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开发者大会

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Architecture of a Modern Web App

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Overview

- Where we’ve been
- Where we’re going
- How we’ll get there
- Questions

Overview

- **Where we’ve been**
- Where we’re going
- How we’ll get there
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In the beginning...

- Sites were static HTML

String (Java Platform SE 6)

docs.oracle.com/javase/6/docs/api/

Java™ Platform
Standard Ed. 6

All Classes

Packages
java.applet
java.awt
java.awt.color
java.awt.datatransfer
java.awt.dnd
java.awt.event
java.awt.font
java.awt.geom
java.awt.im
java.awt.im.spi

java.lang
Interfaces
Appendable
CharSequence
Cloneable
Comparable
Iterable
Readable
Runnable
Thread.UncaughtExceptionHandler
Classes
Boolean
Byte
Character
Character.Subset
Character.UnicodeBlock
Class
ClassLoader
Compiler
Double
Enum
Float
InheritableThreadLocal
Integer
Long
Math
Number
Object
Package
Process
ProcessBuilder
Runtime
RuntimePermission
SecurityManager
Short
StackTraceElement
StrictMath
String
StringBuffer
StringBuilder

Overview Package Class Use Tree Deprecated Index Help

PREV CLASS NEXT CLASS — FRAMES NO FRAMES
SUMMARY: NESTED | FIELD | CONSTR | METHOD — DETAIL: FIELD | CONSTR | METHOD

Java™ Platform Standard Ed. 6

java.lang
Class String

```
java.lang.Object
  └ java.lang.String
```

All Implemented Interfaces:
Serializable, CharSequence, Comparable<String>

```
public final class String
extends Object
implements Serializable, Comparable<String>, CharSequence
```

The `String` class represents character strings. All string literals in Java programs, such as `"abc"`, are implemented as instances of this class.

Strings are constant; their values cannot be changed after they are created. String buffers support mutable strings. Because String objects are immutable they can be shared. For example:

```
String str = "abc";
```

is equivalent to:

```
char data[] = {'a', 'b', 'c'};
String str = new String(data);
```

Here are some more examples of how strings can be used:

```
System.out.println("abc");
String cde = "cde";
System.out.println("abc" + cde);
String c = "abc".substring(2,3);
String d = cde.substring(1, 2);
```

The class `String` includes methods for examining individual characters of the sequence, for comparing strings, for searching strings, for extracting substrings, and for creating a copy of a string with all characters translated to uppercase or to lowercase. Case mapping is based on the Unicode Standard version specified by the `Character` class.

The Java language provides special support for the string concatenation operator (+), and for conversion of other objects to strings. String concatenation is implemented through the `StringBuilder`(or `StringBuffer`) class and its `append` method. String conversions are implemented through the method `toString`, defined by `Object` and inherited by all classes in Java. For additional information on string concatenation and conversion, see Gosling, Joy, and Steele, *The Java Language Specification*.

Unless otherwise noted, passing a `null` argument to a constructor or method in this class will cause a `NullPointerException` to be thrown.

A `String` represents a string in the UTF-16 format in which *supplementary characters* are represented by *surrogate pairs* (see the section Unicode Character Representations in the `Character` class for more information). Index values refer to `char` code units, so a supplementary character uses two

Pros:

