

Writing Better Code Examples

Concentrating on the right
examples

May 22, 2010

salesforce.com

**Your success.
Our cloud.**



Introduction

- Leah Cutter, Staff Technical Writer for Salesforce.com
- Degrees in English Literature and Computer Science
- Have been doing technical writing off and on since 1985



Audience Survey

- How many of you will need to write API or SDK doc?
- How many of you already write API or SDK doc?
- How many of you write your own code examples?



Overview

- Developers always want more code examples
- Doc writers always have too much on their plate
- By better defining your audience and the types of code examples they require, will help you prioritize what examples you do given limited resources

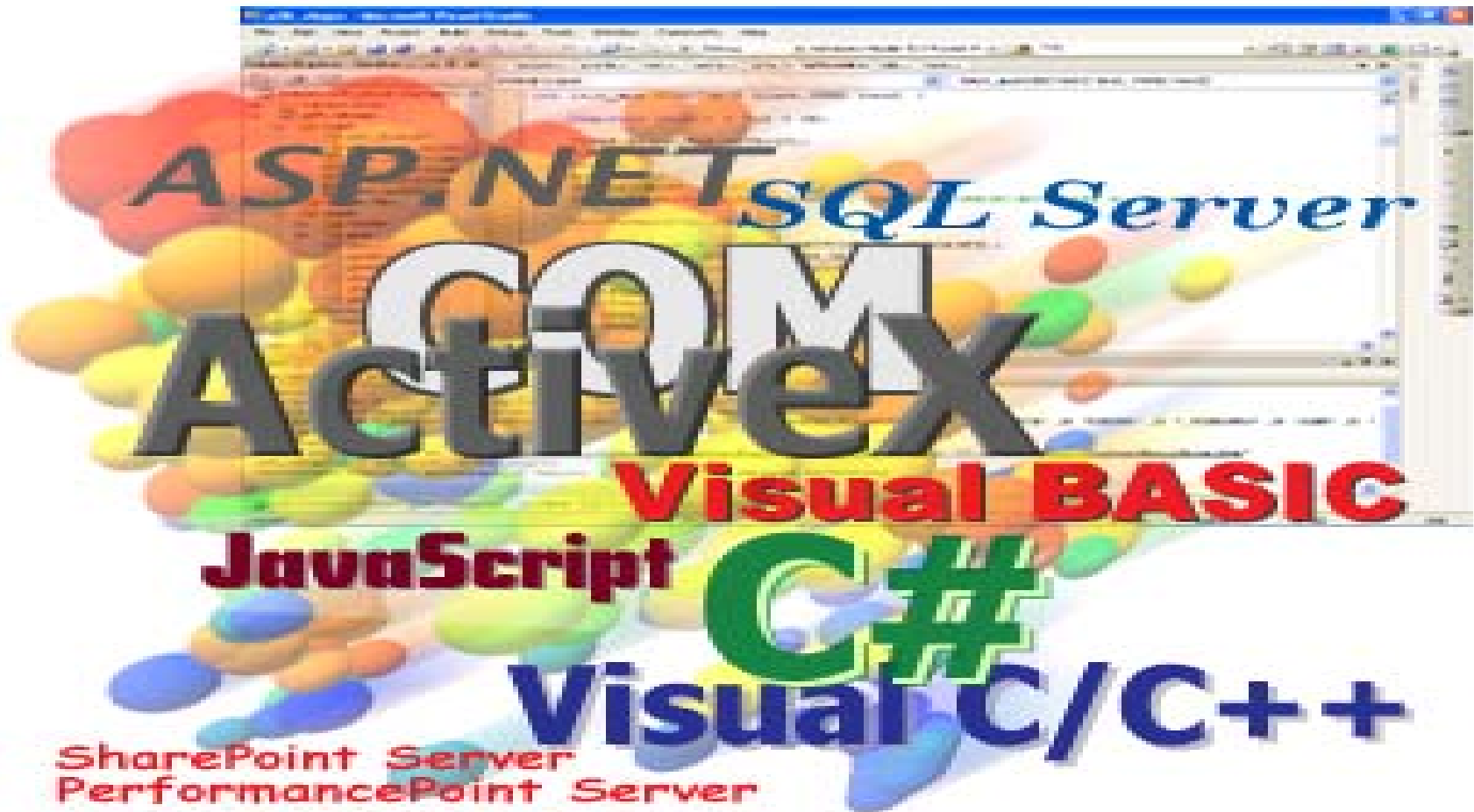


Overview

- Audience – because just saying “a developer” isn’t precise enough. By better defining your audience, you’ll be able to provide more useful code examples to fill in gaps in their knowledge.
- Code examples – What are some different types of code examples, and when would you use each?
- Code accuracy – if your examples aren’t accurate, developers won’t trust the rest of your documentation



Audience: because just saying
“developer” isn’t precise enough



Audience

- How do your developers learn?
- Selecting the best examples for your developer
- What type of developer are they likely to be, vs. what type of developer do they need to be?
- What additional product specific knowledge does your developer need?



Audience: learning styles

- Different developers learn in different ways:
 - Just reads the code
 - Code comments, code segments, example programs, reference
 - Wants all the background information first
 - Info on framework, concepts, designs
 - Only reads when necessary
 - Program examples, concepts



Audience: learning styles

- Just reads the code:
 - Reference, cookbook: the more examples the better
- Background information
 - Developer's guide, design patterns, conceptual information: end to end examples
- Reads as necessary
 - Cookbook, reference, conceptual information: mixture



Audience: selecting examples

- How advanced is your developer? Do they need training in:
 - OO
 - Web services
 - Relational databases
- How much of the basics do you cover in your examples?



