

# 实时WEB APP时代

云端一体设计思路

百度移动云事业部 童遥

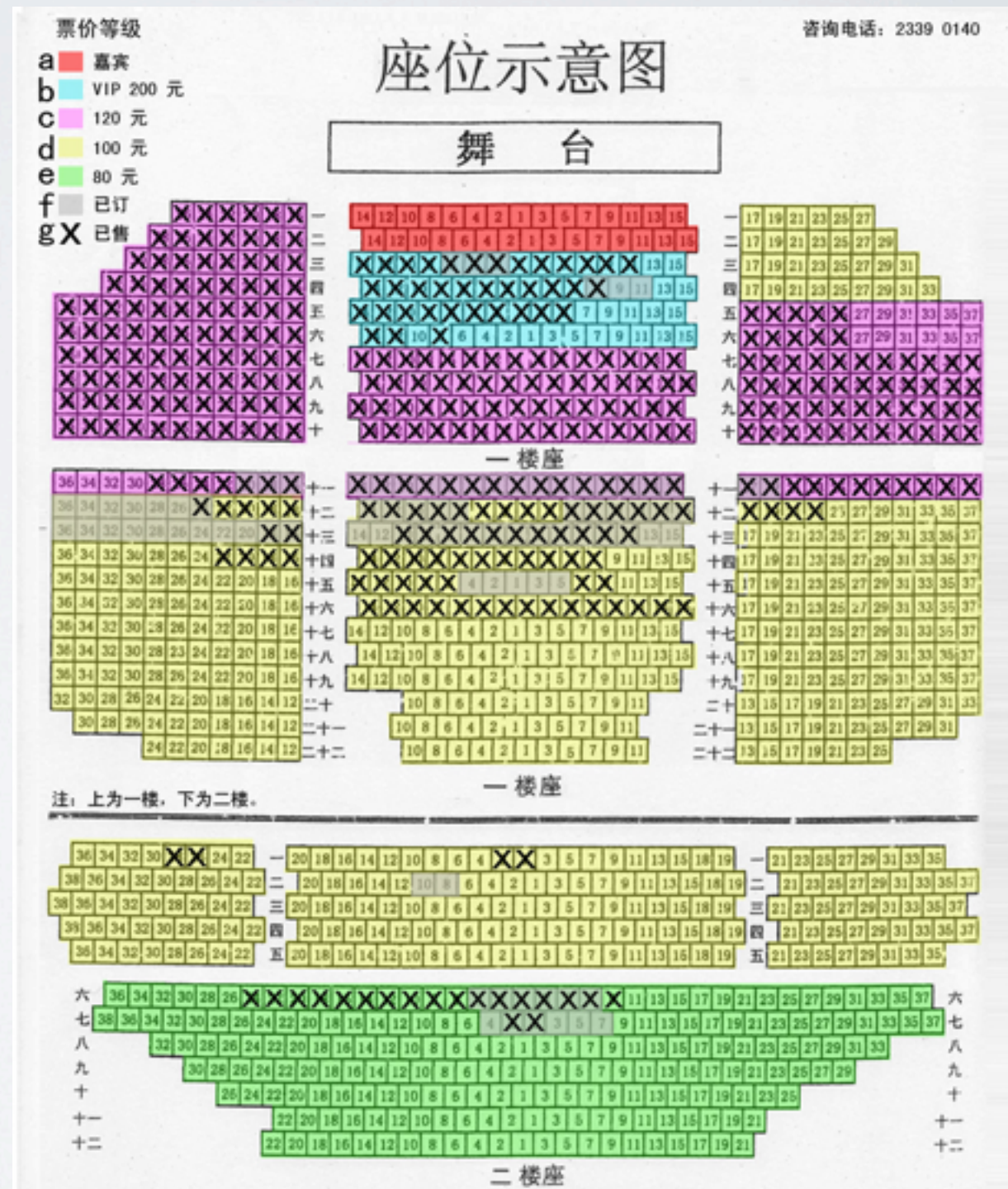
# LETS START WITH VIDEOS





# 为什么要有实时WEB

传统的实时产品场景：





# 为什么要有实时WEB

新的实时产品场景：



王兴：实时Web的真正意义是把线下数据实时化

# 一种实时性的设计思路

- 云端一体 (CC Unifiy)
- 基础设施化
- Node.js



# 云端统一

- 提供云、端统一的编程模型
- 抹平传统云、端界限。
- Ignore Interface

Person Object

- Name
- Birth

Client

Person Object

- Name
- Birth

serialization

URL: <http://some.host/person?name=someone&birth=1999>

/get/person

Query, join and traverse

Server

```
+-----+-----+
| name   | meta   |
+-----+-----+
| somebody | 10    |
+-----+-----+
1 row in set (0.00 sec)
```

```
+-----+-----+
| uid | birthday |
+-----+-----+
| uid | 1343628058 |
