determined as high door-opening frequency by a specified threshold, the door-opening frequency of the user A can be constantly determined as low throughout a day. When the door-opening frequency changes per unit-time length, an operating state of the refrigerator changes moment by moment. This can contribute to a deterioration in energy consumption performance.

[0007]

According to a method of operating the refrigerator in response to the user's usage conditions based on the number of door-opening times by the technique of Patent Literature 2, families such as double-income households where a day worker and a night worker coexist, which have been common in recent years, open and close the refrigerator door in no small numbers even at nighttime. As a result, in some cases, it is difficult to find a time period made up of a plurality of hours in which the user does not open the refrigerator. This creates a possibility that defrosting or similar operation performed during a time zone in which the user does not open the refrigerator cannot be performed throughout a day.

[0008]

These problems arise from inability of the refrigerator to predict a time period with low door-opening frequency based on the user's living conditions.

[0009]

Embodiments of the present disclosure seek to provide a refrigerator capable of predicting a time period in which a user opens the refrigerator with low frequency based on the user's living conditions.

Solution to Problem

[0010]

A refrigerator according to an embodiment of the present disclosure includes: a storage compartment including a door designed to open and close and being configured to cool and preserve stored items; a door opening-closing detector to detect opening and closing of the door of the storage compartment; a storage unit to receive data about opening and closing of the door detected with the door opening-

closing detector and store a number of times the door is opened and closed per given unit-time length for a given number of days; and a controller, wherein the controller calculates an average value for the given number of days that is an average of numbers of times the door is opened and closed each given unit-time length for the given number of days from numbers of door opening-closing times stored for every given unit-time lengths in the storage unit, the controller calculates a latest-time-lengths total value that is a sum of the average values for the given number of days of the numbers of door opening-closing times for latest time lengths specified from a starting point of each unit-time length for every unit-time length, the controller calculates an immediately following-time-lengths total value that is a sum of the average values for the given number of days of the numbers of door opening-closing times for immediately following time lengths specified from a starting point of each unit-time length for every unit-time length, and the controller determines, from among sectioned zones each being a sectioned zone of specified time lengths in which the storage compartment is opened and closed, a sectioned zone in which the storage compartment is opened and closed with low frequency based on one of or both of the latest-time-lengths total value and the immediately following-time-lengths total value.

Advantageous Effects of Invention

[0011]

In the refrigerator according to an embodiment of the present disclosure, the controller determines a sectioned zone of the specified time lengths in which the storage compartment is opened and closed with low frequency based on one of or both of the latest-time-lengths total value and the immediately following-time-lengths total value. Thus, the controller can predict a given time period in which a user opens the compartment door with low frequency based on the user's living conditions.

Brief Description of Drawings

[0012]

[Fig. 1] Fig. 1 is a perspective view illustrating a refrigerator according to Embodiment 1 of the present disclosure.

[Fig. 2] Fig. 2 is an elevation view illustrating the refrigerator according to Embodiment 1 of the present disclosure.