Audience: have vs. need

- What does your audience have in the way of skills? Think about your product, and the types of developers likely to use it.
- What does your audience **need** in the way of skills?
 - Java vs. database
 - Web vs. network
 - Telephony vs. mobile



Audience: have vs. need

- Focus your examples to demonstrate skills your developer needs
 - For example, test driven environment, always include tests



Audience: your product

- What about your product is different?
 - Tests required, governor limits
- How does your product implement a standard?
 - OAuth, JDBC
- Examples of differences (in Java, to achieve X, you do it this way. In Apex, do it this way.)



Code examples

```
package com.android.helloandroid;

import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

public class HelloAndroid extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        TextView tv = new TextView(this);
        tv.setText("Hello, Android");
        setContentView(tv);
    }
}
```



Types of code examples

- Proof of concept
- Problem solving
- Design patterns
- Progressive improvement
- Negative examples



Types of code examples: proof of concept

- Showing syntax
 - Pseudo code (marked as such)
- Code snippets
 - Code snippets must include some sort of result, such as a `println` statement
- Used by developers who just read code



Examples

Pseudo code:

```
Class myClass = new <someclassname>();
```

Working code snippet:

```
Decimal myDecimal = 12.4567;
```

```
Decimal divDec =
```

```
    MyDecimal.divide(7, 2,  
        System.RoundingMode.UP);
```

```
System.assertEquals(divDec, 1.78);
```



Types of code examples: problem solving

- Real world example, actual use case
 - Ex: You want to display a currency value, but the API doesn't return currencies in a formatted state.
- May be cookbook recipes
 - Of the format: Problem, Solution, Discussion
- May involve more than one area of a product, such as, phone GPS and ring, batch processing and email



Types of code examples: problem solving

- Should include testing, because automation occurs in most products
- Should be secure
- Possibly the most difficult to create
- Most programmers will read these



Types of code examples: design patterns

- What are the typical patterns that a good program should follow?
 - Think of this as best practices – can do it more than one way, what is the recommended way? And why?
 - Can also think of this as optimization
- Patterns for different types of programs, such as web callouts, testing, etc.
- Used by developers who want conceptual and framework information, as well as more advanced developers



Types of code examples: progressive improvement

- Start with a very basic program, then improve upon it
- May include typical errors to show debugging techniques
- Very real-world situation, as requirements are always added last minute to a coding project by management
- Always include complete code example at some point
- Could be teaching bad programming habits



Progressive improvement

- Used by all developers
- For example, start with Hello World
 - Add a variable to find the name of the current user
 - First display to screen, then write to a file
 - Try to test the program, show typical error developer may run into trying to write a test
 - Write a program, then make it secure



Types of code examples: negative examples

- Examples of bad programming patterns
 - What you shouldn't do
 - Why you shouldn't do it
 - What you should do instead
- These are very useful for teaching general programming design patterns
- Read by developers who read framework and conceptual information



Types of code examples: negative examples

- Can have the opposite effect, and that your developer only remembers the bad pattern
 - Be sure to make the “good” pattern memorable!
- Possibly can't be included in automated testing



Code accuracy



Code accuracy

- Add comments
- Follow naming standards
- Should compile and run
- Require working code examples
- Part of the test suite
- Documentation examples match IDE
- Make copy/paste easy!



Code accuracy: add comments

- Add comments to the code in the doc for the same reasons you add comments in actual code:
 - The next person updating your doc may or may not understand it
 - If something breaks, you'll have an easier time of debugging
- Code comments help developers too!



Code accuracy: follow naming standards

- All code is readable if following naming standards
- Java has very specific naming standards
- If no naming standards available, create them, document them and follow them
- Make class, method and variable names useful



Follow naming standards!

- All Java methods start with a verb and a lower case letter. All Java classes start with an upper case letter. Which of the following are Java methods? Which are classes?

`calculateArea`

`Rectangle`

`getName`



Code examples: should compile and run

- Aim for 95% of all examples be working examples
- Don't have to create your own examples, just test the ones handed to you
 - This means a working test environment.
 - Use the IDE your developers use, such as Eclipse, NetBeans, or your own product.
 - Bribe your developer to help set one up if necessary.



Code examples: require working examples (with tests!)

- Require that all changes to the API, SDK or language come with a working code example
- All working examples should come with tests
- All working examples should follow good programming patterns for your product
- All working examples should be secure



Code examples: part of the test suite

- Is there a “gold file” that you can use to verify that what’s in your doc is accurate?
- Is it possible to have your code examples become part of your product’s automated test suite?
- Is it possible to generate at least part of your documentation from the code library?
- Start small, one step at a time.



Code examples: doc examples match IDE

- Even if color coding isn't possible, can your example still match the recommended IDE?
 - Color coding, italicized, etc.
 - Automatic indenting
- Broken up for readability



Example of code in doc looking like code in the editor



```
-----  
// This class updates the Hello field on account records that are  
// passed to it.
```

```
public class MyHelloWorld {  
  
    public static void addHelloWorld(Account[] accs) {  
  
        for (Account a:accs){  
            if (a.Hello__c != 'World') {a.Hello__c = 'World';  
            }  
        }  
    }  
}
```



Code examples: making copy and paste easy

- In the tool
- Developers are used to searching for code examples (programming by Google is very popular.) If your documentation is published on the web, or even a private site, make sure it's searchable!
- Use accurate keywords
- Spell out the use case in the index



Q&A

