

JAMA

Just another movie app

Second presentation

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Reminder: The Idea

- Everyone loves movies! And they are EVERYWHERE! **But...**
 - ... there is simply too much to watch
 - ... predicting preferences of people is hard
 - ... it is difficult to track all nearby cinemas and their offers
- JAMA helps to solve the 3-W problem...
 - **Where to watch** - it shows all cinemas near you!
 - **When to watch** - it lists all the cinema schedules!
 - **What to watch** - it helps you to decide!



Movie poster by Viktor Hertz

Challenges

```
targetedChallenges = new ArrayList<Challenge>;
```

```
targetedChallenges.add(Offline_Challenge);
```

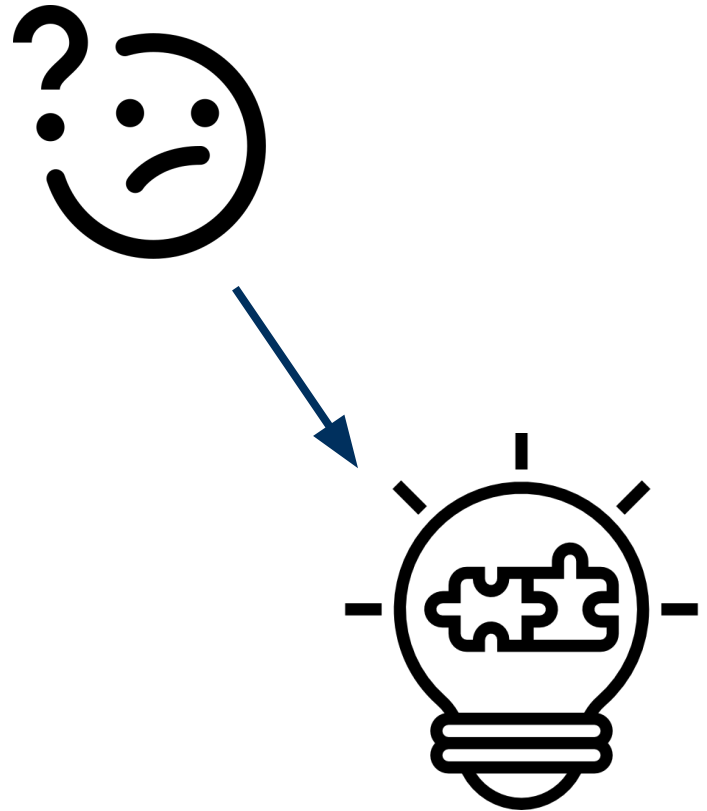
```
//Prefetched and cached data
```

```
targetedChallenges.add(Connectivity_Challenge);
```

```
// Prioritize information
```

```
targetedChallenges.add(Energy_Challenge);
```

```
// limit GPS usage
```



Adaptations - Data and connection management

Offline- & Connectivity Challenge



Data Management Layer

- transparent data access for the rest of the application
- decides on per request basis whether server should be queried or local resources and cached data should be used
- provides caching
 - all data retrieved from the server are stored in the local database
 - trimming of cache based on least recently used algorithm
 - outdated data are removed (past projections, etc.)

Adaptations - Network Data

Offline- & Connectivity Challenge



```
switch (network-status){
```

```
  case(wifi):
```

all data are fetched from server and all operations are executed on the server

```
  case(mobile-network):
```

only high priority and basis data are downloaded

images of lower resolution are downloaded

searches are executed on the server

```
  case(offline):
```

cached data are used

searches are executed on the currently stored data

```
}
```

Adaptations - Energy consumption

Energy Challenge



```
if (battery < 25 %){
```

```
    suggest turning off the GPS
```

```
    use WiFi for position tracking instead
```

