Experience in Developing Reference Applications with Qt/QML

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Background and Motivation

- Many various sources of information
- Reference applications containing all required information
Reference Resources

- Resources that do not need to be constantly updated
  - Data can be stored locally (i.e., XML)
  - Examples:
    - electronic encyclopedias
    - reference books
    - dictionaries

- Resources that need to be constantly updated
  - Interaction with web service via API
  - Examples:
    - database of movies
    - news feeds
Reference Applications vs Web-sites

- Information is available at any time with mobile phone or smartphone
- Aggregation of information from several Internet resources
- More convenient user interface
Mushrooms

- Information about particular species of mushrooms by its photo or name
Origami Zoo

- http://oss.fruct.org/projects/origami/
- Clearly illustrated steps and instructions

Turn the paper over to the white side. Fold the paper in half, crease well and open, and then fold again in the other direction.
Kinoman

- Mobile client for The Movie Database (TMDB) and MyShows.ru

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Common Structure of Reference Applications

Main stages

1. Search of online resources with required information
2. Load structured data into a data model
3. Present information to the user by means of view
Implementation Details

- Mushrooms and Origami Zoo — offline XML-based applications
- Kinoman — interaction via API of web services
Interaction with web services using XMLHttpRequest API

```javascript
var xhr = new XMLHttpRequest();

xhr.onreadystatechange = function() {
    if (xhr.readyState == XMLHttpRequest.DONE) {
        var response = JSON.parse(xhr.responseText);
        var films = response.results
        for (var i = 0; i < films.length; i++) {
            filmsModel.append({
                film_id: films[i].id,
                title: films[i].title,
            });
        }
    }
}

xhr.open('GET', 'http://api.themoviedb.org/3/movie/top-rated');
xhr.send();
```
List Pages of the Applications

Mushroom Guide
- Edible
- Choice
- Inedible

Origami Zoo
- Bird
  Level: ★★★
  Steps: 11
- Butterfly
  Level: ★★
  Steps: 15
- Crane
  Level: ★★
  Steps: 12
- Dragon Head
  Level: ★★
  Steps: 9
- Flapping Bird
  Level: ★★
  Steps: 11
- Horse
  Level: ★★
  Steps: 11
- Jumping Frog

Pink Floyd: The Wall
23 Мая 1982 г.
Рейтинг: 9.3/10

Крестный отец
24 Марта 1972 г.
Рейтинг: 9.2/10

Однажды в Америке
17 Февраля 1984 г.
Рейтинг: 9.2/10

Навсегда из долины ветров
11 Марта 1984 г.
Рейтинг: 9.2/10

Матрица
31 Марта 1999 г.
Рейтинг: 9.1/10

Побег из Шоушенка
01 Сентября 1994 г.
Рейтинг: 9.1/10
Pages with Detailed Information

Leccinum scabrum

Category: Edible

Synonyms
Bolet rude, Brauner Birkenpilz, Brown Birch

Location
North America, Europe

Fungus color
Grey to beige

Normal size
5-15cm

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## Metrics

<table>
<thead>
<tr>
<th>Application</th>
<th>QML files (LOC)</th>
<th>JavaScript files (LOC)</th>
<th>XML (LOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mushrooms</td>
<td>15 (1111)</td>
<td>4 (266)</td>
<td>3 (4962)</td>
</tr>
<tr>
<td>Origami Zoo</td>
<td>13 (679)</td>
<td>2 (104)</td>
<td>17 (1420)</td>
</tr>
<tr>
<td>Kinoman</td>
<td>15 (1187)</td>
<td>7 (667)</td>
<td>—</td>
</tr>
</tbody>
</table>
Future Plans

- Developing more reference applications based on this pattern
- Add new features to existing applications
  - search mushrooms by its individual features (stem, cap, etc.)
  - add new figures to Origami Zoo application
  - ...

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