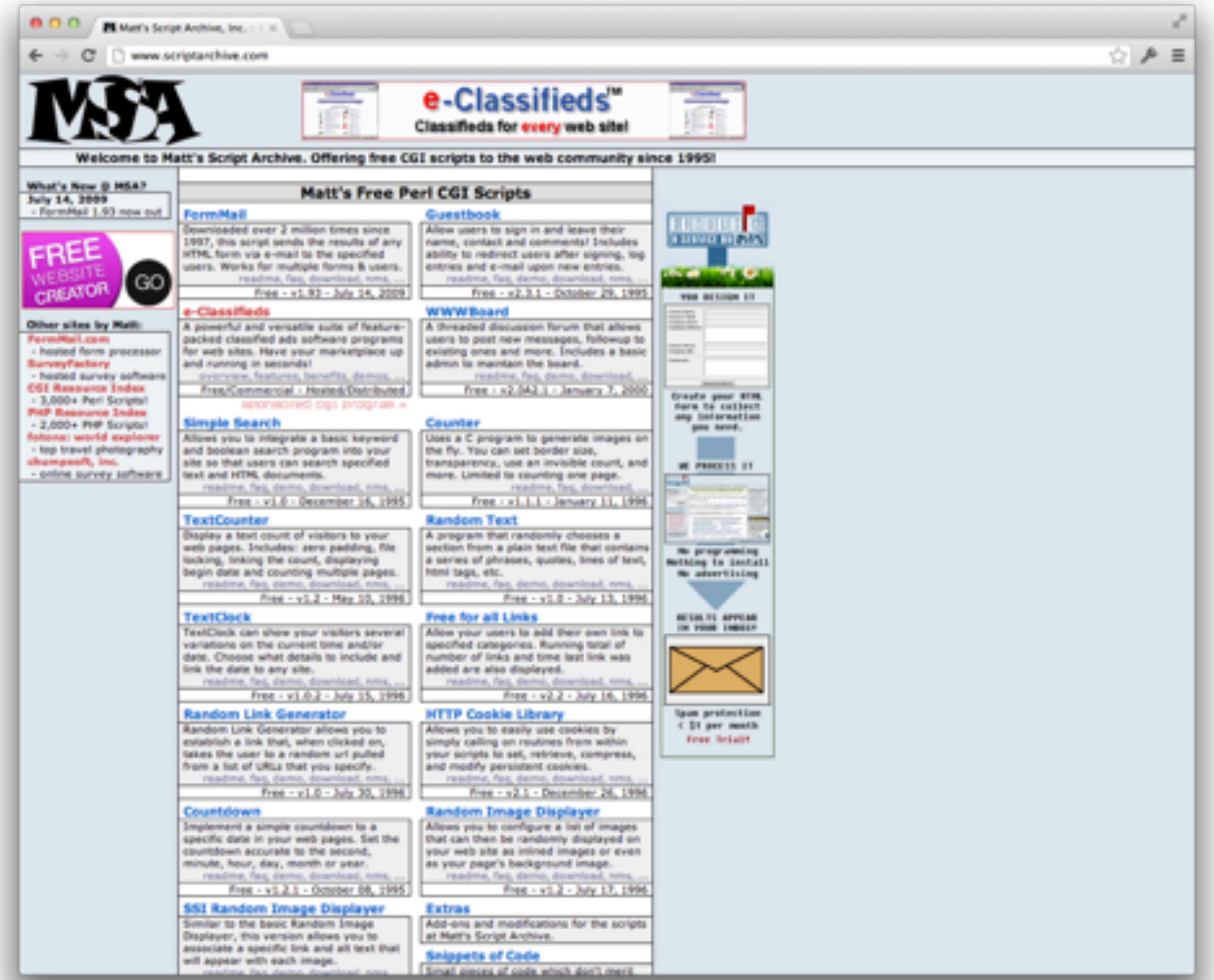
- low computational overhead
- highly cacheable
- highly indexable

Cons:

- hard (easy?) to update
- no personalization
- usually poor UI

Let there be CGI

- Introduced dynamic generated pages



Matt's Script Archive, Inc.

www.scriptarchive.com

MSA

e-Classifieds™ Classifieds for every web site!

Welcome to Matt's Script Archive. Offering free CGI scripts to the web community since 1995!

What's New @ MSA?
July 14, 2009
- FormMail 1.93 now out

FREE WEBSITE CREATOR GO

Other sites by Matt:
FormMail.com
- hosted form processor
SurveyFactory
- hosted survey software
CGI Resource Index
- 3,000+ Perl Scripts!
PHP Resource Index
- 2,000+ PHP Scripts!
fotone: world explorer
- top travel photography
chumpsoft, inc.
- online survey software

Matt's Free Perl CGI Scripts

FormMail
Downloaded over 2 million times since 1997, this script sends the results of any HTML form via e-mail to the specified users. Works for multiple forms & users.
readme, faq, download, nms, ...
Free - v1.93 - July 14, 2009

Guestbook
Allow users to sign in and leave their name, contact and comments! Includes ability to redirect users after signing, log entries and e-mail upon new entries.
readme, faq, demo, download, nms, ...
Free - v2.3.1 - October 29, 1995

e-Classifieds
A powerful and versatile suite of feature-packed classified ads software programs for web sites. Have your marketplace up and running in seconds!
overview, features, benefits, demos, ...
Free/Commercial - Hosted/Distributed

WWWBoard
A threaded discussion forum that allows users to post new messages, followup to existing ones and more. Includes a basic admin to maintain the board.
readme, faq, demo, download, ...
Free - v2.0A2.1 - January 7, 2000

sponsored cgi program »

Simple Search
Allows you to integrate a basic keyword and boolean search program into your site so that users can search specified text and HTML documents.
readme, faq, demo, download, nms, ...
Free - v1.0 - December 16, 1995

Counter
Uses a C program to generate images on the fly. You can set border size, transparency, use an invisible count, and more. Limited to counting one page.
readme, faq, download, ...
Free - v1.1.1 - January 11, 1996

