

# Python and web

By JJ

```
<!DOCTYPE html>
<!-- form-1.html -->
<!-- Form with a text field. -->
<html>
  <head>
    <meta charset = "utf-8">
    <title>Forms</title>
  </head>
  <body>
    <h1>Feedback Form</h1>
```

<p>Please fill out this form to help us  
improve our site.</p>

<!-- this tag starts the form, gives the -->

<!-- method of sending information and the -->

<!-- location of the form-processing script -->

<form method = "post" action = "processname.cgi">

<!-- <input type = "text"> inserts name field -->

<p><label>Name:

<input name = "name" type = "text" size = "25"  
maxlength = "30">

</label></p>

<p>

<!-- input types "submit" and "reset" insert -->

<!-- buttons for submitting and clearing the --  
>

<!-- form's contents, respectively -->

```
    <input type = "submit" value = "Submit">
    <input type = "reset" value = "Clear">
</p>
</form>
</body>
</html>
```

## Processname.cgi

- `#!C:\Python34\python.exe`
- `import cgi`
- `def htmlTop():`
- `print("""Content-type: text/html\n\n`
- `<!DOCTYPE html>`
- `<html>`

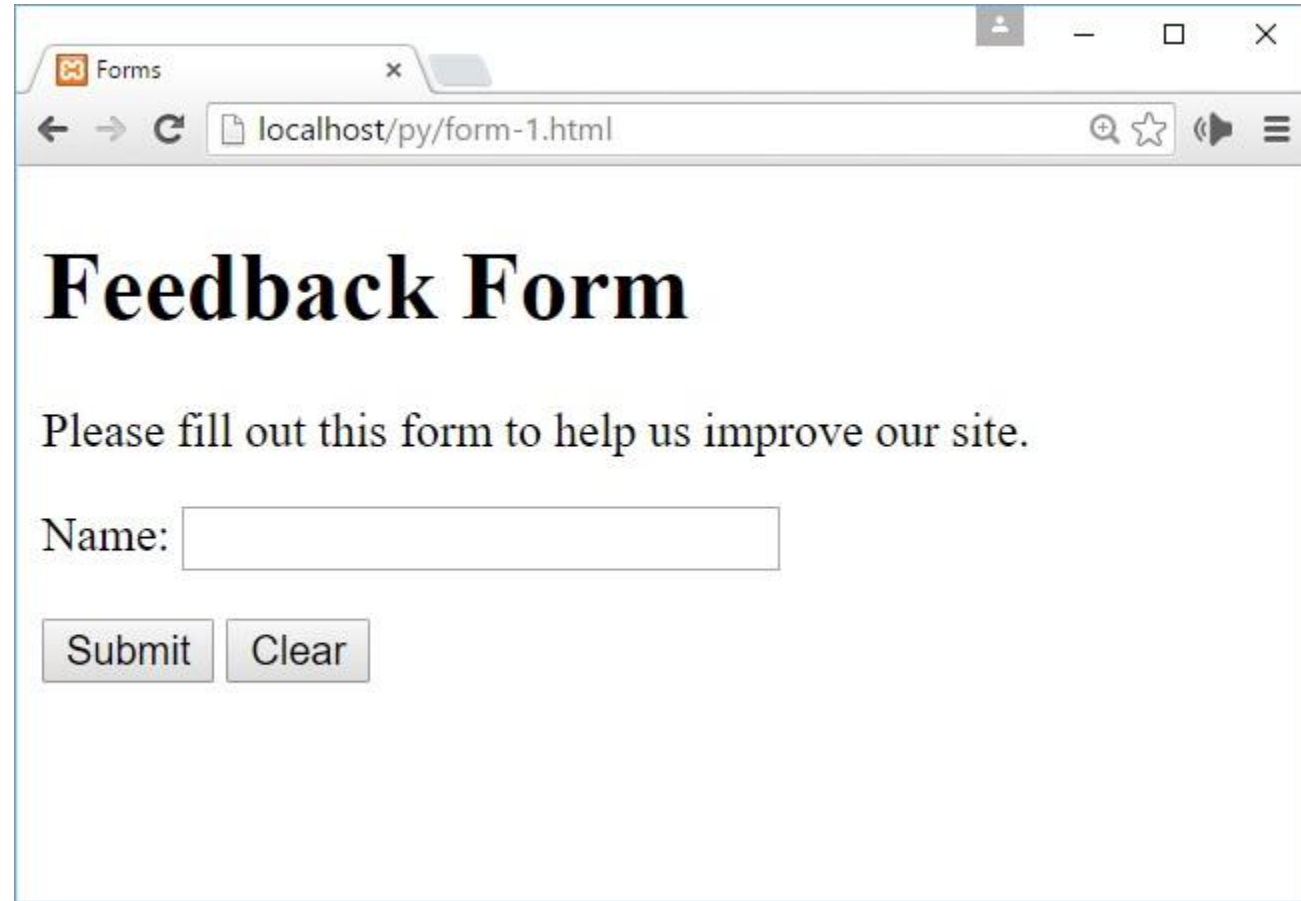
- `<head lang="en">`
- `<meta charset="utf-8"/>`
- `<title> Form 1</title>`
- `</head>`
- `<body>""")`