+-----+-----+
1 row in set (0.05 sec)
```

deserialization  
& multi-table manipulation

Before



After

Person Object

- Name
- Birth

Person Object

- Name
- Birth

# CLIENT SIDE

before

```
//读取Person对象
$.get('/get/person', function(row){
    var personObj = new Person();
    personObj.name = row.name;
    personObj.birth = new
Date(row.birthday)
})

//保存Person对象
var url = 'http://somehost/person?
name=' + personObj.name + '&birth=
' + personObj.birth.getTime();

$.post(url, function(){
    alert('done');
})
```

after

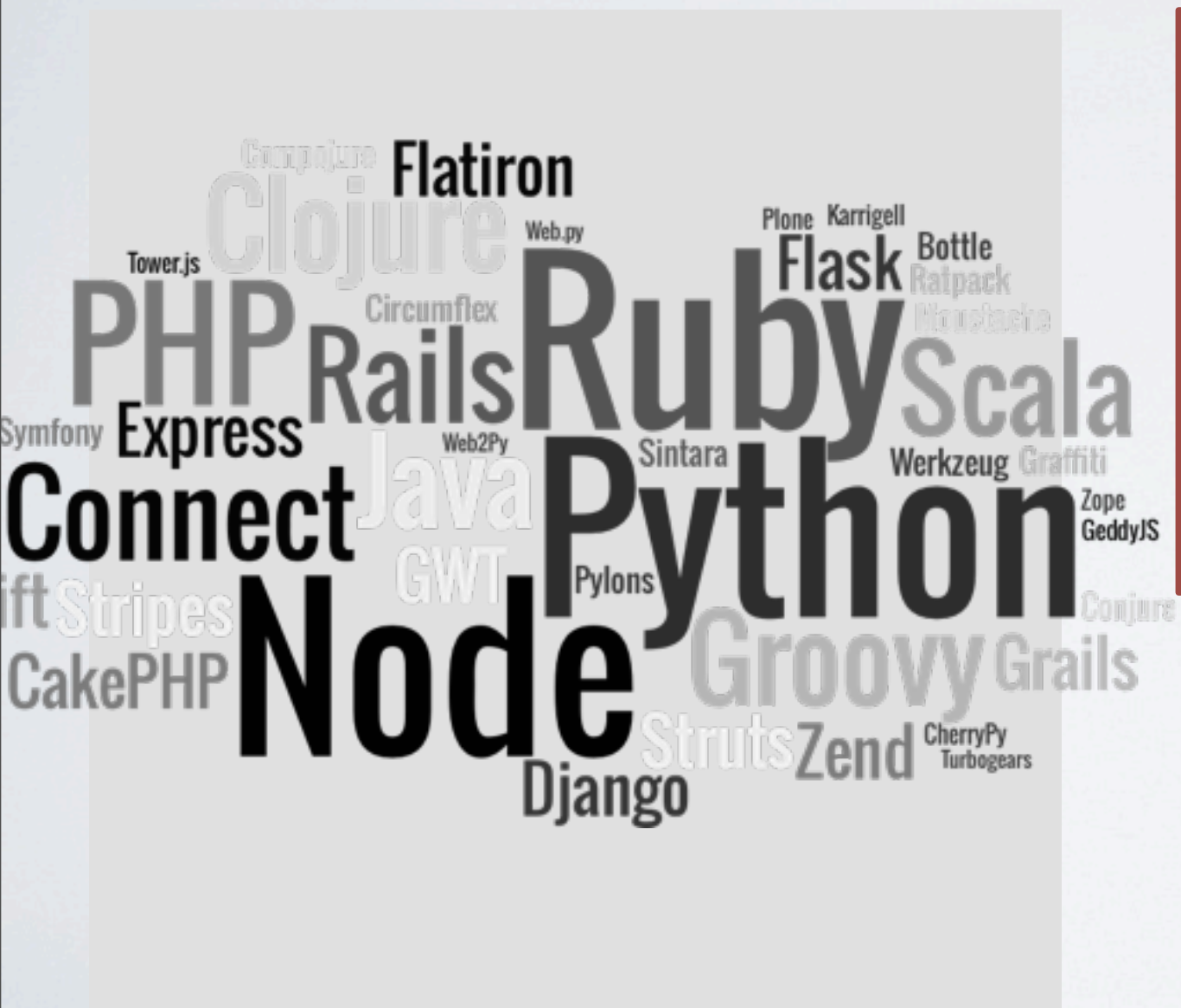
```
//读取Person对象
var person = subscribe('person');

//保存Person对象
person.save();
```