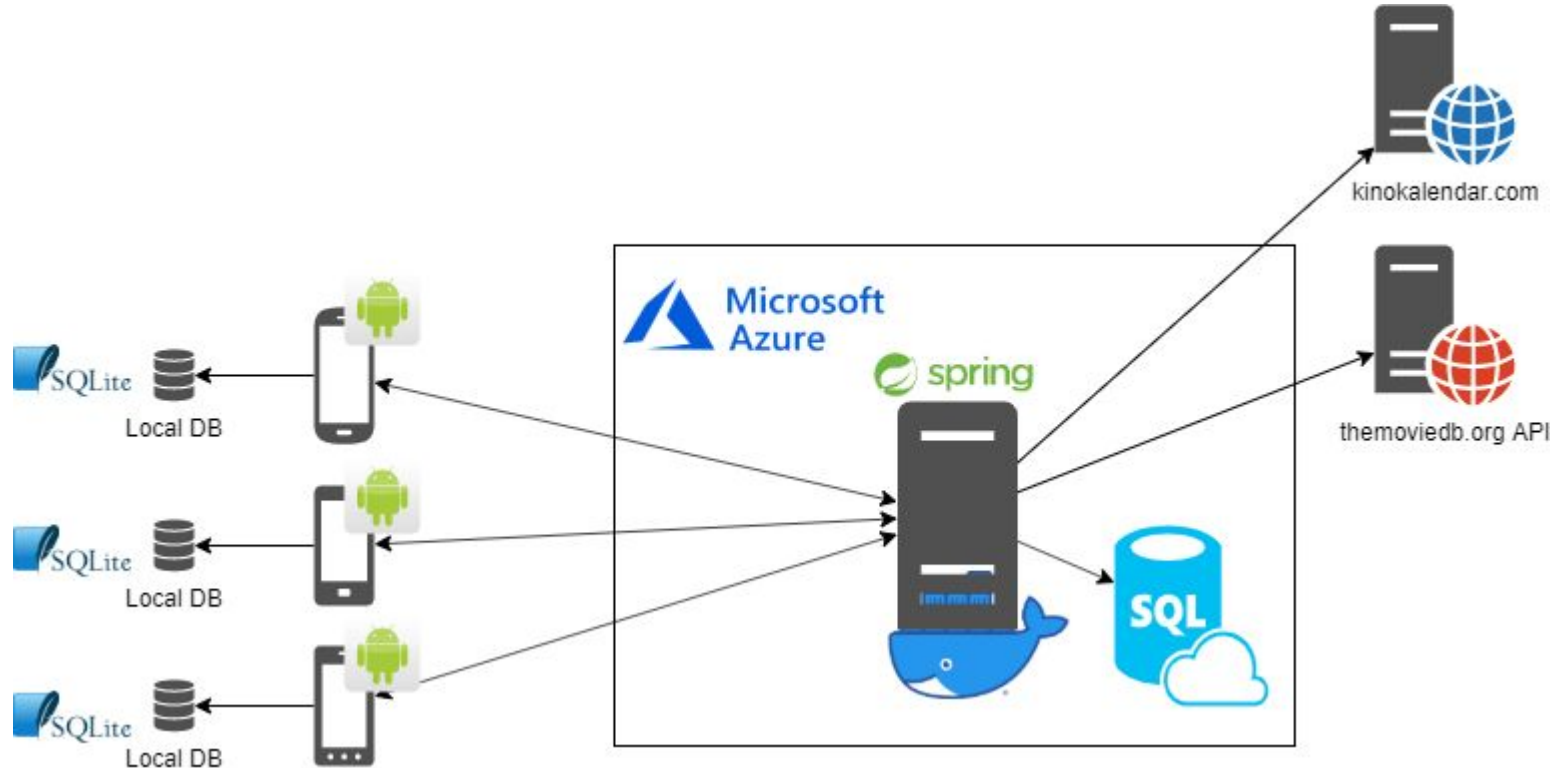
```
    (in case no option is available last known position will be used)
```

```
} else {
```

```
    use GPS
```

```
}
```

Architecture and Technologies



Schedule

- November
 - Analysis and Mockup
 - First presentation (8.11.2019)
 - Application design and prototyping
- December
 - Implementation
 - Second presentation (13.12.2019)
- January
 - Testing
 - Bug Fixing and the finishing touch
 - Final presentation (31.1.2020)

Thank you for your attention!



Additional information - Connectivity challenge

Mobile network

Application tries primary to use cached information in this mode.

In case required data are not present they are downloaded based on defined data reduction strategies.

Movie information reduction strategies

- general information(overview, actors, genres, etc.) - no reduction
- movie poster - lower resolution (45*68 pixel ~ 4KB or 92*138 pixel ~ 8KB)
- comments - omitted
- trailers - omitted
- additional movie pictures - omitted
- future projections - reduced cinema pool and reduced outlook (only for today)

Cinema information reduction strategies

- general information - no reduction
- projections - only ones that take place today
- comments - omitted

Additional information - Offline challenge

When a movie/cinema is accessed/requested its data is saved to local DB

Cached movie information:

- general information
- images
- scheduled projections
- nearby cinemas
- last comments

Cached cinema information:

- general information
- scheduled projections
- last comments

In order to prevent excessive memory usage data will be trimmed in regular intervals to meet defined restrictions

- movie pool max size
 - oldest movies (in regard to access -least recently displayed)
- cinema pool max size
 - furthest cinemas (based on current location)
- expiration date
 - outdated information - past projections

While offline limited local search version is provided to the user which operates on cached data.