventh dehumidifying temperature T7. The control unit 50 determines whether the seventh dehumidifying time t7 has passed or not after dehumidifying of the interior at the seventh dehumidifying temperature T7 (S43). At step S43, if the control unit 50 determines that the seventh dehumidifying time t7 has passed, dehumidifying of the interior is termi-
nated. Alternatively, once the air-conditioning unit 10 starts to dehumidify the interior at the seventh dehumidifying temperature T7, i.e., 28°C, the control unit 50 maintains this temperature.

[0036] Meanwhile, if at step S35 the control unit 50 determines that the temperature difference ΔT is above 5°C, steps S41 and S43 are carried out. That is, the dehumidifying temperature T is set to the seventh dehumidifying temperature T7 of 28°C, that increases by two degrees from the fifth dehumidifying temperature T5, and the dehumidification of the interior is conducted at the seventh dehumidifying temperature T7 for the seventh dehumidifying time T7. Alternatively, once the air-conditioning unit 10 starts to dehumidify the interior at the seventh dehumidifying temperature T7, i.e., 28°C, the control unit 50 maintains this temperature. Thus, if the temperature difference ΔT is above 5°C, step S37 in which the dehumidifying temperature T is set to the sixth dehumidifying temperature T6, and S39 in which the dehumidification of the interior is conducted at the sixth dehumidifying temperature T6 for the sixth dehumidifying time T6 are omitted.

[0037] Meanwhile, at step S13, if the control unit 50 determines that the desired temperature T0 is not below 22°C, the control unit 50 determines whether the desired temperature T0 is below 23°C, i.e., between 22°C and 23°C (S45). At step S45, if the controller 50 determines that the desired temperature T0 ranges between 22°C and 23°C, steps S19 to S43 are carried out. Similarly, at step S45, if the control unit 50 determines that the desired temperature T0 ranges over 23°C, the control unit 50 determines whether the desired temperature T0 ranges between 23°C and 24°C, between 24°C and 25°C, between 25°C and 26°C, or between 26°C and 27°C, or not at respective steps (S47), (S49), (S51), and (S53). Then, the control unit 50 controls the air-conditioning unit to dehumidify the interior space using the plurality of dehumidifying temperatures starting from the desired temperature.

[0038] Referring now to FIG. 3, the dehumidifying efficiencies of the present embodiment and the related art are compared. In the drawing, A denotes the relative humidity of the interior when the interior is dehumidified according to the embodiment as time passes. B and C are also the relative humidity when the interior is dehumidified according to the related art as time passes. It can be seen that the relative humidity A is considerably reduced relative to those of the cases B and C. According to the present embodiment, the relative humidity is considerably reduced as compared to the related art, a more pleasant environment may be provided.

[0039] Further, according to the related art, the power of about 1900 W is consumed for dehumidifying the interior. However, according to the present embodiment, only the power of about 900 W, which corresponds to about 600 of the power consumption for the related art, is consumed for the dehumidification. Thus, according to the present embodiment, the dehumidification of the interior may be conducted more economically.

[0040] Although embodiments have been described with reference to a number of illustrative embodiments thereof, it should be understood that numerous other modifications and embodiments can be devised by those skilled in the art that will fall within the spirit and scope of the principles of this disclosure. More particularly, various variations and modifications are possible in the component parts and/or arrangements of the subject combination arrangement within the scope of the disclosure, the drawings and the appended claims. In addition to variations and modifications in the component parts and/or arrangements, alternative uses will also be apparent to those skilled in the art.

What is claimed is:

1. An air conditioner comprising: an air-conditioning unit to exchange heat between air in an interior space and an exterior space using an exchange medium flowing through the air-conditioning unit and/or to dehumidify the interior space; and a control unit to control the air-conditioning unit to dehumidify the interior space using a plurality of dehumidifying temperatures and a plurality of dehumidifying times, wherein at least one dehumidifying time is preset for a corresponding dehumidifying temperature and when the preset dehumidifying time has expired the corresponding dehumidifying temperature is changed to a next dehumidifying temperature.

