Android alarmmanager schedule notification

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Alarm alerts (based on the AlarmManager class) give you the ability to perform operations based on time outside the app's life. For example, you can use an alarm to initiate a long-term operation, such as running a service once a day to download a weather forecast. Anxiety has these characteristics: They allow you to shoot Intentions at set times and/or intervals. You can use them in conjunction with broadcast receivers to run services and perform other operations. They work outside of your app, so you can use them to run events or activities even if your app isn't working, and even if the device itself is asleep. They can help you minimize your app's resource needs. You can plan operations without relying on timers or continuously running background services. Note: For synchronization operations that are guaranteed to occur over the life of the application, you should instead use the Handler class in conjunction with Timer and Stream. This approach gives Android better control over system resources. Understanding trade-offs Repeated anxiety is a relatively simple mechanism with limited flexibility. This may not be the best choice for your app, especially if you need to call network operations. Poorly designed alarms can cause battery to leak and put a significant strain on servers. A common scenario for running an off-life operation is to synchronize data with the server. This is a case where you may be tempted to use a repetitive alarm. But if you have a server that accepts your app's data, using Google Cloud Messaging (GCM) in conjunction with a synchronization adapter is a better solution than AlarmManager. The synchronization adapter gives you all the same planning options as AlarmManager, but it offers you significantly more flexibility. For example, synchronization may be based on a message of new data from a server/device (see Running a sync adapter for detailed information), user activity (or inactivity), time of day, and so on. Watch related videos at the top of this page for a detailed discussion of when and how to use the GCM adapter and synchronization. The alarm does not work when the device is idle in Doze mode. Any scheduled alarms will be delayed until the device leaves Doze. If you need to make sure your work is completed, even if the device is idle there are several options. You can use the AndAllowWhileIdle set or setExactAndAllowWhileIdle to ensure that the alarm will be performed. Another option is to use the new WorkManager API, which is built for background work alone or periodically. For more information, see WorkManager Task Schedule. Best Practices Every Choice when designing a repetitive alarm can have implications in the way your app uses (or abuses) system resources. For example, imagine a popular app that syncs with the server. If the synchronization operation is based on the synchronization time and each of each in sync at 11 p.m., the load on the server can lead to a high delay or even a denial of service. Follow these best practices when using alarms: Add randomness (shaking) to any network queries that cause repetitive alarms: Do any localized work when the alarm is triggered. Loca locking means everything that doesn't work on the server or doesn't require data from the server. At the same time, plan an alarm that contains a network asking for a shoot at some random time period. Keep the alarm frequency low. Do not wake up the device unnecessarily (this behavior is determined by the type of alarm, as described in Select Type of Alarm). Don't make the alarm time more accurate than it should be. Use theInexactRepeating set instead of the Repeating set. When you use setInexactRepeating, Android syncs repetitive alarms from multiple apps and launches them simultaneously. This reduces the total number of times the system has to wake up the device, thereby reducing battery leakage. According to Android 4.4 (API Level 19), all repetitive alarms are non-effective. Note that while setInexactRepeating is an improvement over setRepeating, it can still suppress the server if each instance of the application hits the server around the same time. So, for network queries, add some randomness to your anxiety, as mentioned above. Avoid basing your alarm clock at the hour time if possible. Repeated alarms, based on the exact time of the trigger, do not scale well. Use ELAPSED_REALTIME if you can. Different types of alarms are described in more detail in the next section. Set a recurring alarm As described above, repetitive alarms are a good choice for scheduling regular events or analyzing data. Repeated alarm has the following characteristics: the type of alarm. For more discussion see the trigger time. If the trigger time indicated in the past, the alarm immediately goes off. Alarm interval. For example, once a day, every hour, every 5 minutes, and so on. Expected intention, which is triggered when the alarm is triggered. When you set a second alarm that uses the same deferred intent, it replaces the original alarm. To undo PendingIntent, go FLAG_NO_CREATE to PendingIntent.getService (if it exists) and then transfer this intention to AlarmManager.cancel (): val alarmManager and context.getSystemService (Context.ALARM_SERVICE) how? AlarmManager val pendingIntent - PendingIntent.getService (context, requestId, intention, если (pendingIntent ! - null - alarmManager !) - alarmManager.cancel (pendingIntent) - AlarmManager alarmManager (AlarmManager) context.getSystemService (Context.ALARM_SERVICE); В ожиданииintent