
Acrobat Forms 101

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About the Presenter

Carl Young is president of DigiPub Solutions Corp., and the producer of the PDF 2000 Conference. Carl is an Adobe Certified Expert in Acrobat and FrameMaker and a Certified Technical Trainer. He is past president of the Phoenix Chapter of the Society for Technical Communication, and is founder and coordinator of STC's Arizona FrameMaker User Network and Acrobat special interest groups.

Carl often presents on Acrobat on behalf of Adobe at trade shows and seminars. Most recently, he spoke on Acrobat at the STC Region 5 Conference in October 1999, and at the National Science Foundation Small Business Innovation Research National Conference in Las Vegas, NV, in November 1999.

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Acrobat Forms 101

This paper provides an overview of Adobe Acrobat forms creation. It is based on my experience as a trainer working with both large and small corporations.

It is my experience that many students come into class not even thinking about the forms capability of Acrobat. They are there to learn how to make better-looking PDFs, and haven't had time or interest to look the powerful forms capability of Acrobat. After they see what forms can do, they say "Wow" and go back and try to implement forms at work.

I've often thought about why so few people walk into class with forms creation in mind. I have a few theories:

- Forms are someone else's job. Many of my students are technical writers. Traditionally, forms have been created by the human resources and finance departments. With more forms going on the web, and more people filling out forms, I think technical communicators could be a big help in improving the effectiveness of forms.
- Forms are boring. Forms are often an afterthought, and the last thing done before a process rolls out or is modified. Forms really are a key to making a new or improved process a success. Interactive forms are definitely more fun to create than paper-based ones.
- Forms belong to the web team. They certainly can be, but web designers need good direction to produce effective forms. Without effective direction, web-based forms can be as incomprehensible as the old paper-based ones. Again, this is an area where technical communicators can play a big role.

This presentation is titled *Acrobat Forms 101*. It is a very basic view of Acrobat forms. If you are new to Acrobat forms or thinking of implementing forms, this presentation is for you.

1 Where do forms come from?

There are three ways to create a form:

- Convert an existing form.
- Create a shell in another application and add fields with Acrobat.
- Use Web Capture to turn an html form into an Acrobat form.

Convert an existing form

Many companies want to start by converting existing forms to PDF. A great tool for this conversion is OmniForm from ScanSoft (formerly Caere). See www.caere.com for more information. This tool works for paper and electronic forms. There are probably similar tools available, but this is one I am familiar with. It converts JetForms to PDF.

Create a shell

This is a common way to begin if you do not have an existing form. You create a shell form using your favorite page layout or word processing software, and then use Acrobat to lay in fields in the shell. It's this method that we will spend the most time with today because it explains what the automated tools like OmniForm are doing.

Use Web Capture

Acrobat 4.0's "Web Spider" application is surprisingly powerful. Not only does it turn regular html pages into PDF, but it also will transform an html form into an Acrobat form. We will take a look at an example at the end of this presentation.


2 Convert an existing form

Although you can start with an electronic form, such as JetForm, we will start from paper. After all, if we can convert paper to an Acrobat form, then converting an electronic form with already-delineated fields should be easier. (It is.)


An evaluation form

Let's say that one of the presenters at the PDF 2000 Conference sent his materials in on paper, and we want to turn it into an electronic form.

By using OmniForm, we can easily turn this piece of paper into an electronic form. Below is a scan of the original.



Evaluation/Questionnaire



I want to make my presentations even better. Please take a moment to share your thoughts about this event.

Today's date: June 5, 2000 Place: PDF 2000, Scottsdale

1. On a scale of 1 to 5 how would you rate the following compared to other speakers and presentations (please circle):

| | Low | Medium | High | | |
|---|-----|--------|------|---|---|
| a. Overall presentation for <i>content</i> : | 1 | 2 | 3 | 4 | 5 |
| b. Overall presentation for <i>organization</i> : | 1 | 2 | 3 | 4 | 5 |
| c. Dan on <i>knowledge of topic</i> : | 1 | 2 | 3 | 4 | 5 |
| d. Dan on <i>speaking ability/delivery</i> : | 1 | 2 | 3 | 4 | 5 |

2. Which topic or section did you find most useful (What should I expand on)?

a. Least useful (What should I leave out)?