## Processname.cgi (cont.)

- `def htmlTail():`
- `print("""</body>`
- `</html>""")`
  
- `#main program • if __name__ == "__main__":`
- `try:`
- `htmlTop()`
- `formData = cgi.FieldStorage()`

- `guestName = formData.getvalue('name')`
- `print("Welcome to Wonder land, ",`  
`guestName)`
- `#print("Welcome to our web site,`  
`{0}".format(guestName)) • htmlTail() •`  
`except:`
- `cgi.print_exception()`

# A simple form



The image shows a web browser window with a single tab titled "Forms". The address bar displays "localhost/py/form-1.html". The page content includes a large heading "Feedback Form", a paragraph "Please fill out this form to help us improve our site.", a text input field labeled "Name:", and two buttons labeled "Submit" and "Clear".

Forms

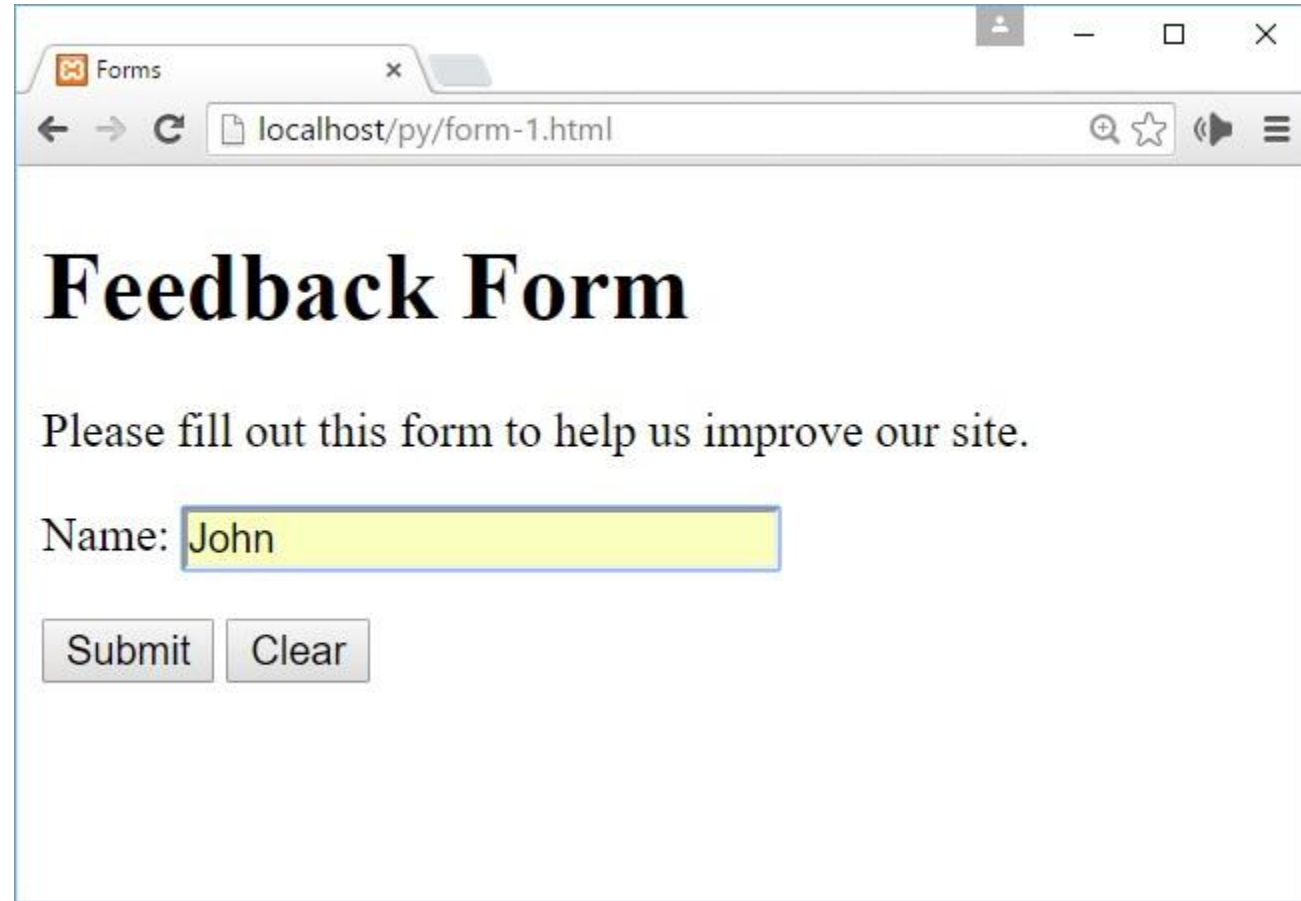
localhost/py/form-1.html

## Feedback Form

Please fill out this form to help us improve our site.

Name:

# Enter a name



A screenshot of a web browser window. The browser has a single tab titled "Forms". The address bar shows the URL "localhost/py/form-1.html". The page content includes a large heading "Feedback Form", a paragraph "Please fill out this form to help us improve our site.", a text input field labeled "Name:" containing the text "John", and two buttons labeled "Submit" and "Clear".