# SERVER SIDE

before



after

```
publish('channel', function(param,cb){
    db.find(param).then(cb);
})
```

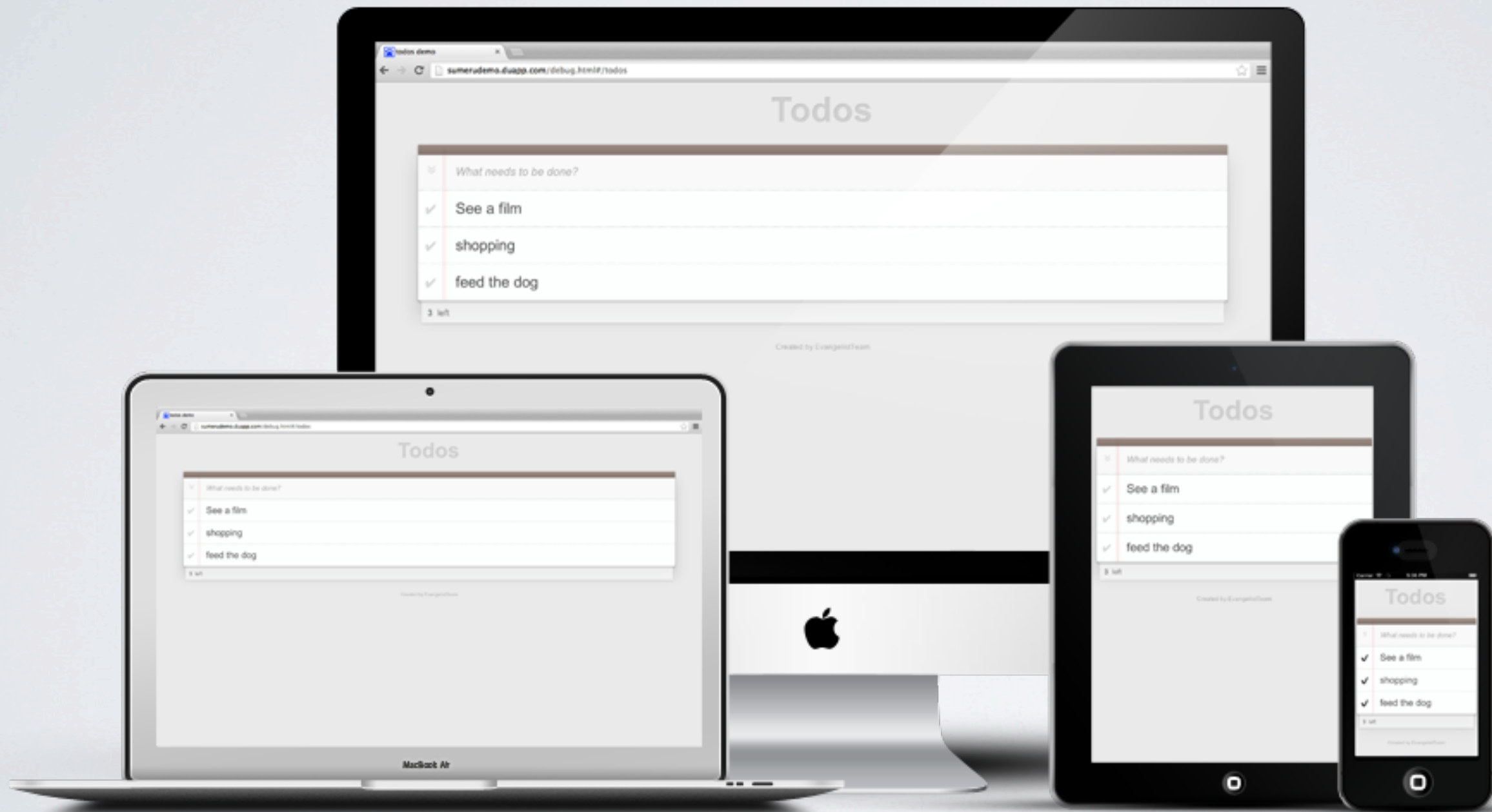
# BENEFITS

- Ignore Server & Interface
- 不再遍历和双向格式化接口数据
- 不再纠结端上数据缓存策略的tradeoff和时效性
- 不再需要协调多个角色