3. How else could the presentation be improved?

4. Did you receive enough handout/resource material?

5. Was the presentation worth your time and money?

6. How did you hear of this event?

7. Any general comments?

Please add me to your mailing list for a free information kit and more resources.
 I like what I heard today and I want more. Please send details on Dan's: seminars, speaking to my group and/or private consulting.

Your name: _____ Company name: _____

Address: _____ City: _____

State: _____ ZIP: _____ Tel: () _____

email: _____ Please print clearly

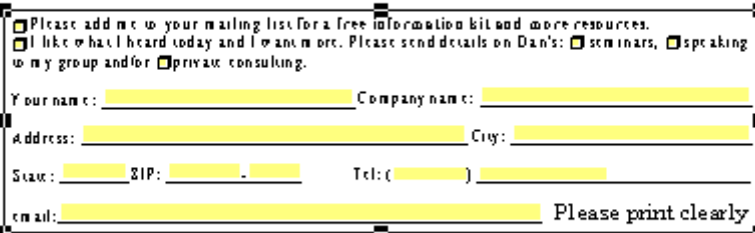
Please hand this evaluation to me now or send it to Para Publishing, PO Box 8206, Santa Barbara, CA 93118-8206. Tel: (805) 968-7277, Fax: (805) 968-1379, email: DanPoynter@ParaPublishing.com.

As you can see at a glance, this is a form. It has boxes to check off and information to fill in.

To begin, you start OmniForm, put the form in our scanner and import the scan. You select options in OmniForm to automatically create form fields. The figure below shows what the raw scan in OmniForm looks like.

For the sake of clarity, let's just focus on the square in the bottom.

7. Any general comments?



Please add me to your mailing list for a free information kit and more resources.
 I like what I heard today and I want more. Please send details on Dan's: seminars, speaking to my group and/or private consulting.

Your name: _____ Company name: _____

Address: _____ City: _____

State: _____ ZIP: _____ Tel: () _____

email: _____ Please print clearly

Please hand this evaluation to me now or send it to Para Publishing, PO Box 8206, Santa Barbara, CA 93118-8206. Tel: (805) 968-7277, Fax: (805) 968-1379, email: DanPoynter@ParaPublishing.com.

The software identified fields and generally made a good guess at what kind of field they should be: text, check box and so on. The text looks a little rough, but OmniForm generally clears that up pretty well, too.

The next step is to choose File > Save As and select PDF. The same form when saved as PDF looks like this.

5. Was the presentation worth your time and money?

6. How did you hear of this event?

7. Any general comments?

| | |
|--|--|
| <input checked="" type="checkbox"/> Please add me to your mailing list for a free information kit and more resources. | |
| <input type="checkbox"/> I like what I heard today and I want more. Please send details on Dan's: <input type="checkbox"/> seminars, <input checked="" type="checkbox"/> speaking to my group and/or <input checked="" type="checkbox"/> private consulting. | |
| Your name: <u>Carl Young</u> | Company name: <u>DigiPub Solutions Corp.</u> |
| Address: _____ | City: _____ |
| State: _____ ZIP: _____ | Tel: () _____ |
| email: _____ Please print clearly | |

Although it doesn't show up here, OmniForm created check boxes and text fields in the right positions. If necessary, you can use Acrobat to change form properties or to change a field type.

All in all, it is a simple, clean conversion.

To convert JetForms, open the JetForm up in OmniForm and choose File > Save As and choose PDF.

3 Create a form from a shell

Many large organizations, including most major corporations, run on forms. But when you mention the word "form," which entity comes to mind first? Oh, yes, the government. They are here to help you, and a form is required.

