# Raptor

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# **Hierarchical Index**

# 1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

pplication
Raptor
xampleUnitTest
ogicDao
IIDao

2 Hierarchical Index

# **Class Index**

# 2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

exampleUnitTest
Example local unit test, which will execute on the development machine (host)
ogicDao
Raptor
Dummy class for dependency injection
JIDao

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# File Index

## 3.1 File List

Here is a list of all files with brief descriptions:

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# **Class Documentation**

# 4.1 ExampleUnitTest Class Reference

Example local unit test, which will execute on the development machine (host).

## 4.1.1 Detailed Description

Example local unit test, which will execute on the development machine (host).

See testing documentation.

## 4.2 LogicDao Interface Reference

## 4.3 Raptor Class Reference

Dummy class for dependency injection.

Inheritance diagram for Raptor:



## 4.3.1 Detailed Description

Dummy class for dependency injection.

Can store application-wide data.

## 4.4 UIDao Interface Reference

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# **File Documentation**

# 5.1 ExampleInstrumentedTest.kt File Reference

#### **Functions**

• RunWith (AndroidJUnit4::class) class ExampleInstrumentedTest

Instrumented test, which will execute on an Android device.

#### 5.1.1 Function Documentation

## 5.1.1.1 RunWith()

```
RunWith (
AndroidJUnit4.class)
```

Instrumented test, which will execute on an Android device.

See testing documentation.

# 5.2 AudioPlayer.kt File Reference

#### **Functions**

class AudioPlayer Inject constructor (@ApplicationContext context:Context)
 This class handles audio playback in the media player, by wrapping around an ExoPlayer instance.

## 5.2.1 Function Documentation

#### 5.2.1.1 constructor()

```
class AudioPlayer Inject constructor (
     @ApplicationContext context:Context )
```

This class handles audio playback in the media player, by wrapping around an <code>ExoPlayer</code> instance.

It handles the logic of media controls, what song to play, at what time, etc. Gets the current playback position of the currently playing song in milliseconds

Gets the duration of the currently playing song in milliseconds

Enum describing all states that the player can be in

Gets the current playback state of the player, as described in PlaybackStates

Plays a given Song and sets it as the current song

Player can't be in the playing state at the time of calling.

#### **Parameters**

song	Song to play
------	--------------

Restarts playback from the beginning of the current song

Pauses the currently playing song

Player must be in the playing state when calling

Changes the currently playing song

#### **Parameters**

song
ong

Changes the timeline position of the playback to some value in milliseconds

#### **Parameters**

```
time value in milliseconds to change playback to
```

Releases the internal ExoPlayer object

Must be called in order to free memory, when an object of this class is no longer used

## 5.3 BiometricAuthenticator.kt File Reference

#### **Functions**

- enum BiometricAuthenticationStatus (val id:Int)
- · class BiometricAuthenticator (private val context:Context)

### 5.3.1 Function Documentation

#### 5.3.1.1 BiometricAuthenticationStatus()

```
enum BiometricAuthenticationStatus ( val \ id:Int \ )
```

#### 5.3.1.2 BiometricAuthenticator()

## 5.4 DatabaseManager.kt File Reference

#### **Functions**

• Singleton class DatabaseManager Inject constructor (@ApplicationContext val context:Context)

This class serves as an intermediary between the application database and the rest of the application.

#### 5.4.1 Function Documentation

#### 5.4.1.1 constructor()

This class serves as an intermediary between the application database and the rest of the application.

This class is a singleton Collects a flow of all authors from the database.

#### Returns

A Flow emitting a list of Author objects.

Collects a flow of albums by a specific author from the database.

#### **Parameters**

Name The name of the author whose albums a	are to be collected.
--	----------------------

#### Returns

A Flow emitting a list of Album objects.

Collects a flow of songs by a specific album from the database.

#### **Parameters**

album⊷	The ID of the album whose songs are to be collected.
ld	

#### Returns

A Flow emitting a list of Song objects.

Collects a flow of a specific song from the database.

#### **Parameters**

song⊷	The ID of the song to be collected.
ld	

#### Returns

A Flow emitting a Song object.

Retrieves a specific song from the database.

#### **Parameters**

	The ID of the song to be retrieved.	
ld		

#### Returns

A Song object.

Collects a flow of authors of a specific song from the database.

#### **Parameters**

song	The Song object whose authors are to be collected.
------	--

#### Returns

A Flow emitting a list of Author objects or null.

Collects a flow of a specific album from the database.

#### **Parameters**

album⊷	The ID of the album to be collected.	
ld		

#### Returns

A Flow emitting an Album object.

