

Разработка генератора Android приложений

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Проблема

- Быстрое развитие мобильных технологий
- Высокая стоимость и сложность разработки приложений

QReal:Web

The screenshot displays the QReal:Web IDE interface. At the top, there are two buttons: "Run in emulator" and "Generate app". Below these, the main workspace is titled "main" and shows a mobile form design. The form consists of a "Login:" label, a text input field, a "Password:" label, another text input field, and a "Login" button. The left sidebar contains a "Forms" section with a "main" form selected and a "New form" button, and a "Widgets" section with buttons for "Button", "TextView", "ImageView", "WebView", and "EditText". The right sidebar features a "Properties" section with fields for "Id" (button5), "Text" (Login), and "Top margin" (20), along with an "OnClick" section containing "Login" (editText2) and "Delete" buttons, and "Passwd" (editText4) and "Add action" buttons. At the bottom right, a "Form triggers" section shows a trigger named "onPatientsResponse".

Постановка задачи

Цель работы — реализация генератора Android приложений

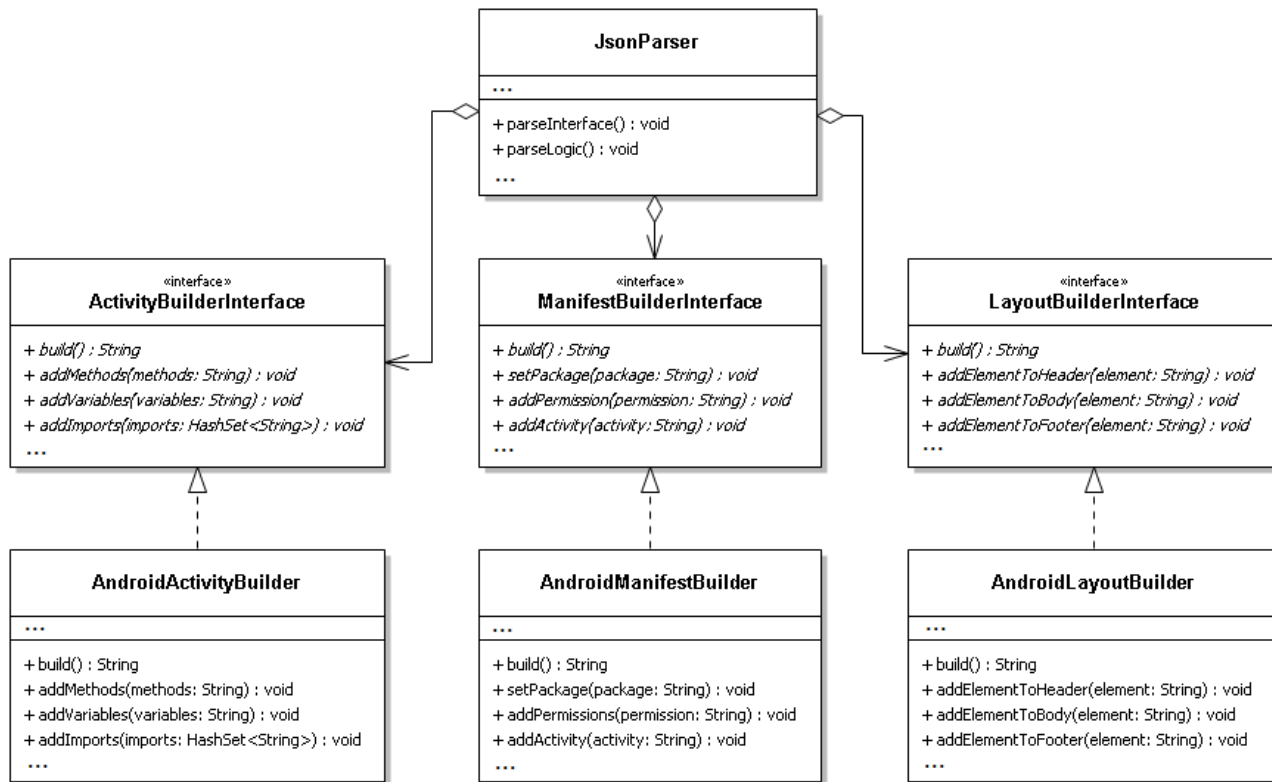
Задачи:

- Выбор инструментов
- Поддержка всех возможностей конструктора
- Автоматическая сборка
- Апробация

