Object Common

Background

Variables that may change are defined here.

For maintenance, first look at this object.

```
val UI_ORDER: HashMap<KClass<out Fragment>, Int>
```

Set display order of fragram in UI from left to right

```
const val BASE_URL = "https://api.themoviedb.org/"
const val MOVIE_SEARCH_API = "3/search/movie"
const val MOVIE_DETAIL_API = "3/movie/{id}"

const val BASE_IMAGE_URL = "https://image.tmdb.org/"
const val MOVIE_IMAGE_API = "t/p/{width}"

const val API_KEY = !!! should not be here !!!

const val FAVORITE_DATA_FILE = "favoriteMovie"

val MAX_RESULT_TO_SHOW !!! Auto Set when the user changes settings !!!

var ADULT_CONTENT !!! Auto Set when the user changes settings !!!

var PREFER_LANG !!! Auto Set when the user changes settings !!!
```

Object MovieSearchController

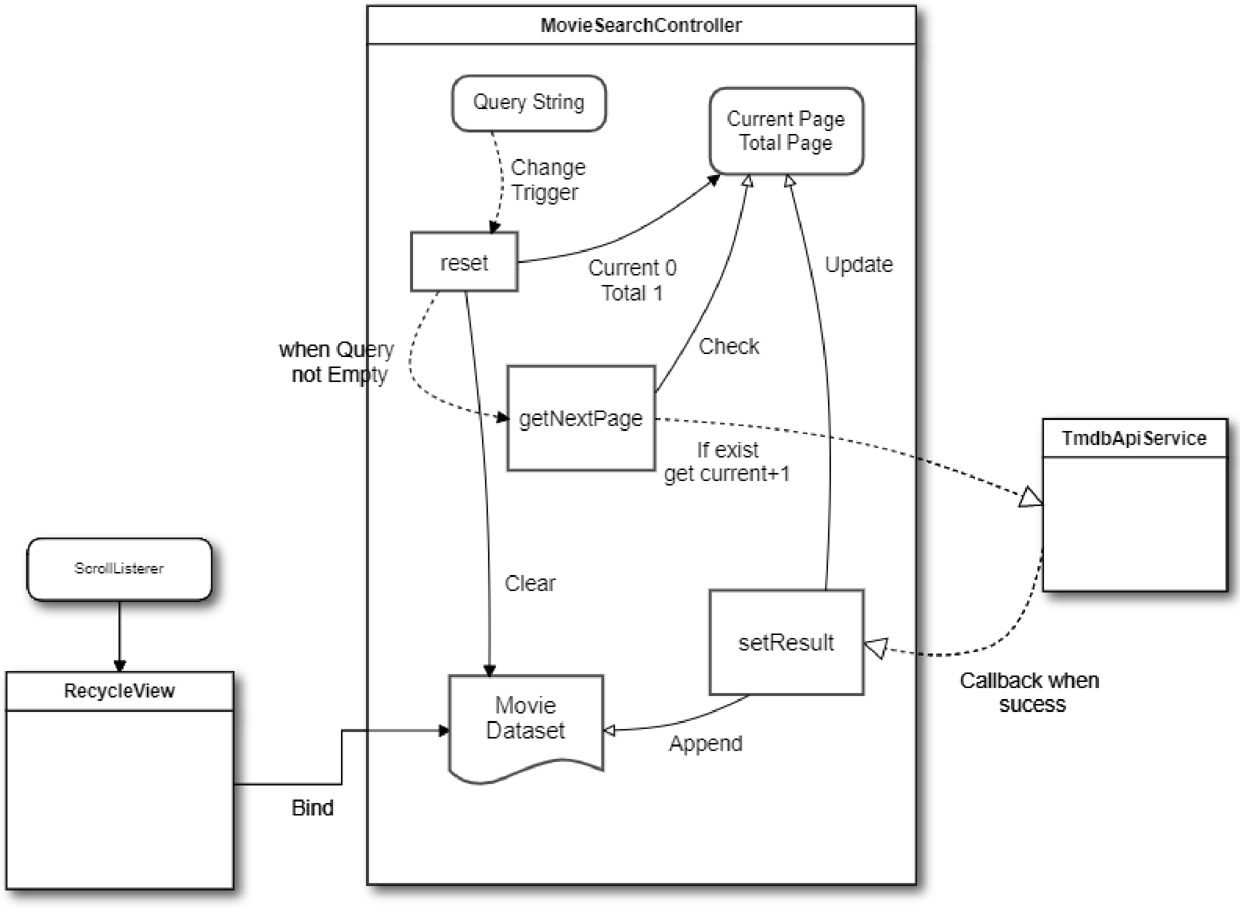
Background

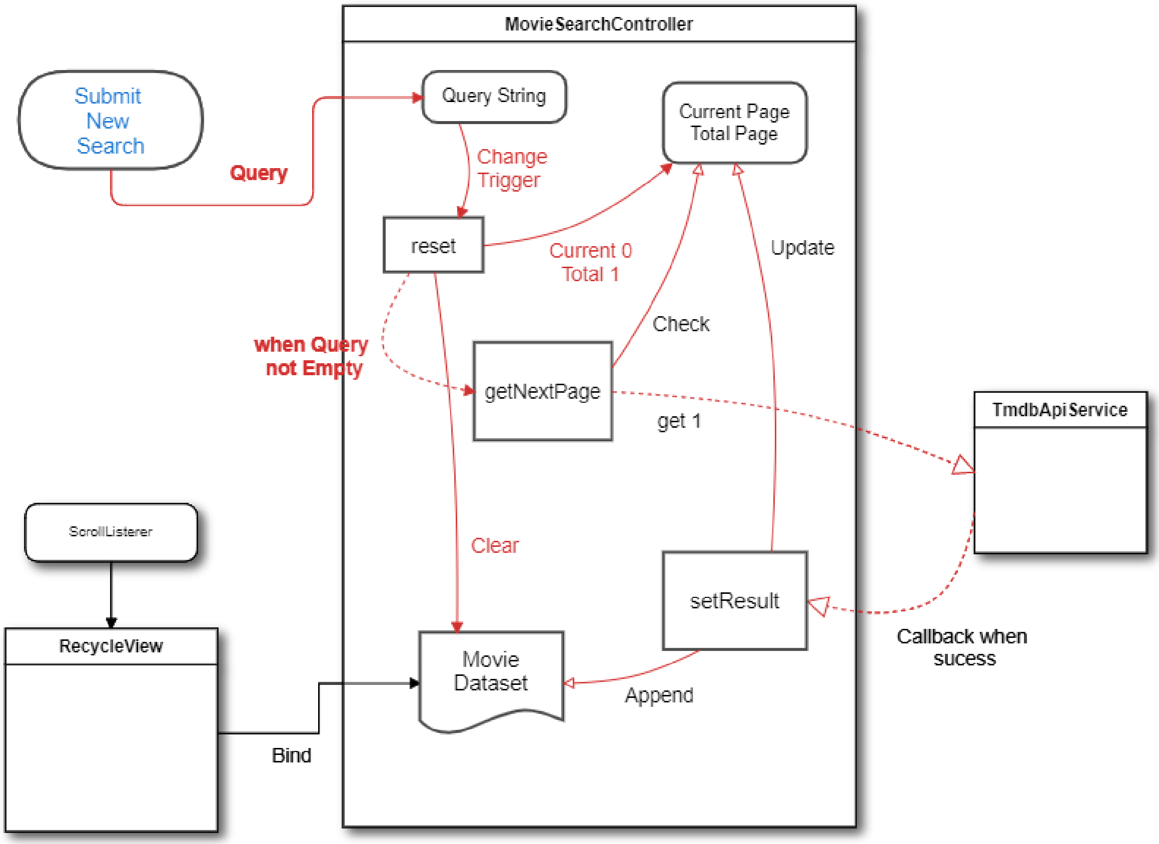
Since the API returns only one page of results (20 records).