TextCounter
Display a text count of visitors to your web pages. Includes: zero padding, file locking, linking the count, displaying begin date and counting multiple pages.
readme, faq, demo, download, nms, ...
Free - v1.2 - May 10, 1996

Random Text
A program that randomly chooses a section from a plain text file that contains a series of phrases, quotes, lines of text, html tags, etc.
readme, faq, demo, download, nms, ...
Free - v1.0 - July 13, 1996

TextClock
TextClock can show your visitors several variations on the current time and/or date. Choose what details to include and link the date to any site.
readme, faq, demo, download, nms, ...
Free - v1.0.2 - July 15, 1996

Free for all Links
Allow your users to add their own link to specified categories. Running total of number of links and time last link was added are also displayed.
readme, faq, demo, download, nms, ...
Free - v2.2 - July 16, 1996

Random Link Generator
Random Link Generator allows you to establish a link that, when clicked on, takes the user to a random url pulled from a list of URLs that you specify.
readme, faq, demo, download, nms, ...
Free - v1.0 - July 30, 1996

HTTP Cookie Library
Allows you to easily use cookies by simply calling on routines from within your scripts to set, retrieve, compress, and modify persistent cookies.
readme, faq, demo, download, nms, ...
Free - v2.1 - December 26, 1996

Countdown
Implement a simple countdown to a specific date in your web pages. Set the countdown accurate to the second, minute, hour, day, month or year.
readme, faq, demo, download, nms, ...
Free - v1.2.1 - October 08, 1995

Random Image Displayer
Allows you to configure a list of images that can then be randomly displayed on your web site as inlined images or even as your page's background image.
readme, faq, demo, download, nms, ...
Free - v1.2 - July 17, 1996

SSI Random Image Displayer
Similar to the basic Random Image Displayer, this version allows you to associate a specific link and alt text that will appear with each image.
readme, faq, demo, download, nms, ...

Extras
Add-ons and modifications for the scripts at Matt's Script Archive.

Snippets of Code
Small pieces of code which don't merit

Pros:

- dynamic!
- selectively cacheable
- highly indexable
- personalizable

Cons:

- “high” computational overhead
- hard to create
- usually poor UI

~~LiveScript~~ JavaScript

- Dynamic pages
- Lightweight alternative to applets
- Mostly used for simple scripting
  - basic form validation
  - popup ads
  - comet cursor trails

http://en.wikipedia.org/wiki/File:Pop-up_ads.jpg

Pros:

- enhanced usability, *maybe*
- reduced trips to the server

Cons:

- abuses annoyed users
- business logic often implemented twice: client and server

AJAX - Web 2.0

- Google Maps sparked Web 2.0
- GMail
  - required JavaScript

Pros:

- killer UI
- more responsive apps

Cons:

- difficult to cache
- impossible to index
- required JavaScript

Unobtrusive JavaScript

- No JavaScript, no problem
- Provide features for user agents that support them
  - fall back to basic HTML

Pros:

- wider compatibility
- just as rich UI
- just as responsive

Cons:

- higher development costs
- requires thoughtful engineering

Client Side Applications

- Business logic lives on the client
- Resources and permanent state stored on the server
- Application state stored on client

Pros:

- reduce server workloads
- application is highly cacheable
- extremely rich UI

Cons:

- content not indexable
- requires JavaScript
- often requires a ‘modern’ browser

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Demo

Meteor

http://meteor.com/

Meteor Recap

- Wow!
- Tons of power for little code
- Data auto synchronized
- Developer velocity
- Unified programming model on client and server
- Only need the ‘meteor’ command

- Is my database exposed to the client?
- What about accessibility?
- Will search engines index my site?
- What happens when my app gets complex?
- MongoDB centric
- Cumbersome to deploy to Cloud Foundry

Demo

Derby

http://derbyjs.com/

Derby Recap

- Wow
  - although not a slick as Meteor
- More traditional structure
  - if you like node.js
- Progressive enhancement
  - fully indexable
- Data auto synchronized
- Need to manually provision a development database
- MongoDB centric

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Client side code as a first class citizen

- Apply design patterns
- Modularize
- Unit test
- Enforce code quality

Demo

Client side code as a first class citizen

Think Messaging

- Web Sockets are message based
- Web Workers are message based
- DOM Events are message based

- Web vs Integration is a false dichotomy

Demo

Client Server Messaging

Simplify Views

- Simple template can render on the client or server
  - JSP, et al will never render client side

- Avoid imperative logic
- Lot of conditions may indicate the model is poorly structured

- Can the model be cleanly serialized?

~~Client vs Server~~

- The definitions of “back-end” and “front-end” are shifting
  - front-end != client, back-end != server
- Embrace both sides
- Specialize in client/server integration

Frameworks

- New frameworks are emerging
  - not quite prime time
  - watch this space

- Frameworks will not solve all your issues
  - sorry

Questions?

