

Table of Contents

[Table of Contents](#)

[1. Introduction](#)

[1.1 Purpose](#)

[1.2 Scope](#)

[1.3 Definitions, acronyms and abbreviations](#)

[1.4 References](#)

[1.5 Overview](#)

[2. Overall description](#)

[2.1 Product perspective](#)

[2.2 Product functions](#)

[2.3 User characteristics](#)

[2.4 Constraints](#)

[2.5 Assumptions and dependencies](#)

[3. Specific requirements](#)

[3.1 External interfaces](#)

[3.2 Functions](#)

[3.2.1 Add alarm](#)

[3.2.2 Delete Alarm](#)

[3.2.3 Exit Standby](#)

[3.2.4 Run Alarm](#)

[3.3 Performance requirements](#)

[3.4 Logical database requirements](#)

[3.5 Design constraints](#)

[3.5.1 Standards compliance](#)

[3.6 Software system attributes](#)

[3.6.1 Reliability](#)

[3.6.2 Availability](#)

[3.6.3 Security](#)

[3.6.4 Maintainability](#)

[3.7 Organizing the specific requirements](#)

[3.7.1 System mode](#)

[3.7.2 User class](#)

[3.7.3 Objects](#)

[3.7.4 Feature](#)

[3.7.5 Stimulus](#)

[3.7.6 Response](#)
[3.7.7 Functional hierarchy](#)
[3.8 Additional comments](#)
[Appendixes](#)

[Index](#)

1. Introduction

1.1 Purpose

1.2 Scope

1.3 Definitions, acronyms and abbreviations

1.4 References

1.5 Overview

2. Overall description

2.1 Product perspective

2.2 Product functions

2.3 User characteristics

2.4 Constraints

2.5 Assumptions and dependencies

3. Specific requirements

3.1 External interfaces

- Touch activated button remote control
- Keys on the remote are as follows: 0-9 number pad with decimal point button, a four way directional pad for moving through menu items, adjusting volume, and scanning through radio, and a cancel and ok button.
- The remote will be external to the device

Our system links itself directly to an external interface from a commercially available third-party bed occupancy detector. This detector will be able to tell our system whether or not the customer is in their bed. The communications protocol interface offered by the third-party system and that we determined and well it will offer and what features it will provide has yet to be determined and what features it will provide. This interface will be used when deciding if alarms and/or radio should be turned on to wake up or notify the customer that the clock has reached a specified time.

3.2 Functions

3.2.1 Add alarm

Use Case Name	Add alarm
XRef	
Trigger	The user presses be add alarm button
Precondition	The system displays the alarms management window which allows the customer to edit alarms.
Basic Path	<ol style="list-style-type: none"> 1. the customer chooses what time they would like the alarm to be set off and what days they would like it to run. 2. the customer then selects what mode they would like the alarm to run in. modes include silent, calm, and wake up. 3. The customer chooses whether they would like an alarm tone or a specific radio station to come on. 4. When the customer has finished filling the form, the system will add this alarm to its set of alarms in the database. The alarm will be called when the specified time and date is reached.
Alternative Paths	None
Postcondition	The alarm has now been added to the clock and will run at specified time and date.
Exception Paths	At any time, the customer can choose to cancel adding alarm by moving to the bottom and selecting the cancel button. When the cancel button is pressed, the current window will be immediately escaped and no new alarms will be added to the database.
Other	None

3.2.2 Delete Alarm

Use Case Name	Delete alarm
XRef	
Trigger	The user presses be delete alarm button
Precondition	The system displays the alarms management window which allows the customer to edit alarms.