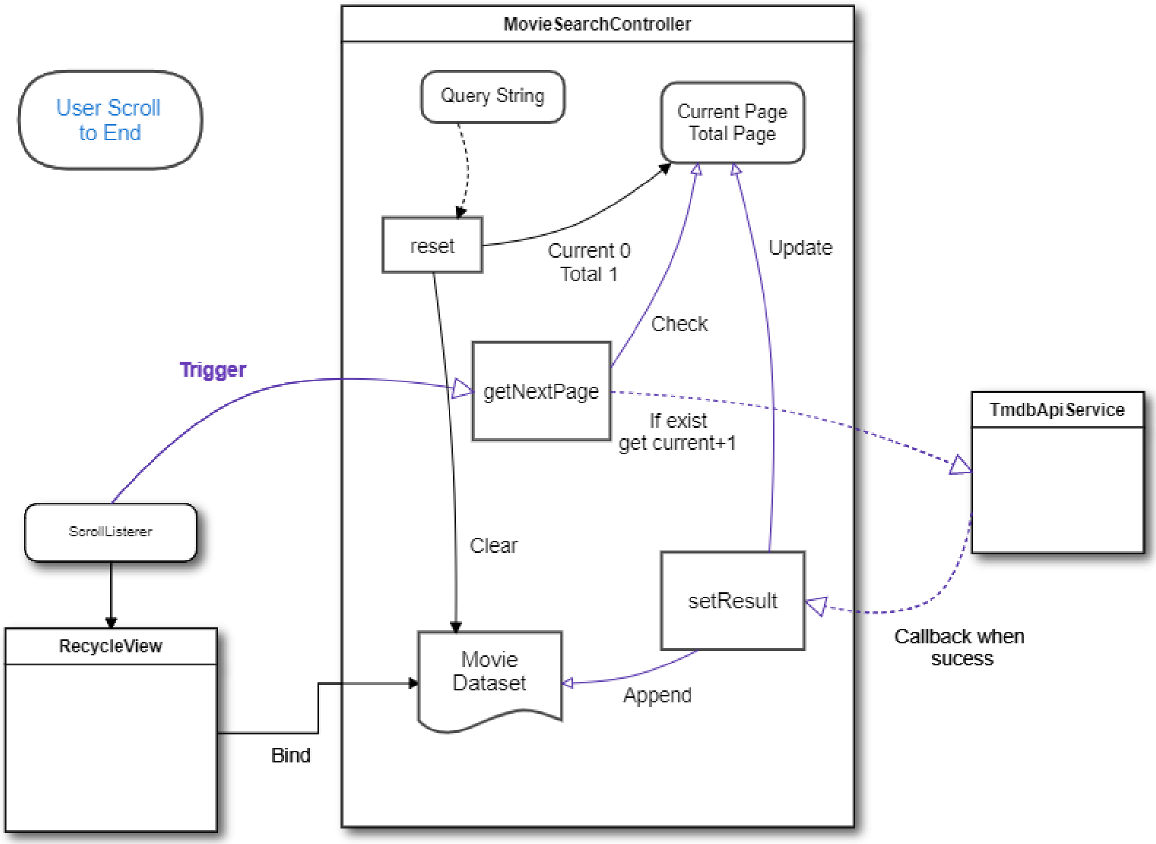
This controller will maintain and provide search params to API, maintain the whole result list and seamless call to load the next page when needed.