Forms

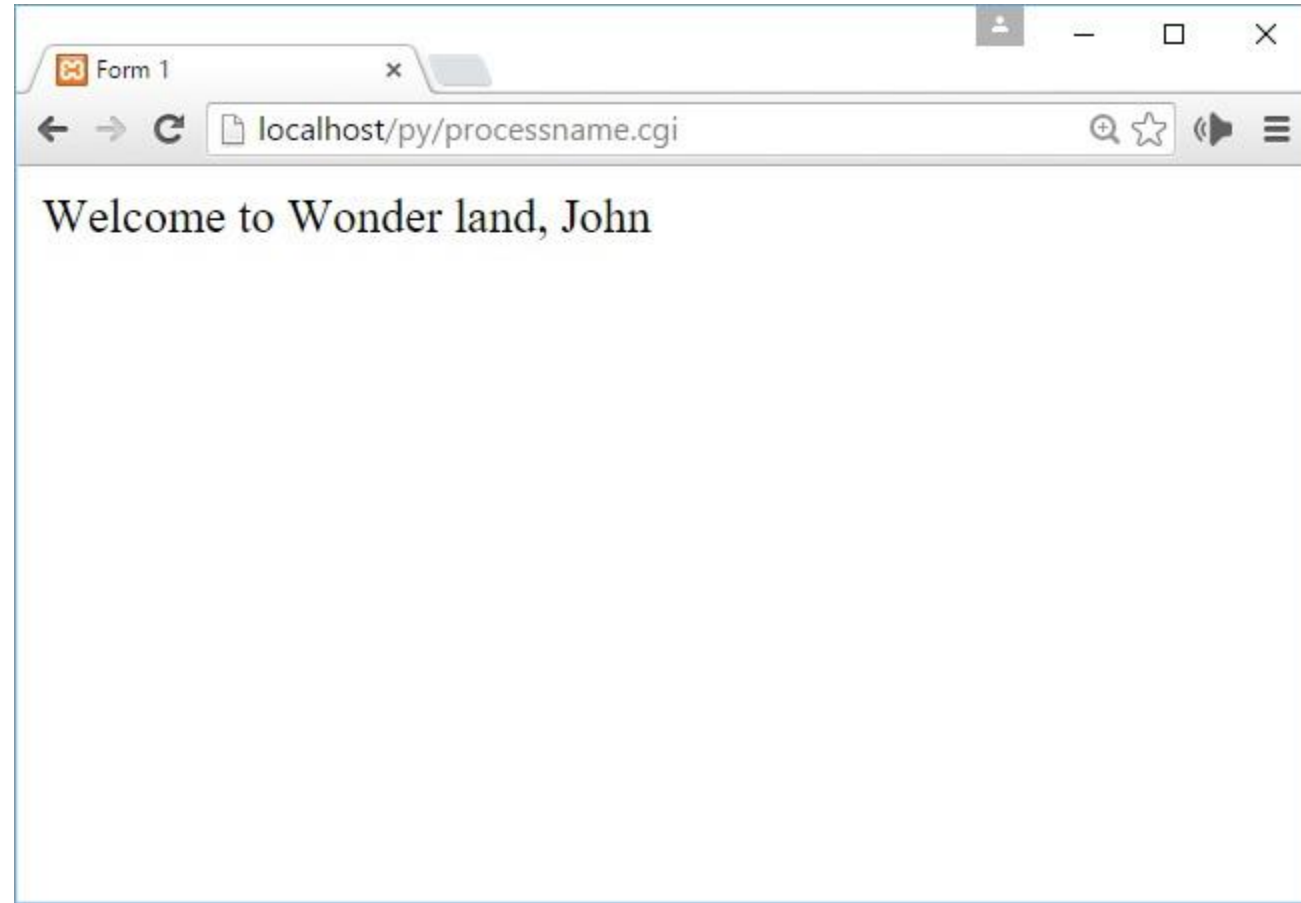
localhost/py/form-1.html

## Feedback Form

Please fill out this form to help us improve our site.

Name:

# After processed by processname.cgi





# Form-2.html

```
<!DOCTYPE html>
```

```
<!-- form-2.html -->
```

```
<!-- Form using a variety of web components. -->
```

```
<html>
```

```
  <head>
```

```
    <meta charset = "utf-8">
```

```
    <title>Feedback Form</title>
```

```
  </head>
```

```
  <body>
```

```
    <h1>Feedback Form</h1>
```

```
    <p>Please fill out this form.</p>
```

## Form-2.html (cont.)

```
<form method = "post" action = "processForm.cgi">
```

```
  <p><label>Name:
```

```
    <input name = "name" type = "text" size = "25">
```

```
  </label></p>
```

```
<!-- multiline textbox -->
```

```
<p><label>Comments:<br>
```

```
  <textarea name = "comments" rows = "5" cols = "40">Please enter  
  your comments here.</textarea> </label></p>
```

```
<p><label>E-mail Address:
```

```
  <input name = "email" type = "password" size = "25">
```

</label></p>

<p>

<strong>Things you liked:</strong><br>

<label>Reading

<input name = "thingsliked" type = "checkbox" value = "Reading"></label>

<label>Driving

<input name = "thingsliked" type = "checkbox" value = "Driving"></label>

<label>Cooking

<input name = "thingsliked" type = "checkbox" value = "Cooking"></label>

<label>Traveling

<input name = "thingsliked" type = "checkbox" value = "Traveling"></label>

<label>Shopping

<input name = "thingsliked" type = "checkbox" value = "Shopping"></label>

</p>

<p>

<strong>Your favorite Subject?:</strong><br>

<label>Finance

