How to set alarm in Java ME

The MIDlet given below is a simple alarm clock - it will display a `DateField` and prompt for a day and time. Once that day/time is reached, the application will sound an alarm and show a dialog box.

```
import java.util.*;
import javax.microedition.midlet.*;
import javax.microedition.lcdui.*;
import java.util.Timer;
import java.util.TimerTask;



public class Alarm extends MIDlet implements ItemStateListener,
        CommandListener {
    private Display display; // Reference to display object
    private Form fmMain; // The main form
    private Command cmAlarm; // Start the timer
    private Command cmReset; // Reset to current date/time
    private Command cmExit; // Exit the MIDlet
    private DateField dfAlarmTime; // How long to sleep
    private int dateIndex; // Index of the DateField on the Form
    private Date currentTime; // Current time...changes when pressing reset
    private Timer tm; // The timer - keeps track of system time
    private AlarmTimer tt; // The task
    private boolean dateOK = false; // Was the user input valid?

    public Alarm() {
        display = Display.getDisplay(this);

// The main form
        fmMain = new Form("When to sound the alarm:");

// Save today's date
        currentTime = new Date();

// DateField with todays date as a default
        dfAlarmTime = new DateField("", DateField.DATE_TIME);
        dfAlarmTime.setDate(currentTime);

// All the commands/buttons
        cmAlarm = new Command("Sleep", Command.SCREEN, 1);
        cmReset = new Command("Reset", Command.SCREEN, 1);
        cmExit = new Command("Exit", Command.EXIT, 1);

// Add to form and listen for events
        dateIndex = fmMain.append(dfAlarmTime);
        fmMain.addCommand(cmAlarm);
        fmMain.addCommand(cmReset);
        fmMain.addCommand(cmExit);
        fmMain.setCommandListener(this);
        fmMain.setItemStateListener(this);
    }

    public void startApp() {
```


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```
        display.setCurrent(fmMain);
    }

    public void pauseApp() {
    }

    public void destroyApp(boolean unconditional) {
    }

    public void itemStateChanged(Item item) {
        if (item == dfAlarmTime) {
// If the user selected date and/or time that is earlier
// than today, set a flag. We are using getTime()
// method of the Date class, which returns the # of
// milliseconds since January 1, 1970
            if (dfAlarmTime.getDate().getTime() < currentTime.getTime())
                dateOK = false;
            else
                dateOK = true;
        }
    }

    public void commandAction(Command c, Displayable s) {
        if (c == cmAlarm) {
            if (dateOK == false) {
                Alert al = new Alert("Unable to set alarm",
                        "Please choose another date and time.", null, null);
                al.setTimeout(Alert.FOREVER);
                al.setType(AlertType.ERROR);
                display.setCurrent(al);
            } else {
// Create a new timer
                tm = new Timer();
                tt = new AlarmTimer();

// Amount of time to delay
                long amount = dfAlarmTime.getDate().getTime() -
                        currentTime.getTime();
                tm.schedule(tt,amount);

// Remove the commands
                fmMain.removeCommand(cmAlarm);
                fmMain.removeCommand(cmReset);

// Remove the DateField
                fmMain.delete(dateIndex);

// Change the Form message
                fmMain.setTitle("Sleeping...");
            }
        } else if (c == cmReset) {
// Reset to the current date/time
            dfAlarmTime.setDate(currentTime = new Date());
        } else if (c == cmExit) {
            destroyApp(false);
            notifyDestroyed();
        }
```


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```
    }

// Handle the timer task
    private class AlarmTimer extends TimerTask {
        public final void run() {
            Alert al = new Alert("Time to wake up!");
            al.setTimeout(Alert.FOREVER);
            al.setType(AlertType.ALARM);
            AlertType.ERROR.playSound(display);
            display.setCurrent(al);

// Cancel this timer task
            cancel();
        }
    }
}
```


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