# A TO DO LIST



# A TO DO LIST





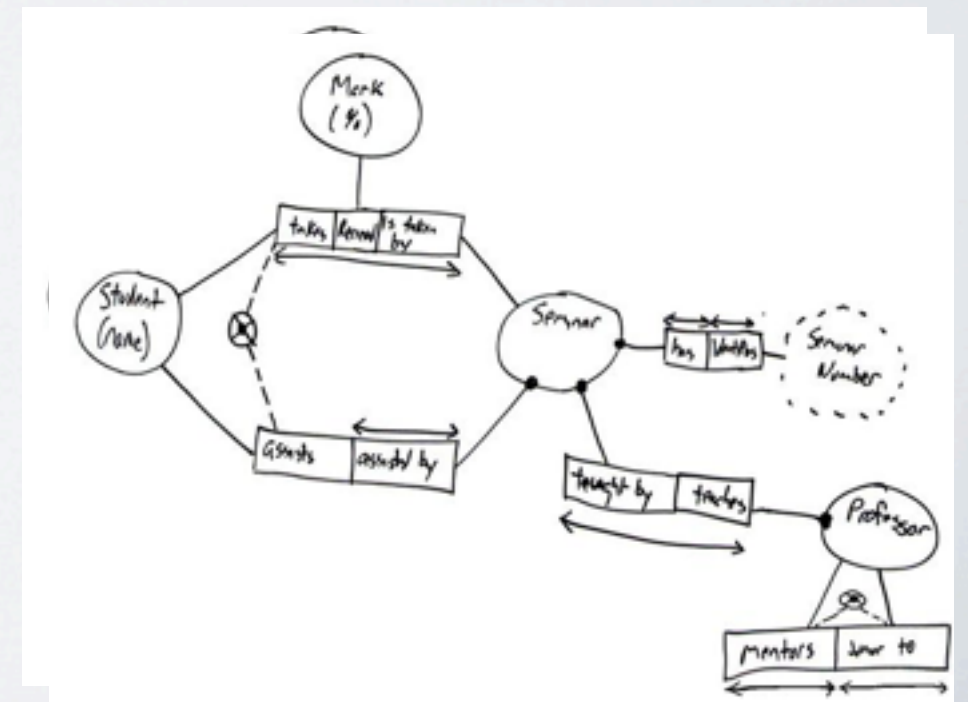
# 技术设计思路 TOP DOWN

- 控制层 -- Choose whatever you want
  - MVC / MVVM -- Spine, Knockout, Backbone, AngularJS ...
  - Compile to JS -- batman, Dart
  - Component -- polymer