Populate the database with a list of SongInfo

## 5.5 Album.kt File Reference

## 5.6 AlbumAuthorCrossRef.kt File Reference

## 5.7 Author.kt File Reference

## 5.8 Song.kt File Reference

# 5.9 LibraryDb.kt File Reference

#### **Functions**

Database (entities=[Song::class, Author::class, Album::class, AlbumAuthorCrossRef::class], version=1) over-ride class LibraryDb

#### 5.9.1 Function Documentation

#### 5.9.1.1 Database()

## 5.10 LogicDao.kt File Reference

#### **Classes**

• interface LogicDao

## 5.11 AlbumWithAuthors.kt File Reference

## 5.12 AlbumWithSongs.kt File Reference

## 5.13 AuthorWithAlbums.kt File Reference

## 5.14 UIDao.kt File Reference

## Classes

interface UIDao

## 5.15 ImageManager.kt File Reference

#### **Functions**

class ImageManager Inject constructor (@ApplicationContext private val context:Context)
 Handles the extraction of album images from app storage and provides images from app storage to the rest of the program.

#### 5.15.1 Function Documentation

#### 5.15.1.1 constructor()

```
class ImageManager Inject constructor (
     @ApplicationContext private val context:Context )
```

Handles the extraction of album images from app storage and provides images from app storage to the rest of the program.

Extracts the image directly from some audio file and copies it into app storage

#### **Parameters**

uri	Image URI	
artistNames	List of names of the composers of the file	
albumName	Name of the album of the file	

#### Returns

URI of the file created in app storage or null

Retrieves a image bitmap in local storage

#### **Parameters**

uri URI of the image file from local stor	age
---	-----

#### Returns

ImageBitmap from storage or blank bitmap

## 5.16 MainActivity.kt File Reference

#### **Functions**

- Composable fun MainScreen (libraryViewModel:LibraryViewModel=hiltViewModel())
- Composable fun MainScreenContent (navController:NavHostController, libraryViewModel:LibraryViewModel)
- Composable fun AuthorTile (author:String, onClick:() -> Unit)
- Composable fun AlbumsScreen (navController:NavHostController, author:String,)
- Composable fun PortraitView (selectedAlbum:Pair< Album, ImageBitmap >, navController:NavHost

  Controller)
- Composable fun LandscapeView (selectedAlbum:Pair< Album, ImageBitmap >, navController:NavHost

  Controller)
- Composable fun SongsScreen (navController:NavHostController, libraryViewModel:LibraryViewModel, albumId:Long?, modifier:Modifier=Modifier)
- Composable fun Songltem (song:Song, navController:NavHostController)
- Composable fun isPortrait ()
- Composable fun AuthenticationScreen (onAuthenticate:() -> Unit)

#### **Variables**

- lateinit var sensorManager
- lateinit var SensorEventListener

#### 5.16.1 Function Documentation

#### 5.16.1.1 AlbumsScreen()

## 5.16.1.2 AuthenticationScreen()

```
Composable fun AuthenticationScreen (  \qquad \qquad \text{onAuthenticate:() } \rightarrow \textit{Unit)}
```

## 5.16.1.3 AuthorTile()

## 5.16.1.4 isPortrait()

```
Composable fun isPortrait ()
```

#### 5.16.1.5 LandscapeView()

## 5.16.1.6 MainScreen()

## 5.16.1.7 MainScreenContent()

## 5.16.1.8 PortraitView()

#### 5.16.1.9 Songltem()

#### 5.16.1.10 SongsScreen()

#### 5.16.2 Variable Documentation

#### 5.16.2.1 SensorEventListener

```
lateinit var SensorEventListener
```

#### 5.16.2.2 sensorManager

lateinit var sensorManager

## 5.17 MusicFileLoader.kt File Reference

#### **Functions**

• class MusicFileLoader Inject constructor (@ApplicationContext private val context:Context)

Handles the loading of music files in a given directory and its subdirectories as well as launching a file picker instance.

## 5.17.1 Function Documentation

## 5.17.1.1 constructor()

```
class MusicFileLoader Inject constructor ( {\tt @ApplicationContext\ private\ val\ context:Context\ )}
```

Handles the loading of music files in a given directory and its subdirectories as well as launching a file picker instance.

Dataclass representing a song file

#### **Parameters**

filename	Name of the file	
uri	Uri corresponding to the file	
mimeType	The type of the file	

Observable list of SongFile currently loaded

@Composable function that prepares the file picker launcher

Must be called before launch ()

Launches the file picker

## 5.18 Raptor.kt File Reference

#### **Classes**

· class Raptor

Dummy class for dependency injection.