The IRS was an early adopter of PDF-based forms. It's easy to see why. Isn't it much easier to download a tax form from the web than to run down to the library or post office and hope they have your form in stock? Not to mention that the web, unlike your local library, never closes.

Generally, the IRS forms are meant to be printed out and filled in by hand, just like the old days. In fact, many companies are doing the same thing with their "electronic" forms. Printable forms save some paper (or at least transfers the cost to the user), and can be a good way for people to become familiar to the idea of working with forms electronically.

To create a shell such as a standard tax form, you create the basic form in your favorite page layout or word processing application. Common ones include FrameMaker, PageMaker, InDesign, XPress, and Microsoft Word. You then PDF the application file, and open the "formless" application in Acrobat to add fields.

Instead of creating your own form, for practice you can download a 1040EZ form from the www.irs.gov site. That's the form we will be using here. It's the same principle as creating your own, except that the U.S. taxpayer has already paid to have this shell created.

The shell

The form we will use in this example is the 1040EZ form. It's a two page form, but the only part we are about is Page One.

Department of the Treasury—Internal Revenue Service

Form **1040EZ** **Income Tax Return for Single and Joint Filers With No Dependents** (99) **1999** OMB No. 1545-0675

| | | |
|-------------------------------|---|-----------|
| Use the IRS label here | Your first name and initial | Last name |
| | If a joint return, spouse's first name and initial | Last name |
| | Home address (number and street). If you have a P.O. box, see page 12. | Apt. no. |
| | City, town or post office, state, and ZIP code. If you have a foreign address, see page 12. | |

Your social security number

Spouse's social security number

▲ IMPORTANT! ▲
 You **must** enter your SSN(s) above.

Presidential Election Campaign (See page 12.)
Note. Checking "Yes" will not change your tax or reduce your refund.
 Do you want \$3 to go to this fund? Yes No
 If a joint return, does your spouse want \$3 to go to this fund? Yes No

Income
Attach Copy B of Form(s) W-2 here. Enclose, but do not staple, any payment.

1 Total wages, salaries, and tips. This should be shown in box 1 of your W-2 form(s). Attach your W-2 form(s). 1

2 Taxable interest. If the total is over \$400, you cannot use Form 1040EZ. 2

3 Unemployment compensation, qualified state tuition program earnings, and Alaska Permanent Fund dividends (see page 14). 3

4 Add lines 1, 2, and 3. This is your **adjusted gross income**. 4

5 Can your parents (or someone else) claim you on their return?
Yes. Enter amount from worksheet **No.** If **single**, enter 7,050.00. If **married**, enter 12,700.00. See back for explanation. 5

6 Subtract line 5 from line 4. If line 5 is larger than line 4, enter 0. This is your **taxable income**. 6

7 Enter your Federal income tax withheld from box 2 of your W-2 form(s). 7

8a Earned income credit (see page 15).
b Nontaxable earned income: enter type and amount below.
 Type \$ 8a

9 Add lines 7 and 8a. These are your **total payments**. 9

10 **Tax.** Use the amount on **line 6** above to find your tax in the tax table on pages 24–28 of the booklet. Then, enter the tax from the table on this line. 10

Refund
 Have it directly deposited! See page 20 and fill in 11b, 11c, and 11d.

11a If line 9 is larger than line 10, subtract line 10 from line 9. This is your **refund**. 11a

b Routing number

c Type: Checking Savings **d** Account number

12 If line 10 is larger than line 9, subtract line 9 from line 10. This is the **amount you owe**. See page 21 for details on how to pay. 12

I have read this return. Under penalties of perjury, I declare that to the best of my knowledge and belief, the return is true, correct, and accurately lists all amounts and sources of income I received during the tax year.