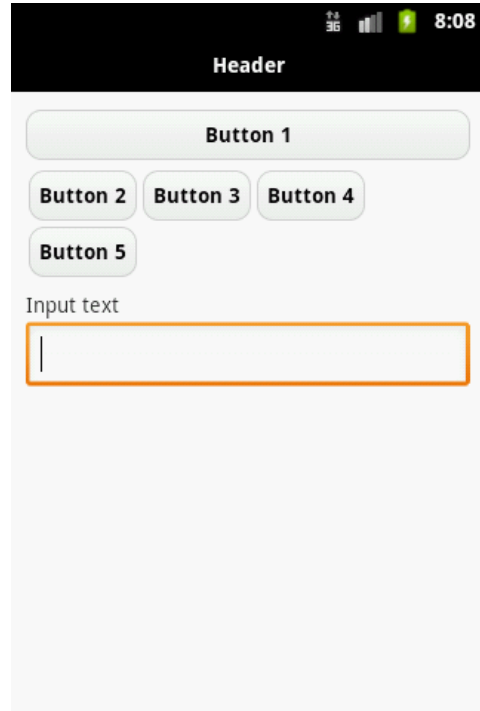
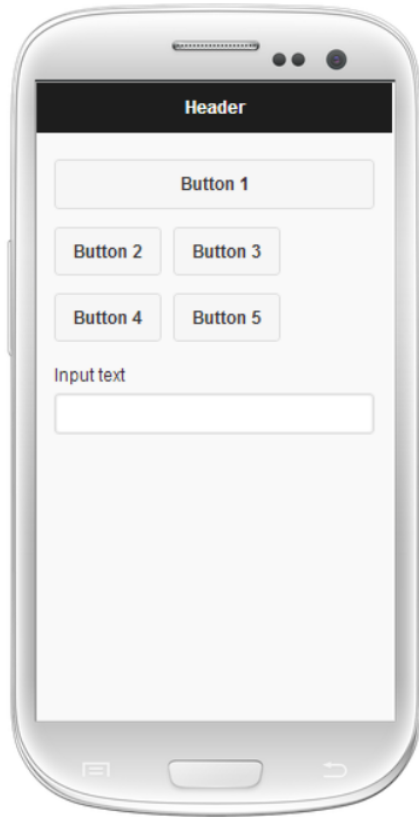
Инструменты

- C#
- Json.NET
- OSMdroid
- Android SDK
- Apache Ant

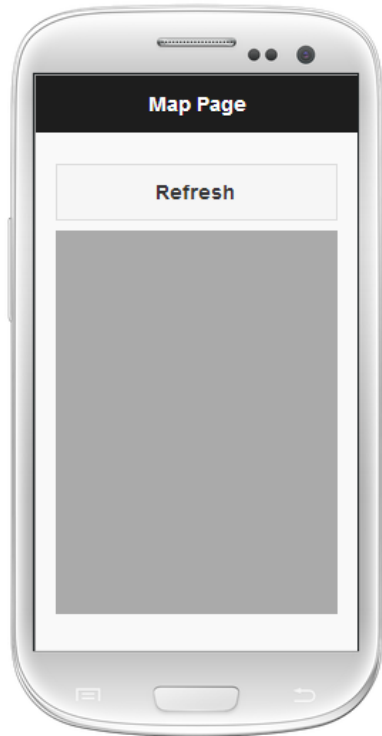
Архитектура



Inline layout

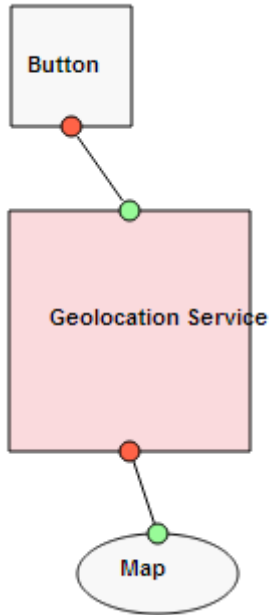


Апробация



```
{  
  ...  
  "Controls": [  
    {  
      "type": "Button",  
      "id": "button2",  
      "text": "Refresh",  
      ...  
    },  
    {  
      "type": "Map",  
      "id": "map1"  
    }  
  ]  
  ...  
}
```


Апробация



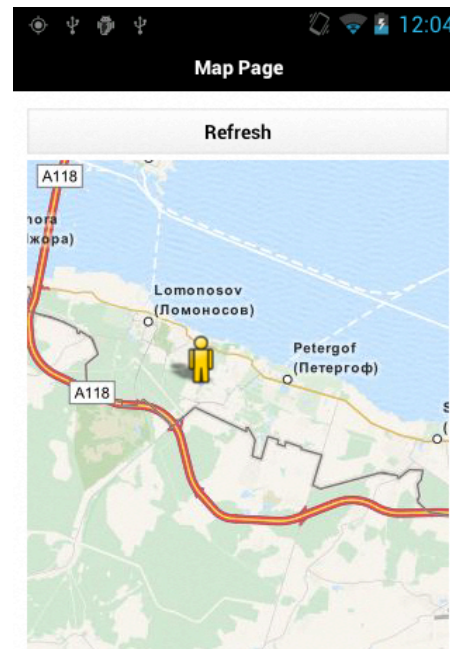
```
{
  "nodes": [
    ...
  ],
  "services": [
    {
      "id": "geoloc1",
      "type": "GeolocationService"
    }
  ],
  "links": [
    {
      "source": "button2",
      "target": "geoloc1"
    },
    {
      "source": "geoloc1",
      "target": "map1"
    }
  ]
}
```

Апробация

```
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical" >
  {0}

  <LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:padding="{3}">
    {1}

  </LinearLayout>
  {2}
</LinearLayout>;
```



Результаты

- Выбраны подходящие инструменты
- Поддержаны имеющиеся на данный момент возможности конструктора
- Автоматическая сборка
- Апробация