Cloud Foundry 启动营

在www.cloudfoundry.com注册账号并成功上传应用程序,

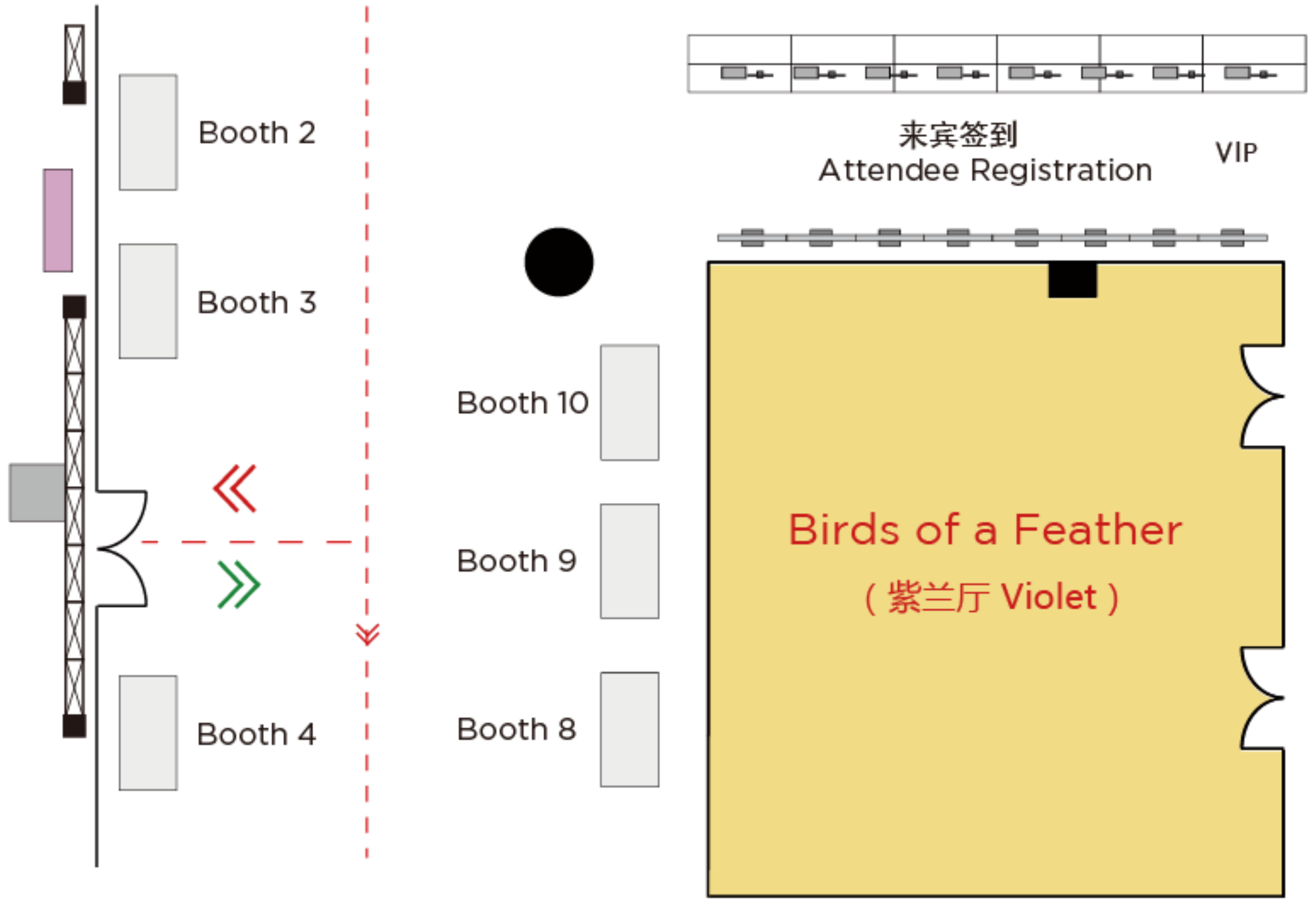
即可于12月8日中午后凭账号ID和应用URL到签到处换取Cloud Foundry主题卫衣一件。

iPhone5 等你拿

第二天大会结束前， 请不要提前离开， 将填写完整的意见反馈表投到签到处的抽奖箱内，
即可参与“iPhone5”抽奖活动。

Birds of a Feather 专家面对面

所有讲师都会在课程结束后，到紫兰厅与来宾讨论课程上的问题


Booth 2
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Booth 4
来宾签到
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Booth 9
Booth 8
Birds of a Feather
（紫兰厅 Violet）