Sign here
 Your signature _____ Spouse's signature if joint return. See page 11. _____

Keep copy for your records. Date _____ Your occupation _____ Date _____ Spouse's occupation _____

For Official Use Only

For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see page 23. Cat. No. 11329W 1999 Form 1040EZ

The procedure

Now it is time to create our own form. We will not complete all the fields, but you may wish to do so on your own later.

| Step | Action |
|------|--|
| 1 | Open 1040EZ.pdf in Acrobat. |
| 2 | Select the Form tool. |
| 3 | Marquee (click and drag) a box in the First Name area of the form. |
| 4 | Name the field FirstMI. |
| 5 | Type should be Text. |
| 6 | Click OK. |
| 7 | Use the Form tool to create another field. |
| 8 | Name this field Last. |
| 9 | Finish the name and address information part of the form, excluding Social Security numbers. |

Note: Choose View > Show Forms Grid to help align the form fields.

Formatting fields

We will now create the Social Security number fields, and use a special format so users can only enter a Social Security number with the correct number of digits.

| Step | Action |
|------|---|
| 1 | Marquee the first Social Security box. |
| 2 | Name the field SS1. |
| 3 | Choose Format > Special > Social Security Number. |
| 4 | Click OK. |
| 5 | Complete the spouse Social Security Box. Name it SS2. |

Note: Use Appearance > Text options in the Field Properties box to change the look of text.

Create check boxes

Now we will make some boxes easy to check off by creating buttons.

| Step | Action |
|------|---|
| 1 | Using the Form tool, marquee around the Yes box across from "Do you want \$3 to go to this fund?" |
| 2 | Name this field Prez1 and make the type Radio Button. |
| 3 | Under Options, make the style Check and the Export Value Yes. |
| 4 | Copy the Prez1 field and paste it over the No box. |
| 5 | Double-click on the box to open it. |
| 6 | Change the export value to No. |
| 7 | Click on the Hand tool and test your work. |
| 8 | Finish the spouse Presidential Election Campaign Yes/No fields. |

Note: You can duplicate form fields by holding down the Ctrl key (Option key on the Mac) and dragging the field to the new location.

Note: Control-A selects all fields.

Create a list box

Now we will add a list of choices to the form.

| Step | Action |
|------|---|
| 1 | Marquee with the Form tool around the box named Type in 8b, Earned Income Tax Credit. |
| 2 | Name the field Credit and make the type List Box. |
| 3 | Under Options, enter Minister in the Item list and export value. |
| 4 | Click Add. |
| 5 | Add Household Employee and Inmate to the list. |
| 6 | Add the text Choose One and make it the first item. |
| 7 | Click OK. |
| 8 | Select the Hand tool and check the field. |

Restrict data entry in field

To keep users from entering invalid data, it is useful to validate the data entered in the field.

| Step | Action |
|------|---|
| 1 | Using the Form tool, marquee the \$ amount box to the right of the Type box in 8b. |
| 2 | Name the Field Earned\$ and make the type Text. |
| 3 | Under the Format tab, choose Number, set Decimal Places to 0 and Currency Symbol to Dollar. |
| 4 | Click on the Validate tab. |
| 5 | Enter a range from between 1 and 10,000. |
| 6 | Click OK. |
| 7 | Select the Hand tool and test the number field with valid and invalid amounts. |

Make Fields Calculate

JavaScript

Acrobat form fields are powered by JavaScript. Let's note here that JavaScript is not Java the programming language. JavaScript is a scripting language that is embedded into HTML. Java the programming language is an object-oriented language that developers use to create applets and applications that run on a server and are transmitted to the desktop. It looks a lot like C++ and you need to be a programmer to use it.

JavaScript, on the other hand, runs only on the client and is fairly easy to learn.