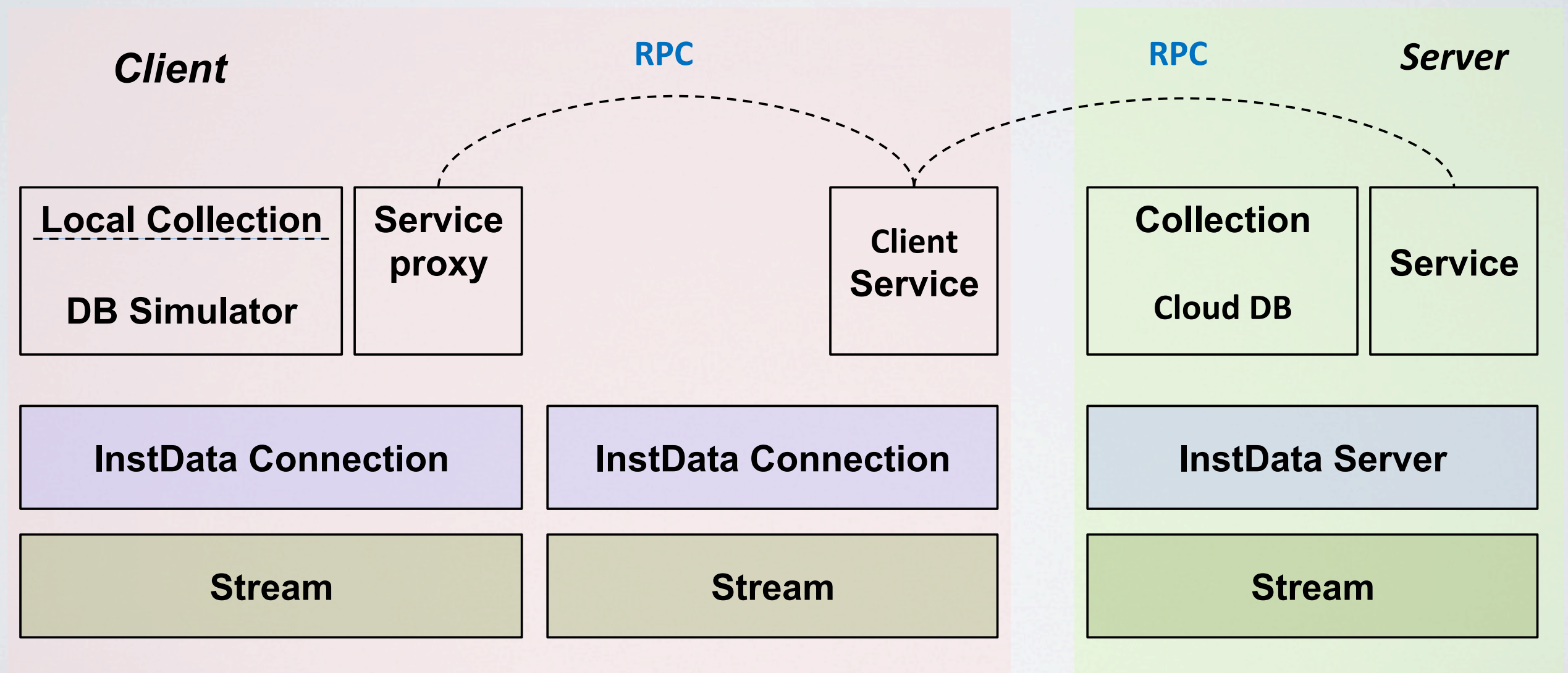
# 技术设计思路 TOP DOWN

- 数据层 - key part
  - ORM - bookshelf
  - dual side legacy db Interface - redis, mongo