Basic Path	<ol style="list-style-type: none"> 1. The customer is presented with a confirmation dialog box to confirm that they would like to delete the alarm 2. If the alarm's deletion is confirmed, the alarm is deleted and the customer is returned to the alarms management menu
Alternative Paths	None
Postcondition	The alarm has now been deleted and will not trigger
Exception Paths	At the time when the confirmation dialog box comes up, the customer can press the cancel button to exit from deleting the alarm.
Other	None

3.2.3 Exit Standby

Use Case Name	Exit standby
XRef	
Trigger	The user presses any button
Precondition	The clock is asleep and displaying the time.
Basic Path	The customer is presented with the settings main menu
Alternative Paths	None
Postcondition	None
Exception Paths	None
Other	None

3.2.4 Run Alarm

Use Case Name	Run alarm
XRef	
Trigger	A specified alarm time has been reached

Precondition	None
Basic Path	
Alternative Paths	The user can press any button other than ok to snooze the alarm
Postcondition	The alarm has now been deleted and will not trigger
Exception Paths	At the time when the confirmation dialog box comes up, the customer can press the cancel button to exit from deleting the alarm.
Other	None

3.3 Performance requirements

Number of user customizable radio presets and alarms

3.4 Logical database requirements

3.5 Design constraints

3.5.1 Standards compliance

3.6 Software system attributes

3.6.1 Reliability

3.6.2 Availablilty

3.6.3 Security

N/A

3.6.4 Maintainability

3.7 Organizing the specific requirements

3.7.1 System mode

The Clock will feature a setup mode and a standard mode. The only time that the Clock is in setup mode is when it is first used. In setup mode the Clock will ask the user to input things like time, date, alarm setting and radio setting. The Clock will then go into standard mode and stay in standard mode unless the clock is reset. In standard mode the user can use any of the clocks features.

3.7.2 User class

The Clock will only have one user profile. The clock will not respond differently for different users.

3.7.3 Objects

The Clock will have a screen 4 inches by 7 with a resolution of 1024x768 pixels. It will have a bed sensor developed by a third party. It will also have a remote with; Up, Down, Left, Right arrows, Numbers 0-9 with 1-7 also labeled with the days of the week, a decimal point, Ok and Cancel buttons.

3.7.4 Feature

3.7.4.1 Time

The Clock will have a Time feature that keeps track of the time. The time will be displayed on the main menu at all times. When in other menus the time will be displayed at the top of the screen. The Time is initially set in the setup mode. The time can be changing by going into the options and selecting set time.

3.7.4.2 Date

The Clock will have a date feature that will keep track of the day, month and year. The date will be displayed in the main menu to the left of the time. The data will be initially set in setup mode. The date can then be changed by going into the options and selecting change date.

3.7.4.3 Alarm

The Clock will have a alarm feature. The Alarm feature can be turned on by going into setting and choosing alarm settings. In the Alarming settings you can specify the day and time you want the alarm to go off. When the alarm goes off the Clock screen changes the the alarm screen as seen in /* Picture of alarm screen reference */ . The user will then have the option to either snooze or turn off the alarm by pressing either the /* Can't remember what button is for snooze */ to snooze or Cancel button to turn off the alarm. If the snooze option is selected it will then go back to the main screen until the alarm goes off again. The snooze length is set in advanced alarm options in the settings menu. If the user chooses cancel the alarm will be turned of and the clock will return to the main screen.

3.7.4.4 Radio

The Clock will have a radio function. To go into the radio menu the user must go into setting and then select radio. Once in the radio menu the user can Turn on the radio by pressing ok. The user can scan the channels using the left and right arrows and change the volume by using the up and down arrows. The user can also use the numbers 0 - 9 to select their radio preset and can set a new preset by holding numbers 0 - 9. /* I forget how to select station */. The user can then exit the radio mode by pressing cancel. The radio will continue to play outside of radio mode but the only available functions will be volume and changing station using presets. The current station will be displayed at the top of the screen at all times.

3.7.4.5 Setup

When first used the Clock radio will be in setup mode. Setup mode will take the user through setting that need to be set. Time will be initially set, data will be initially set as well as some alarm options. It will take the user on a brief tour of the system and tell them how the system works.

3.7.4.6 Standard mode

The Standard mode is the mode the is always in after it has completed setup mode. In standard mode the user can go through the settings menu and use all functions of the clock.

3.7.5 Response

3.7.6 Functional hierarchy

screen menus

3.8 Additional comments

Appendixes

Index