Add a sum field


We will use Acrobat's built-in JavaScript editor to add the income on our 1040EZ file.

| Step | Action |
|------|---|
| 1 | Use the Form tool to make number fields in lines 1, 2 and 3 of the Income section. Name the fields Income1, Income2 and Income3. For decimal Places choose 2 and for Currency Symbol choose Dollar. |
| 2 | Using the Form tool again, marquee a box around the boxes in question 5. |
| 3 | Name the field IncomeSum.1 and make it a number field. |
| 4 | Click on the Calculate tab. |
| 5 | Select Value is the sum (+) and choose Pick. |
| 6 | Select the income fields and click Add and then Done. |
| 7 | Click OK and test the fields. |
| 8 | Save your work as 1040EZ_Work.pdf. |

Use JavaScript to create a custom field calculation

We don't have time to make the entire form interactive, so we will skip to the bottom. We will assume our tax rate is 28 percent, and use a JavaScript to calculate the amount of tax due.

| Step | Action |
|------|--|
| 1 | Use the Form tool to create a field over the boxes in Line 12 Amount you owe. |
| 2 | Name the field AmountDue. For decimal Places choose 2 and for Currency Symbol choose Dollar. |
| 3 | Click on the Calculate tab. |
| 4 | Click on Edit. |

| Step | Action |
|------|---|
| 5 | <p>Enter the text: <code>var a=this.getField("IncomeSum.1");</code> <code>event.value = a.value *.28;</code> as shown in the box below.</p>  |
| 6 | Click OK. |
| 7 | Click OK again. |
| 8 | Select the Hand tool and make sure the tax is calculating correctly. |
| 9 | Save the file and close it. |

Tip: For more information, see Help > Forms JavaScript Guide.

Add a Reset Button

It's good to have one button that clears a form.

| Step | Action |
|------|--|
| 1 | Open 1040EZ_work.pdf. |
| 2 | Select the Form tool. |
| 3 | Marquee a box in the white space of the upper right corner. |
| 4 | Name the field Reset and choose Button as type. |
| 5 | Click on Appearance and format the button border, background and text. |
| 6 | Click on Options. |
| 7 | Under Layout, choose Text over icon. |
| 8 | Enter Reset Form in the Text field. |
| 9 | Click on Actions and select Mouse Up and Add. |
| 10 | Under Type, choose Reset Form. By default, all fields are reset. |

| Step | Action |
|------|-----------------------------|
| 11 | Click Set Action. |
| 12 | Click OK and test the form. |

Submitting data

Acrobat can submit form information via E-mail, in a structured text file called Forms Data Format, or as HTML. A server-side script can parse the form data and put it into a database.

| Step | Action |
|------|---|
| 1 | Open 1040EZ.pdf, fill in some data and scroll to the bottom of the first page. |
| 2 | Select the Form tool and marquee around the For Official Use Only boxes. |
| 3 | Name the Field Submit and make the type button. |
| 4 | Change the Border and Background colors to red and the text to black. |
| 5 | Select Options and choose Text over icon layout. |
| 6 | Enter Submit in the Text field. |
| 7 | Select Actions and select Mouse Up and Add. |
| 8 | Choose Submit Form. |
| 9 | Choose Select URL. |
| 10 | Enter mailto:test@digipubcorp.com. |
| 11 | Select HTML Form under Export format. |
| 12 | Click OK. |
| 13 | Click Set Action. |
| 14 | Click OK and test the form. Note: The data will not send unless your computer is connected to the Internet. |

4 Use Web Capture

Acrobat's built-in Web Capture application is a great way to archive web sites. In addition, it creates PDF forms on the fly from html forms.

To create the PDF 2000 Conference registration form below, I simply opened up the registration url and made a PDF of secure order form. (Note: in the case of the PDF 2000 Conference, and perhaps your own company, you need special permission to get past the secure firewall.)

State/Province:

City/Postal Code:

Country:

Group name:

Group coordinator? Yes No

Special needs:

Note: Please note that we will do our utmost to meet the needs of the physically impaired, but cannot guarantee success. If there are any questions, we will contact you and see what can be arranged.

Conference Choice

- February 16 - March 15
- March 16 - June 5
- Two or more
- Six or more
- Academic
- Student
- Government

The long field names are a bit incomprehensible, but they work fine. You can move them around to other locations, or change the properties of a field in Acrobat.

Note: Remember that when you PDF login screens, you can save the login data with the form. That may or may not be a good thing!