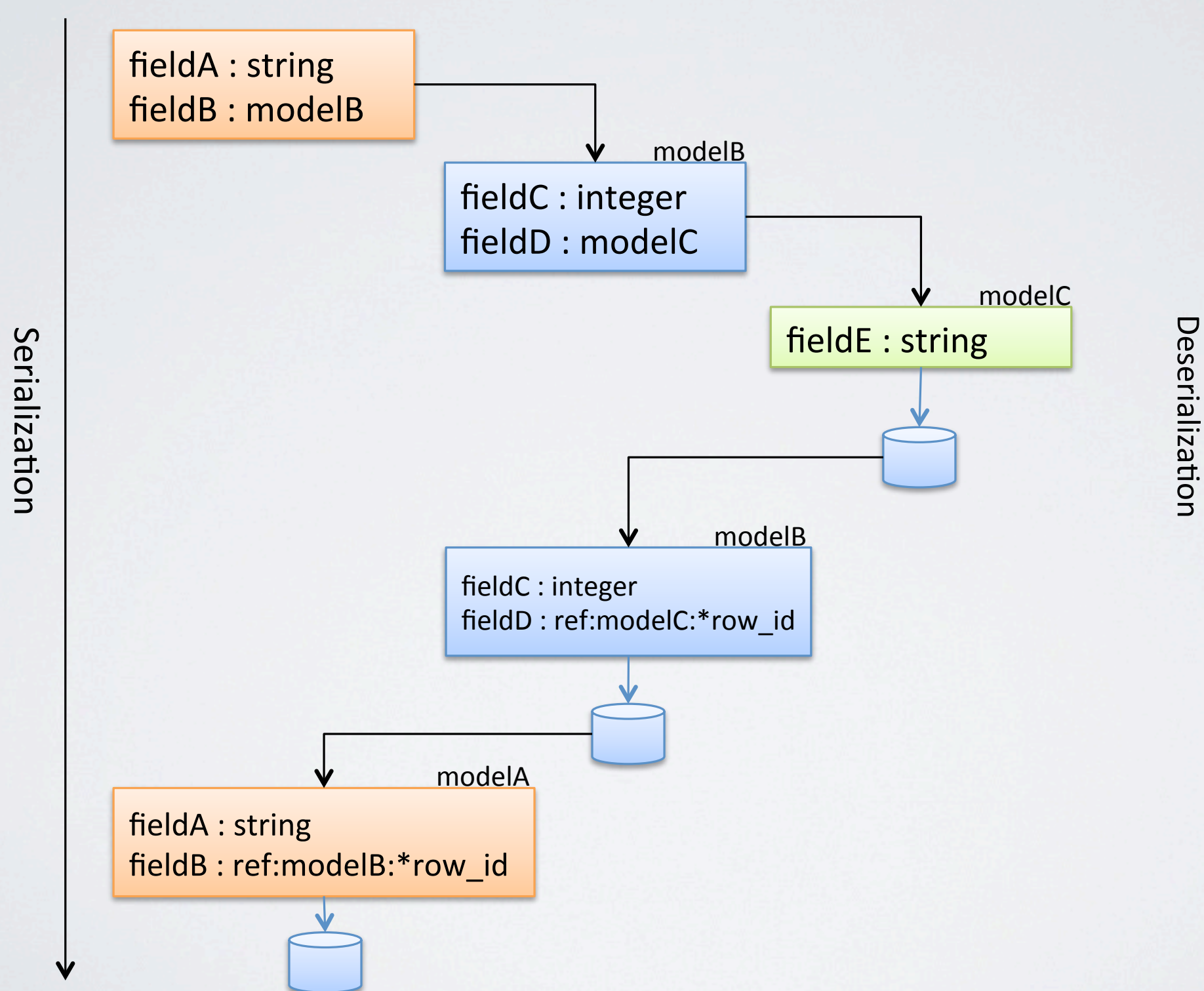




# 技术设计思路 TOP DOWN



# MODEL的序列化



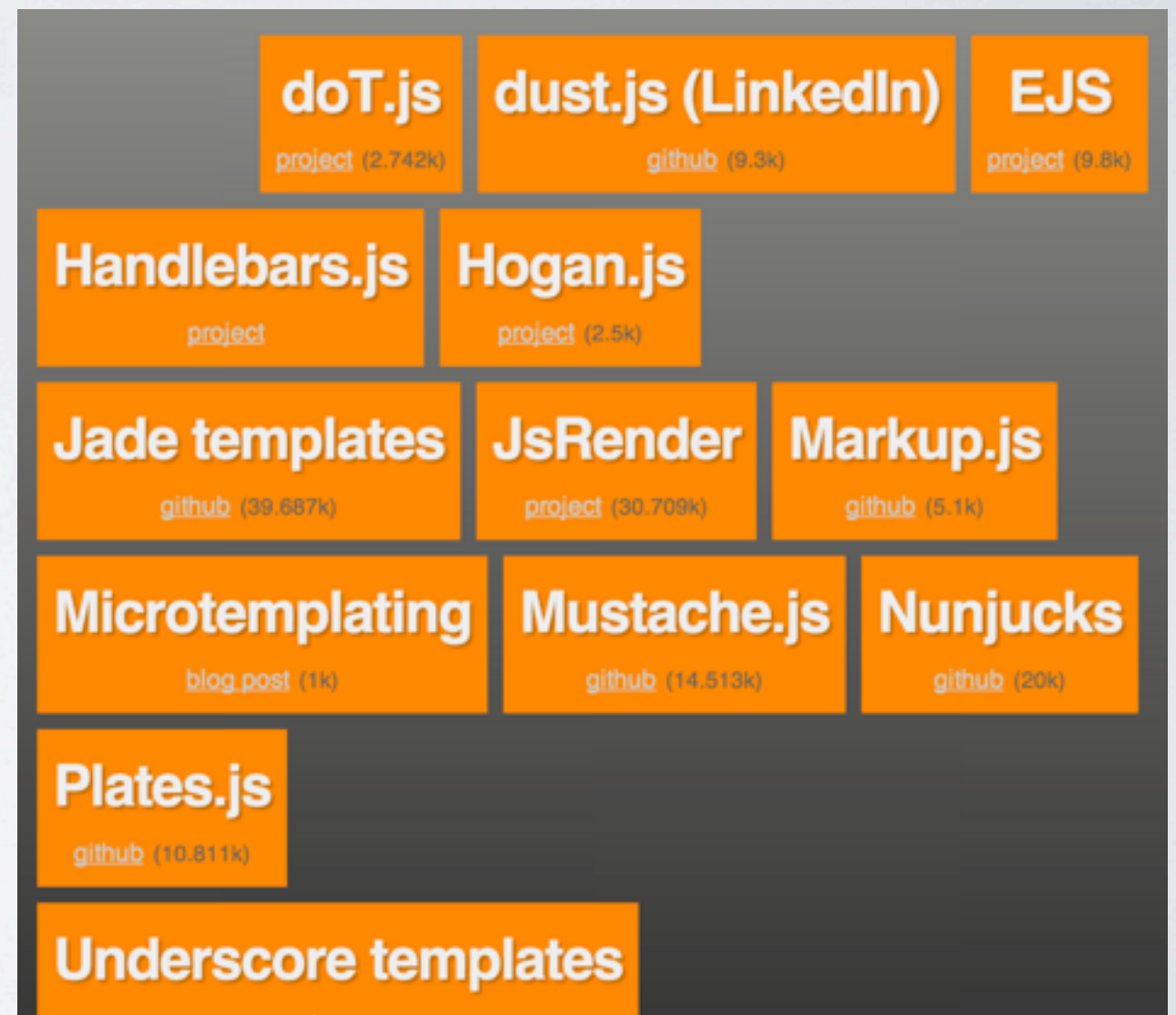


# 技术设计思路 TOP DOWN

- 数据层 - performance
  - optimized db read or well-controlled memory cache
  - diff & path enabled data protocol
  - existence of data version

# 技术设计思路 TOP DOWN

- 视图层
  - Javascript template engine - handlebars, mustache, icanhaz





# 技术设计思路 TOP DOWN

- 连接层
  - Websocket
  - XHR-Streaming
  - ~~Commet~~
  - ~~JSONP~~



# 多说一点-面向数据

- 也叫随动反馈

```
3 var ind = 1;
4 var dep = ind + 2;
5
6 assert(dep == 3); //this is expected
7
8 ind++;
9
10 assert(dep == 4); //but this is surprise: dep is updated automatically
```



# 多说一点-面向数据

- 实际场景--通常可减少30%-40%的工作量和代码复杂度



# REMIN

- Performance
- Always design for Offline
- Battery





# 西米露

- 百度云实时APP开发框架
- 是开源的，MIT协议
- 内部代号Sumeru，外部名称Clouda
- 敬请关注2013百度世界大会正式发布

# Q & A

## Thanks

百度西米露小组 童遥

Illustration source

<http://coding.smashingmagazine.com/2012/07/27/journey-through-the-javascript-mvc-jungle/>  
<http://www.agilemodeling.com/images/models/ormDiagramLarger.JPG>  
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