## 5.19 SongPlayUI.kt File Reference

#### **Functions**

- Composable fun MediaControls (playerViewModel:PlayerViewModel)
- Composable fun CurrentSongInfo (title:String?, artists:String?, cover:ImageBitmap, modifier:Modifier)
- · SuppressLint ("StateFlowValueCalledInComposition") @Composable fun SongPlayUI(songId

#### 5.19.1 Function Documentation

#### 5.19.1.1 CurrentSongInfo()

#### 5.19.1.2 MediaControls()

```
Composable fun MediaControls ( playerViewModel: PlayerViewModel\ )
```

#### 5.19.1.3 SuppressLint()

```
SuppressLint ( "StateFlowValueCalledInComposition")
```

## 5.20 WaveFormSeekBar.kt File Reference

#### **Functions**

Composable fun WaveformSeekBar (waveform:List< Float >, progress:Float, modifier:Modifier=Modifier, onProgressChanged:(Float) -> Unit)

#### 5.20.1 Function Documentation

#### 5.20.1.1 WaveformSeekBar()

## 5.21 TagExtractor.kt File Reference

#### **Functions**

class TagExtractor Inject constructor ( @ApplicationContext private val context:Context, private val image
 — Manager:ImageManager)

This class handles metadata extraction from a collection of SongFile.

#### 5.21.1 Function Documentation

#### 5.21.1.1 constructor()

```
class TagExtractor Inject constructor (
          @ApplicationContext private val context:Context ,
          private val imageManager:ImageManager )
```

This class handles metadata extraction from a collection of SongFile.

It will also copy all album covers to app storage Dataclass representing the tags a song has.

#### **Parameters**

artists	A list of artist names that authored the song
album	A list of artist names that authored the album of the song
title	The title of the song
releaseDate	A string representing the release date of the song
albumArtists	The title of the album of the song
fileUri	Uri of the song
coverUri	Uri of the song cover art, in app storage

Extracts the tags and album covers to app storage of a list of SongFile

## **Parameters**

fileList	List of SongFile, each element should have it's data extracte	d
----------	---	---

#### Returns

List of SongInfo corresponding to each input song file

## 5.22 Color.kt File Reference

#### 5.23 Theme.kt File Reference

## 5.24 Type.kt File Reference

#### 5.25 AlbumsScreenViewModel.kt File Reference

#### **Functions**

HiltViewModel (assistedFactory=AlbumsScreenViewModel.Factory::class) class AlbumsScreenViewModel
 @AssistedInject const ructor(@Assisted currentAuthor

ViewModel used for the albums screen

#### 5.25.1 Function Documentation

#### 5.25.1.1 HiltViewModel()

ViewModel used for the albums screen

#### **Parameters**

currentAuthor Author whose albums to display

Flow of a pair of Album objects and bitmaps of their covers

## 5.26 AlbumTileViewModel.kt File Reference

## 5.27 LibraryViewModel.kt File Reference

### **Functions**

• HiltViewModel class LibraryViewModel Inject constructor (private val picker:MusicFileLoader, private val databaseManager:DatabaseManager, private val tagExtractor:TagExtractor,)

Viewmodel presenting the starting, author screen.

### 5.27.1 Function Documentation

### 5.27.1.1 constructor()

Viewmodel presenting the starting, author screen.

Also handles user interaction with the file picker All authors in the database. Used for displaying author tiles Gets a list of songs in a given album

#### **Parameters**

album⊷	ld of the album
ld	

#### Returns

Flow of a list of Song

Initialize the flow used by the file picker

See also

MusicFileLoader.PrepareFilePicker

Launch the file picker

## 5.28 PlayerViewModel.kt File Reference

#### **Functions**

• HiltViewModel class PlayerViewModel Inject constructor (private val audioPlayer:AudioPlayer, private val databaseManager:DatabaseManager, private val imageManager:ImageManager, @ApplicationContext private val context:Context, savedStateHandle:SavedStateHandle)

Viewmodel for the player screen.

#### 5.28.1 Function Documentation

#### 5.28.1.1 constructor()

Viewmodel for the player screen.

Flow that represents the position of the playback progress bar

Album icon of the currently playing song

Flow with the title of the currently playing song

Flow with the artists of the current song joined into a string

Flow with the Album of the current song

Flow with an ImageBitmap of the cover of the current song

Observable list of points corresponding to the height of each point on the waveform

This property handles toast sent by the viewmodel in case of an exception or user error

Handle the user tapping on the progress bar and change the playback position

Handle the user tapping the center button. Depending on the playback state the behaviour will be different

If the playback is playing, the button will pause If the playback is paused, the playback will resume If the playback is stopped, the playback will restart

Initialize the current Song Flow

## 5.29 WaveFormExtractor.kt File Reference

#### **Functions**

• suspend fun extractWaveformDataFromUri (context:Context, uri:Uri)

## 5.29.1 Function Documentation

## 5.29.1.1 extractWaveformDataFromUri()

# 5.30 ExampleUnitTest.kt File Reference

#### Classes

class ExampleUnitTest

Example local unit test, which will execute on the development machine (host).

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