2. The air conditioner of claim 1, wherein the control unit sets the next dehumidifying temperature that is higher than a previously set dehumidifying temperature.

3. The air conditioner of claim 1, wherein the control unit incrementally increases the dehumidifying temperature after a corresponding dehumidifying time has expired until a preset maximum dehumidifying temperature is reached.

4. The air conditioner of claim 1, further comprising an input unit to receive an input that indicates at least one dehumidification mode or a desired temperature.

5. The air conditioner of claim 4, wherein the control unit controls the air-conditioning unit to dehumidify the interior space using the plurality of dehumidifying temperatures starting from the desired temperature.

6. The air conditioner of claim 4, wherein the control unit controls the air-conditioning unit to dehumidify the interior space using the plurality of dehumidifying temperatures starting from a temperature preset in the air conditioner that is different from the desired temperature received at the input unit.

7. The air conditioner of claim 1, wherein at least one of the plurality of dehumidifying temperatures is preset.

8. The air conditioner of claim 1, wherein at least one dehumidifying time preset of one dehumidifying temperature is different from a dehumidifying time preset for another dehumidifying temperature.

9. The air conditioner of claim 1, wherein a preset time for a corresponding dehumidifying temperature becomes longer as a previously set dehumidifying temperature is changed to a next dehumidifying temperature.

10. The air conditioner of claim 1, wherein the preset time is selected from a range of time.

11. The air conditioner of claim 1, wherein the next dehumidifying temperature is increased higher than a preset dehumidifying temperature if a difference between a temperature of the interior space and a temperature of an exterior space is not within a predetermined degree.

12. An air conditioner comprising: an air-conditioning unit to exchange heat between air in an interior space and an exterior space using an exchange medium flowing through the air-conditioning unit and/or to dehumidify the interior space; an input unit to receive an input on which a start dehumidifying temperature is based; and a control unit to control the air-conditioning unit to dehumidify the interior space until the start dehumidifying
temperature is reached, the control unit then using a plurality of dehumidifying temperatures and a plurality of dehumidifying time to change the start dehumidifying temperature until a preset maximum dehumidifying temperature is reached, wherein at least one dehumidifying time is preset for a corresponding dehumidifying temperature and when the preset dehumidifying time has expired the corresponding dehumidifying temperature is changed to a next dehumidifying temperature.

13. The air conditioner of claim 12, wherein the control unit incrementally increases the dehumidifying temperature after a corresponding dehumidifying time has expired until the preset maximum dehumidifying temperature is reached.

14. The air conditioner of claim 12, wherein the preset time is selected from a range of time.

15. The air conditioner of claim 12, wherein the next dehumidifying temperature is increased higher than a preset dehumidifying temperature if a difference between a temperature of the interior space and a temperature of an exterior space is not within a predetermined degree.

16. The air conditioner of claim 12, wherein each of the plurality of the dehumidifying time is preset and corresponds to a dehumidifying temperature in the plurality of dehumidifying temperatures that are preset other than the preset maximum temperature which does not have a preset time.

17. A dehumidifying method comprises: determining by a control unit on whether a preset time has passed to dehumidify an interior space at a preset dehumidifying temperature; changing by the control unit the preset dehumidifying temperature to a next preset dehumidifying temperature if the preset time has passed; and repeating the determining step and the changing step until a preset maximum dehumidifying temperature is reached.

18. The dehumidifying method of claim 17, further comprises increasing by the control unit the preset time when the preset dehumidifying temperature is changed to the next preset dehumidifying temperature.

19. The dehumidifying method of claim 17, further comprises using by the control unit a preset dehumidifying temperature stored in an air conditioner that is different from a desired temperature selected by the user if the desired temperature is lower than the preset dehumidifying temperature stored in the air conditioner.

20. The dehumidifying method of claim 17, further comprises increasing a next dehumidifying temperature to be higher than the next preset dehumidifying temperature if a difference between a temperature of the interior space and a temperature of an exterior space is not within a predetermined degree.

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