<input name = "subject" type = "radio"  
value = "Finance" checked></label>

<label>C++

<input name = "subject" type = "radio"  
value = "C++"></label>

<label>Python

<input name = "subject" type = "radio"  
value = "Python"></label>

<label>Math

<input name = "subject" type = "radio"  
value = "Math"></label>

<label>Other

<input name = "subject" type = "radio"  
value = "other"></label>

</p>

<p>

<label>Rate our web site:

<select name = "rating">

<option selected>Excellent</option>

<option>10</option>

<option>9</option>

<option>8</option>

<option>7</option>

<option>6</option>

<option>5</option>

<option>4</option>

<option>3</option>

<option>2</option>

<option>1</option>

<option>Awful</option>

```
</select>  
</label>  
</p>
```

## Form-2.html (cont.)

- `<p>`
- `<input type = "submit" value = "Submit">`
- `<input type = "reset" value = "Clear">`
- `</p>`
- `</form>`
- `</body>`

- `</html>`

## ProcessForm.cgi

- `#!C:\Python34\python.exe`
- `import cgi • def htmlTop():`
- `print("""Content-type: text/html\n\n`
- `<!DOCTYPE html>`
- `<html>`
- `<head lang="en">`
- `<meta charset="utf-8"/>`
- `<title> Form 1</title>`
- `</head>`
- `<body>""")`
- `def htmlTail():`

- `print("""</body>`
- `</html>""")`

## ProcessForm.cgi (cont.)

- `#main program`
- `if __name__ == "__main__":`
- `try:`
- `htmlTop()`
- `formData = cgi.FieldStorage()`
- `guestName = formData.getvalue('name')`
- `print("Welcome to Wonder land, ", guestName)`
- `comments = formData.getvalue('comments')`
- `comments = "<br />".join(comments.split("\n"))`
- `print("<br />Thank you for your comments:<br /> ", comments, "<br />")`



