Krono

Oct 28, 2017

Team Leo

Abstract

We have created a Timetable Scheduler Android app, Krono which gives reminders for classes, tutorials, holidays, exams, etc. to IIT Bombay students with a lot more features.

Based on the courses selected by the users from our database (which we acquire from ASC) Krono creates events in **one click** corresponding to the selected course. It shows an agenda view and a weekly overview of events with different color schemes for different type of events e.g., classes, tutorials, labs, assignment deadlines, exams, and user-created events; and sets reminders according to the user.

Krono has a list of holidays that are meant for IIT Bombay students only (taken from IITB holidays list). We have also taken care of any changes in venue or timing of classes and cancellation of a class.

Krono also provides an interesting feature of Institute events in which user can see events of IIT Bombay just with one click.

Motivation

We are making this application because we felt a strong need for a powerful yet user-friendly mobile app to manage academic schedule, which is tailor-made for students of IIT-Bombay.

Problem Statement

To make an Android application that stores events related to classes, tutorials, events, etc. to deliver notifications, set reminders and also implement features like adding courses, getting institute events, silent mode during classes to aid IIT Bombay students.

Literature Survey

There exist some Android apps like Google Calendar, Timetable, etc that have some of these functionalities like reminders, timetables, etc.

Studious app does provide color coding schemes (but not so good).

But none of these apps provides specialization for IIT-B students, as they don't have add courses feature, different categories like classes, tutorials, deadlines, and exams. Also, color coding schemes, list of holidays for our Institute are not provided by these apps. Above all, they demand a lot of user input.

Software and Hardware Requirements

I. Software & Programming Languages

We will be using the following software :-

1. **Android Studio** for developing the app
2. **SQLite** for databases
3. **GIT** for collaboration and version control
4. Microsoft **Azure** Platform
5. GNU tools like **awk, sed** etc

The following programming languages will be used :-

1. JAVA
2. XML
3. Python

II. Hardware

Any touchscreen Android phone with Android 4.2 Jellybean or above.

(Sorry, iOS users, but we don't develop for snobs)

Implementation

Initially, the user will select his courses from our database which we have acquired from ASC. Then Krono will save the timings, venue and all other details related to a class, and using Android's *Calendar Provider API*, create reminders for these classes. After that, the user has to tell the Krono about his tutorials or labs which are not mentioned on asc. There will be a color coding for events like classes, tutorials, labs,

assignment deadlines, exams and user created events and reminders. Here the user has the right to set his/her own reminder time and color coding.

Krono comes with holidays for the current year from IIT Bombay Holidays List.

Then as the semester proceeds, the user can tell Krono about his assignment deadlines, exams or any changes in venue or timing of his classes. In case a class gets canceled due to some reason, the user can delete that class for that particular date.

Krono will automatically put the phone on silent mode when a class, tutorial, lab or exam starts. The user can select in which of these events they want this automatic behaviour to be enabled.

Krono also provides an interesting feature of Institute events in which user can see events from the IIT Bombay Calendar and the CSE Department Calendar with just one click.

Deliverables

Features **mentioned** in our proposal:-
1) Adding courses to calendar with timings automatically
2) Customizable color coding of event categories
3) Week view
4) Holidays list according to IITB holidays
5) Muting automatically in class durations
6) Sharing between users
7) Backup to Google Drive
8) Agenda view
9) Add/edit/delete events and reminders
10) Customizable Alert times according to category
11) Attendance feature

Features **not** present in final project :-
1) Attendance feature
2) Sharing between users
3) Backup to Google Drive

Extra feature in final project:-
1) Institute events scraped from web calendars

Programming References

https://developer.android.com
https://stackoverflow.com
https://stackoverflow.com/questions/31096275/how-to-remove-app-title-from-toolbar
https://stackoverflow.com/questions/6239163/android-checkable-menu-item
https://stackoverflow.com/questions/5271387/get-color-int-from-color-resource
http://medienstudio.net/development-en/webseiten-scrapen-mit-azure-webjobs-node-js-jquery-async-js-gizp/?lang=en
https://medium.com/@ali_oguzhan/how-to-use-scrapy-with-django-application-c16fabd0e62e
https://blogs.msdn.microsoft.com/cdndevs/2015/05/21/python-and-data-sql-database-on-azure-as-a-data-source-for-python-applications/

https://lnx.azurewebsites.net/connecting-python-application-to-azure-database-for-postgresql/

https://docs.microsoft.com/en-us/azure/app-service/app-service-web-get-started-python

https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-python

https://docs.microsoft.com/en-us/azure/cosmos-db/import-data

http://timmyreilly.azurewebsites.net/connecting-your-azure-web-app-to-a-database-using-application-settings/

https://blogs.msdn.microsoft.com/appserviceteam/2016/08/18/announcing-mysql-in-app-preview-for-web-apps/

