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My Prayer Times

Description

My Prayer Times is an application that provides muslims all over the world with accurate daily prayer times. It provides prayer times for Fajr, Zuhr, Asr, Maghrib and Isha with different methods of calculation. It also provides the user with Qibla compass that accurately provides the user with the direction of prayer from his location. It provides prayer times for all locations around the world based on the device's location. The user can also change the location manually and save his prefered locations. It customizes notifications for different prayers throughout the day. A companion wearable application provides the user with an attractive watch face, and a compass which provides the prayer direction.

Intended User

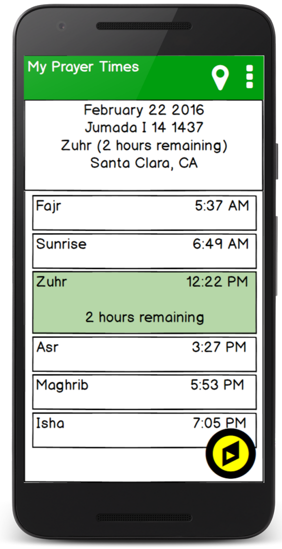
This app is intended for all muslims around the world, who need a reminder for the five daily prayers.

Features

- Shows the times of the five daily prayers of the current location.
- Different methods of calculation (Muslim World League, Islamic Society of North America, Egyptian General Authority of Survey, Umm al-Qura University, Makkah, University of Islamic Sciences, Karachi) .
- Compass activity that shows the direction in which a person should pray.
- User can save data of prayer times for the locations he usually travels to.
- User can have the location set manually or automatically.
- The date is shown both in Gregorian and Hijri(Lunar) Formats.
- Widgets that show prayer times of the current day.
- Audio and visual notifications for each prayer of the day.
- Watch Face that shows the next prayer time.
- Wearable application that shows the prayer direction on the compass.

User Interface Mocks

Screen 1

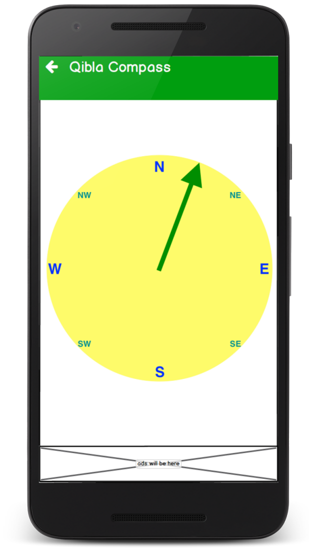


February 22 2016
Jumada I 14 1437
Zuhr (2 hours remaining)
Santa Clara, CA

Fajr	5:37 AM
Sunrise	6:49 AM
Zuhr 2 hours remaining	12:22 PM
Asr	3:27 PM
Maghrib	5:53 PM
Isha	7:05 PM

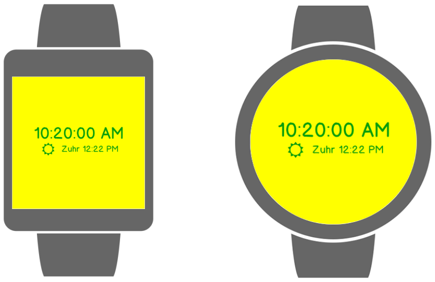
Main activity which shows the five daily prayer. The upcoming prayer is with a bigger list item size and a different color.

Screen 2



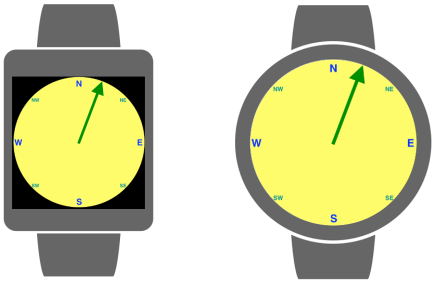
Pressing the FAB in the main activity will open the compass activity. In the compass activity, the direction of prayer for the user’s current location will be calculated and shown.

Screen 3



Wearable Watch Face that shows the time of the next prayer in the day.

Screen 4



Wearable compass that shows the direction of prayer for the current location.

Key Considerations

How will your app handle data persistence?

- I will build a content provider that handles saving prayer data of the current location. It will save the prayer times for the current two months. I will also save the direction of prayer in degrees for the current location.
- Every two months data will be updated.
- I will save prayer data for “My Saved Places”.

Describe any corner cases in the UX.

- From the compass activity, when the user hits the back button, the application will go back to the prayer’s main activity.
- When the location is not valid, It will be written under today’s date in the main activity that the location is not valid. Then the RecyclerView will show the names of the prayers with no times set.

Describe any libraries you’ll be using and share your reasoning for including them.

- I will use RecyclerView for the main activity that shows the five daily prayers.
- I will use Prayer Times library from github for the calculation method of the prayers.

Next Steps: Required Tasks

Task 1: Project Setup

Android Studio is currently the official Android IDE. Due to this, we recommend it as the IDE to use in your development environment. Follow the installation instructions here.

We recommend to use the last version available in the stable channel of Android Studio updates. See what update channel is your Android Studio checking for updates in the menu path 'Help'/'Check for Update...'/link 'Updates' in the dialog.

To set up the project in Android Studio follow the next steps:

- Open Android Studio and select 'Import Project (Eclipse ADT, Gradle, etc)'. Browse through your file system to the folder where the project is located. Android Studio will then create the '.iml' files it needs. If you ever close the project but the files are still there, you just select 'Open Project...'. Choose the folder of your project to reopen.
- Android Studio will try to build the project directly after importing it. To build it manually, follow the menu path 'Build'/'Make Project', or just click the 'Play' button in the toolbar to build and run it in a mobile device or an emulator. The resulting APK file will be saved in the 'build/outputs/apk/' subdirectory in the project folder.
- Make sure that your device has the latest Google Play Services installed.
- To access the wearable companion application, make sure that you have your device paired with a wearable device or emulator.

Task 2: Implement UI for Each Activity and Fragment

- Build UI for the MainActivity
- Build UI for the Compass Activity.
- Build UI for the Settings Activity.
  - Location change (manual look up or using current location).
  - Calculation method change.
  - 12 or 24 hour.
  - Saved places.
  - Notification sounds.
- Build UI for wearable.
  - Watch Face.
  - Wearable application.

Task 3: Implement Google Play Services

I will use three Google Play Services:

- Location Play Services.
- Wearable Play Services.
- Ads Play Services.

Task 4: Show Real Data on RecyclerView

- After getting the user’s location, I will use the Prayer Times library to calculate the daily prayer times for the current two months and save it in an internal database.
- I will build a content provider to access the information saved in the database.
- If the user changes the location the database will be updated accordingly.
- In the middle of the second month of the saved information, new information is calculated and the content provider updates the database accordingly.

Task 5: Creating The Custom Compass View

- Create the compass activity that has a custom compass view with N,E,S,W.
- Draw the direction of prayer on the compass.
- Direction of prayer is calculated based on the formula in this link.

Task 6: Adding Notifications and Widgets

- Custom notification for each prayer.
- Only one notification appears on status bar.
- Adding at least two widgets.

Task 7: RTL Support

- The application will support both the English and the Arabic languages.
- Put all the strings in strings.xml and add translations into Arabic.

Task 8: Wearable Play Services

- Create a watch face for the application, that shows the next praying time.
- Create a wearable application that shows the compass.

Task 9: Handle Error Cases

- Check if location is not valid.
- Check if there is no internet connection, and show prayer data of saved places if not.
- Check if user has the location service enabled.
- Add calibration to the compass.