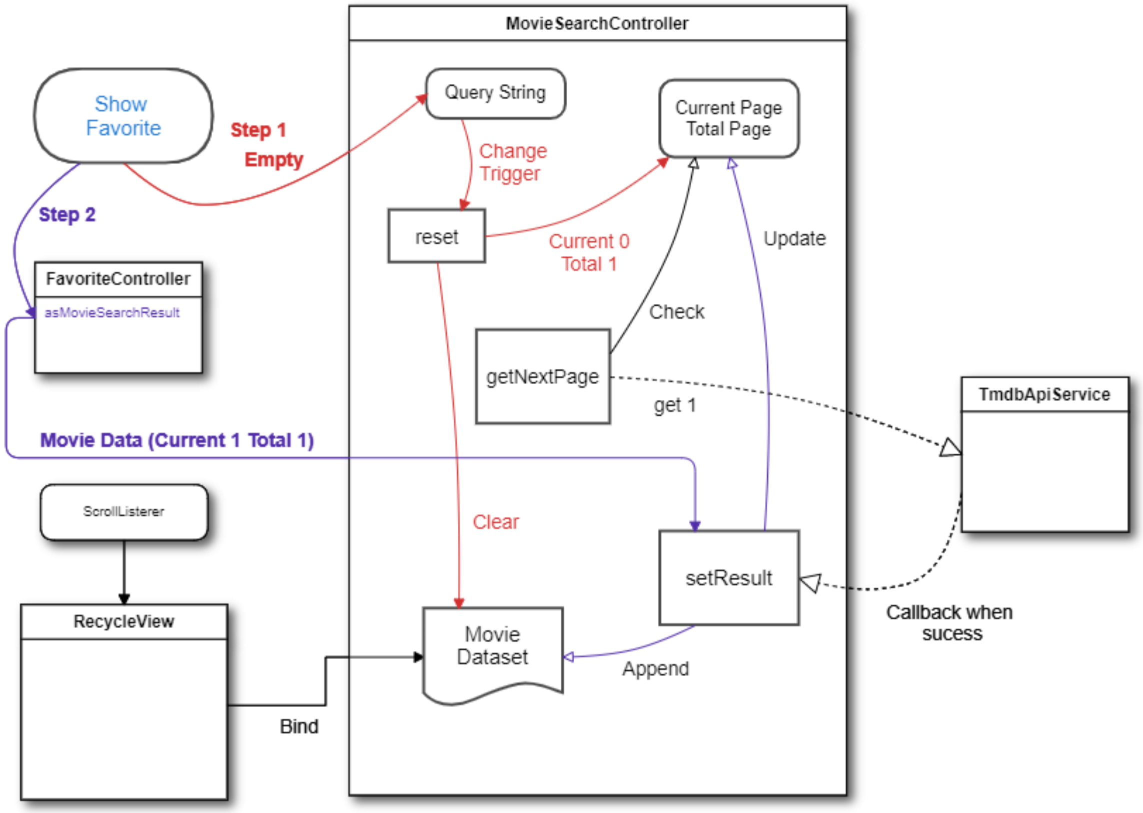
Features

- **Change in Query will auto trigger a search for page 1**
- **Scroll to near the end will auto trigger get next page**
- **Call setResult directly to set favorite data to display**
- **Work normally even API return fail e.g. no network / timeout**




MovieSearchController
Submit New Search
Query
Query String
Change Trigger
Current Page
Total Page
reset
Current 0
Total 1
Update
when Query not Empty
Check
getNextPage
get 1
TmdbApiService
ScrollListerer
Clear
setResult
RecycleView
Callback when sucess
Movie Dataset
Append
Bind


MovieSearchController
User Scroll to End
Query String
Current Page
Total Page
reset
Current 0
Total 1
Update
Check
Trigger
getNextPage
If exist
get current+1
TmdbApiService
ScrollListerer
Clear
setResult
RecycleView
Callback when sucess
Movie Dataset
Append
Bind



```
var query: String
val resultSet: MutableList<Movie>
var loading: Boolean (private set)
val complete: Boolean
var onReset: () -> Unit
var onNewData: (Int, Int)
fun loadNextPage(): Boolean
fun setResult(fromQuery: String, resultData: Optional<MovieSearchResult>)
```

PS - Correction for All Diagrams

API will invoke the Callback even not success

To prevent repeat submission to API, getNextPage will not trigger when a call is submitted, until it gets a reply at setResult.

A result of failure will be ignored. Since the current page and total page did not change, the next trigger on getNextPage is equal to a retry.

Object MovieDetailController

Features

- **Maintain a cache for detail data**
- **If need, call API to get new detail and store at cache**
- **Data binding with DetailFagment**
- **Cached data is still viewable at network failure**

```
fun getDetail(movieId: Int, receiver: (MovieDetail) -> Unit)
fun clearCache()
```

Call to getDetail is NOT blocked like MovieSearchController because it is triggered by manual click and the response time of the get detail API is very fast (~20ms in Test).

Object FavoriteController

Features

- **Save, load, maintain user favorite movie list**
- **Call to save and load via gson to file at onCreate / onPause OnStop**
- **Provide the data as MovieSearchResult to display**

```
fun add(movie: Movie)
fun remove(movie: Movie)
fun isExist(movie: Movie): Boolean
fun asMovieSearchResult(): MovieSearchResult
fun save(context: Context)
fun load(context: Context)
```

Object TmdbApiService

Features

- **Make async call to TMDB API via Retrofit**

```
fun actionSearchMovie(
   keyForValidCheck: String,
   param: Map<String, String>,
   receiver: (String, Optional<MovieSearchResult>) -> Unit
)
```

Variable keyForValidCheck is used by MovieSearchController to check if this result is valid. It's possible that the user changes the query string before the result returns.

Will always invoke the receiver

Response Time in Test: ~200ms

```
fun actionGetMovieDetail(movieId: Int, receiver: (MovieDetail) -> Unit)
```

Will NOT invoke the receiver in case of failure

Response Time in Test: ~20ms

```
fun getImageUrl(imgString: String, preferWidth: Int = 0): String
```

Translate the image full Url, for example:
“/kqjL17yufvn9OVLyXYpvtyrFfak.jpg”
preferWidth 0
-> “https://image.tmdb.org/t/p/original/kqjL17yufvn9OVLyXYpvtyrFfak.jpg”
preferWidth 500
-> “https://image.tmdb.org/t/p/w500/kqjL17yufvn9OVLyXYpvtyrFfak.jpg”