https://docs.microsoft.com/en-us/azure/mysql/connect-python

https://github.com/mkleehammer/pyodbc/wiki/Objects

https://alysivji.github.io/flask-part2-building-a-flask-web-application.html

https://www.crummy.com/software/BeautifulSoup/bs4/doc/

https://pypi.python.org/pypi/azure

https://docs.microsoft.com/en-us/sql/connect/python/pyodbc/step-3-proof-of-concept-connecting-to-sql-using-pyodbc

https://docs.microsoft.com/en-za/azure/app-service/web-sites-create-web-jobs#CreateScheduledCRON

https://stackoverflow.com/questions/2743070/remove-non-ascii-characters-from-a-string-using-python-django

https://stackoverflow.com/questions/10865483/print-results-in-mysql-format-with-python

http://gothos.info/2013/02/creating-reports-with-sqlite-python-and-prettytable-2/

https://ruslanspivak.com/lsbaws-part1/

http://www.geeksforgeeks.org/get-post-requests-using-python/

http://flask.pocoo.org/docs/0.12/api/#flask.Request

http://docs.python-requests.org/en/latest/user/quickstart/#make-a-request

https://www.toptal.com/python/pythons-wsgi-server-application-interface

https://www.tutorialspoint.com/flask/flask_quick_guide.htm

https://www.androidhive.info/2013/07/android-expandable-list-view-tutorial/

http://www.vogella.com/tutorials/AndroidListView/article.html#tutorial_twolistitems

https://stackoverflow.com/questions/29273829/building-an-infinitely-scrollable-calendar-like-view-in-android

https://developer.android.com/guide/topics/providers/calendar-provider.html

https://stuff.mit.edu/afs/sipb/project/android/docs/guide/topics/providers/calendar-provider.html

https://www.grokkingandroid.com/androids-calendarcontract-provider/

http://www.zoftino.com/how-to-read-and-write-calendar-data-in-android

https://www.programcreek.com/java-api-examples/index.php?api=android.provider.CalendarContract

https://stackoverflow.com/questions/16242472/retrieve-the-default-calendar-id-in-android

https://jimblackler.net/blog/?p=151

https://www.developerfeed.com/how-to-get-a-list-of-calenders-names-in-android/

https://stackoverflow.com/questions/5770219/how-to-set-the-calendar-in-android-for-particular-hour

https://medium.com/@dlkanth07/android-calendar-provider-an-untold-story-about-recurring-events-and-event-exceptions-f5d37dcb1698

https://stackoverflow.com/questions/5976098/how-to-set-a-reminder-in-android

https://android.googlesource.com/platform/packages/apps/Calendar.git/+/master/src/com/android/calendar

https://github.com/code-troopers/android-betterpickers

https://stackoverflow.com/questions/9157504/put-a-progressbar-on-actionbar

https://android-arsenal.com/details/1/4401

https://stackoverflow.com/questions/27413468/set-onclicklistener-for-multiple-textviews-in-multiple-rows-of-a-listview

https://stackoverflow.com/questions/3995215/add-and-remove-views-in-android-dynamically

https://stackoverflow.com/questions/28679833/how-to-check-which-editext-textwatcher-listener-is-called-in-dynamically-created

https://github.com/PrivacyApps/calendar-import-export

https://stackoverflow.com/questions/4139288/android-how-to-handle-right-to-left-swipe-gestures

https://github.com/alamkanak/Android-Week-View

https://github.com/hidroh/calendar

https://github.com/alamkanak/Android-Week-View/

https://github.com/rparkins999/CalendarTrigger

https://github.com/RemiNV/CalendarMute

https://stackoverflow.com/questions/39151453/in-android-7-api-level-24-my-app-is-not-allowed-to-mute-phone-set-ringer-mode

https://github.com/Tibolte/AgendaCalendarView

https://github.com/jgilfelt/android-sqlite-asset-helper

https://stackoverflow.com/questions/14118309/how-to-use-search-functionality-in-custom-list-view-in-android

https://developer.android.com/training/search/search.html

https://inducesmile.com/android/android-search-dialog-implementation-example/

https://developer.android.com/guide/topics/search/search-dialog.html

https://www.grokkingandroid.com/android-tutorial-adding-suggestions-to-search/

https://inducesmile.com/android/android-search-dialog-implementation-example/#

http://www.javahelps.com/2015/04/import-and-use-external-database-in.html

https://developer.android.com/training/tv/playback/onboarding.html

https://github.com/pepperonas/MaterialDialog

https://code.tutsplus.com/tutorials/creating-onboarding-screens-for-android-apps--cms-24465

http://blog.iamsuleiman.com/onboarding-android-viewpager-google-way/

https://github.com/apl-devs/AppIntro

https://www.youtube.com/watch?v=orcpzMo7igQ

https://android.googlesource.com/platform/packages/apps/Calendar/+/nougat-release/src/com/android/calendar/month/MonthByWeek Adapter.java

https://github.com/romannurik/Android-MonthCalendarWidget

https://android.googlesource.com/platform/packages/apps/Calendar/+/nougat-release/src/com/android/calendar/month/MonthByWeek Adapter.java

https://developer.android.com/reference/android/support/design/widget/FloatingActionButton.html