pendingIntent - PendingIntent.getService (контекст, requestId, намерение, PendingIntent.FLAG_NO_CREATE); если (pendingIntent! - null и alarmManager! - null) null) Note: If PendingIntent was created with FLAG_ONE_SHOT, it cannot be cancelled. Choose the type of alarm One of the first considerations when using repetitive alarm is what its type should be. There are two common types of alarm clocks: real time and real-time hours (RTC). The real-time period uses the time from the moment the system is loaded as a reference, and the watch uses UTC (wall clock) time in real time. This means that real-time time is appropriate to set a time-based alarm system (e.g., an alarm that triggers every 30 seconds) because it does not depend on time zone/lock. The type of watch in real time is better suited to alarms that depend on the current locale. Both types have a wake-up version that is said to wake up the device's processor if the screen is off. This ensures that the alarm will be ready at the scheduled time. This is useful if your app is time-dependent, for example, if it has a limited window to perform a specific operation. If you don't use the wake-up version of your type of alarm, then all repeated alarms will brag when your device is next awake. If you just need an alarm to work at a certain interval (for example, every half hour), use one of the expiring real-time types. In general, it is the best choice. If you need your alarm to shoot at certain times of day, then choose one of the watch-based real-time watch types. Please note, however, that this approach may have some drawbacks - the app may be poorly translated to other locations, and if a user changes the device's time settings, it can lead to unexpected behavior in your app. Using real-time type alarm clocks also doesn't scale well as mentioned above. We encourage you to use the wake-up call in real time if you can. Here's a list of types: ELAPSED_REALTIME-Launches waiting intention depending on the amount of time since the device was loaded, but not wake up the device. The past time includes any time during which the device has slept. ELAPSED_REALTIME_WAKEUP -Wake up the device and launches the pending intent after a specified period of time since the device was loaded. RTC-Launches the expected intent at the specified time, but does not wake up the device. RTC_WAKEUP-Wake device to ignite the pending intention at the specified time. Examples of real-time alarms here are a few examples of ELAPSED_REALTIME_WAKEUP use. Wake up the device to light the alarm in 30 minutes, and every 30 minutes after that: / Hope your alarm have a lower frequency than that! alarmMgr?. setInexactRepeating (AlarmManager.ELAPSED_REALTIME_WAKEUP, SystemClock.elapsedRealtime () - AlarmManager.INTERVAL_HALF_HOUR, AlarmManager.INTERVAL_HALF_HOUR, alarmIntent) / I hope your alarm will have a lower frequency than this! alarmMgr.setInexactRepeating (AlarmManager.ELAPSED_REALTIME_WAKEUP, SystemClock.elapsedRealtime() SystemClock.elapsedRealtime() AlarmManager.INTERVAL_HALF_HOUR, disturbing); Wake up the device to ignite a one-time (non-repetitive) alarm in one minute: private var alarmMgr: AlarmManager? - zero private lateinit var alarmIntent: PendingIntent ... alarmMgr - context.getSystemService (Context.ALARM_SERVICE) as alarmManager alarmIntent - Intention (context, AlarmReceiver::class.java). Let - Intention - PendingIntent.getBroadcast (context, 0, intention, 0) - alarmMgr?. set (AlarmManager.ELAPSED_REALTIME_WAKEUP, SystemClock.elapsedRealtime () Nos. 60 and 1000, alarmIntent) private AlarmManager alarmMgr; Private PendingIntent alarms; ... alarmMgr (AlarmManager)context.getSystemService (Context.ALARM_SERVICE); Intention of intent - new intention (context, AlarmReceiver.class); alarmIntent - PendingIntent.getBroadcast (context, 0, intention, 0); Set the alarm at 8:30 a.m. alarmMgr.set (AlarmManager.ELAPSED_REALTIME_WAKEUP, SystemClock.elapsedRealtime() Nos. 60 and 1000, alarmIntent); Examples of a real-time alarm clock Here a few examples of using RTC_WAKEUP. Wake up the device to light the alarm at about 14:00, and repeat once a day at the same time: / Set the alarm to start at about 2:00 pm Val Calendar: Calendar and Calendar.getInstance ().. Apply - timeInMillis - System.currentTimeMillis (Calendar.HOUR_OF_DAY, 14) / With the setInexactRepeating(), you must use one of the interval AlarmManager / Constants - in this case, AlarmManager.INTERVAL_DAY. alarmMgr?. setInexactRepeating (AlarmManager.RTC_WAKEUP, calendar.timeInMillis, AlarmManager.INTERVAL_DAY, alarmIntent) / Set the alarm to start at about 2 p.m. Calendar Calendar - Calendar.getInstance calendar.setTimeInMillis (System.currentTimeMillis()); calendar.set (Calendar.HOUR_OF_DAY, 14); With the EinexactRepeating set, you should use one of the AlarmManager intervals / constants - in this case, AlarmManager.INTERVAL_DAY. alarmMgr.setInexactRepeating (AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(), AlarmManager.INTERVAL_DAY, alarmIntent); Wake up the device to light the alarm at exactly 8:30 a.m., and every 20 minutes after that: private var alarmMgr: AlarmManager? - zero private lateinit var alarmIntent: PendingIntent ... alarmMgr - context.getSystemService (Context.ALARM_SERVICE) as AlarmManager alarmIntent - Intention (context, AlarmReceiver::class.java). Let - Intention - PendingIntent.getBroadcast (context, 0, intention, 0) / Set the alarm to start at 8:30 a.m. val calendar: Calendar and Calendar.getInstance ()./ setRepeating () allows you to specify the exact user interval - in this case / 20 minutes. alarmMgr?. setRepeating (AlarmManager.RTC_WAKEUP, calendar.timeInMillis, 1000 - 60 - alarmIntent) частный AlarmManager alarmMgr; частные PendingIntent сигнализации; ... alarmMgr (AlarmManager)context.getSystemService (Context.ALARM_SERVICE); Намерения Намерения New intention (context, AlarmReceiver.class); alarmIntent - PendingIntent.getBroadcast (context, 0, intention, 0); Set the alarm to start at 8:30 a.m. Calendar and Calendar.getInstance calendar.setTimeInMillis (System.currentTimeMillis()); calendar.set (Calendar.HOUR_OF_DAY, 8); calendar.set MINUTE, 30); setRepeating allows you to specify the exact user interval - in this case, if you're 20 minutes. alarmMgr.setRepeating (AlarmManager.RTC_WAKEUP, calendar.getTimeInMillis(), 1000 and 60 x 20, alarmIntent); Decide how accurate your alarm should be, as described above, choosing the type of alarm is often the first step in setting up an alarm. Another difference is how accurate you need your anxiety to be. For most applications, setInexactRepeating is the right choice. Using this method, Android syncs several non-operational repetitive alarms and triggers them simultaneously. This reduces battery leakage. For a rare application that has strict time requirements, for example, the alarm should run at exactly 8:30 a.m., and every hour for an hour after that - use setRepeating. But you should avoid using accurate alarms if possible. With the SeexactRepeating set, you can't specify the custom interval as you can with setRepeating. You have to use one of the interval constants, such as INTERVAL_FIFTEEN_MINUTES, INTERVAL_DAY and so on. See AlarmManager for the full list. Cancel the alarm Depending on your app, you can turn on the ability to cancel the alarm. To cancel the alarm, call undo () by the alarm manager, passing in PendingIntent you no longer want to fire. For example: / If you set an alarm, cancel it. alarmMgr?. cancel (alarm) / If the alarm is set, cancel it. If (alarmMgr! - null) - alarmMgr.cancel (alarmIntent); Start the alarm when the device restarts by default, all alarms are canceled when the device is turned off. To prevent this from happening, you can design an app to automatically restart the repetitive alarm if the user reboots the device. This ensures that AlarmManager will continue to do its job without having to manually restart the alarm. Here are the steps: Set RECEIVE_BOOT_COMPLETED permissions in the app's manifest. This allows your app to receive ACTION_BOOT_COMPLETED that is streamed after the system ends downloading (this only works if the app has already been launched by the user at least once): zlt;uses-permission android:name' android.permission.RECEIVE_BOOT_COMPLETED/lt;lt;use-permission'gt; Implementation Of BroadcastReiverce to receive SampleBootReceiver class : BroadcastReceiver ( ) - override pleasure onReceive (context: Context, Intention: Intention) - if (intention.action - android.intent.action.BOOT_COMPLETED) @Override -/ Set the alarm here. In here. Set the alarm here. Add the receiver to your app's manifest file with the Intention Filter, zlt;receiver android:name. SampleBootReceiver android ACTION_BOOT_COMPLETED android.intent.action. BOOT_COMPLETED: This means that the receiver will not be called if the app does not explicitly turn it on. This prevents the undue name of the download receiver. You can turn on the receiver (for example, if the user sets the alarm) as follows: val receiver - ComponentName (context, SampleBootReceiver::class.java) context.packageManager.setComponentEnabledSetting (receiver, PackageManager.COMPONENT_ENABLED_STATE_ENABLED, PackageManager.DONT_KILL_APP) Componentname Receiver - new ComponentName (context, SampleBootReceiver).; PackageManager pm - context.getPackageManager(); pm.setComponentEnabledSetting (receiver, PackageManager.COMPONENT_ENABLED_STATE_ENABLED, PackageManager.DONT_KILL_APP) Once you turn the receiver on this way, it will remain on even if the user restarts the device. In other words, the software turn on the receiver overlaps the manifesto settings, even when rebooted. The receiver will remain on until the app disables it. You can disable the receiver (for example, if the user cancels the alarm) as follows: val receiver - ComponentName (context, SampleBootReceiver::class.java) context.packageManager.setComponentEnabledSetting (receiver,

PackageManager.COMPONENT_ENABLED_STATE_DISABLED, PackageManager.DONT_KILL_APP) ComponentName receiver - new ComponentName (context, SampleBootReceiver.class); PackageManager pm - context.getPackageManager(); pm.setComponentEnabledSetting (receiver, PackageManager.COMPONENT_ENABLED_STATE_DISABLED, PackageManager.DONT_KILL_APP); The Doze and App Standby Doze and App Standby were introduced to Android 6.0 (API Level 23) in an attempt to extend the battery life of the device. When the device is in Doze mode, any standard alarms will be delayed until the device is out of Doze mode or the service window opens. If you have to have an alarm even in Doze mode you can use either setAndAllowWhileIdle () or setExactAndAllowIdle (). Your app will go into App Waiting mode when it's idle, which means that the user hasn't used it for a certain period of time and the app doesn't have a foreground of the process. When the app is in App Standby the alarms are delayed in the same way as in Doze mode. This restriction is removed when the app is no longer idle or The device is connected to the power grid. For more information on how your apps affect these modes, read Optimization for Doze and App Standby. Standby. Expectations. how to schedule a notification using alarmmanager android