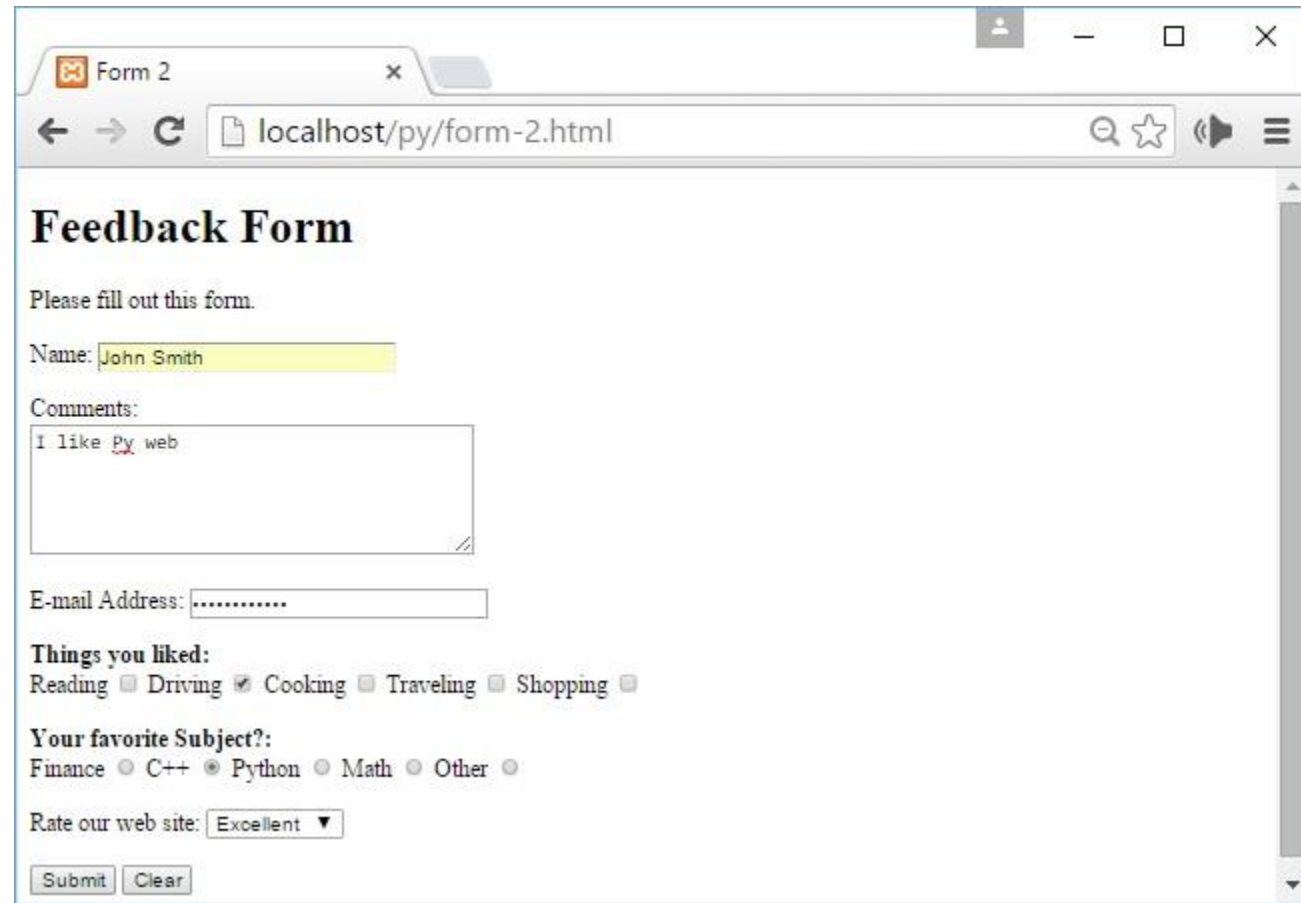
- `email = formData.getvalue('email')`
- `print("<br />Your email address is:<br /> ", email)`

## ProcessForm.cgi (cont.)

- `subject = formData.getvalue('subject')`
- `print("<br />Your favorite subject is:<br /> ", subject)`
- `thingsliked = formData.getvalue('thingsliked') • print("<br />The things you liked:<br /> ")`
- `for thing in thingsliked:`
- `print("&nbsp;", thing, end="<br />")`
- `rating = formData.getvalue('rating')`
- `print("<br />The rating you chose was:<br /> ", rating)`
- 
- `htmlTail()`

- `except:`
- `cgi.print_exception()`

# Test run of process form



Form 2 x

localhost/py/form-2.html

## Feedback Form

Please fill out this form.

Name: John Smith

Comments:  
I like Py web

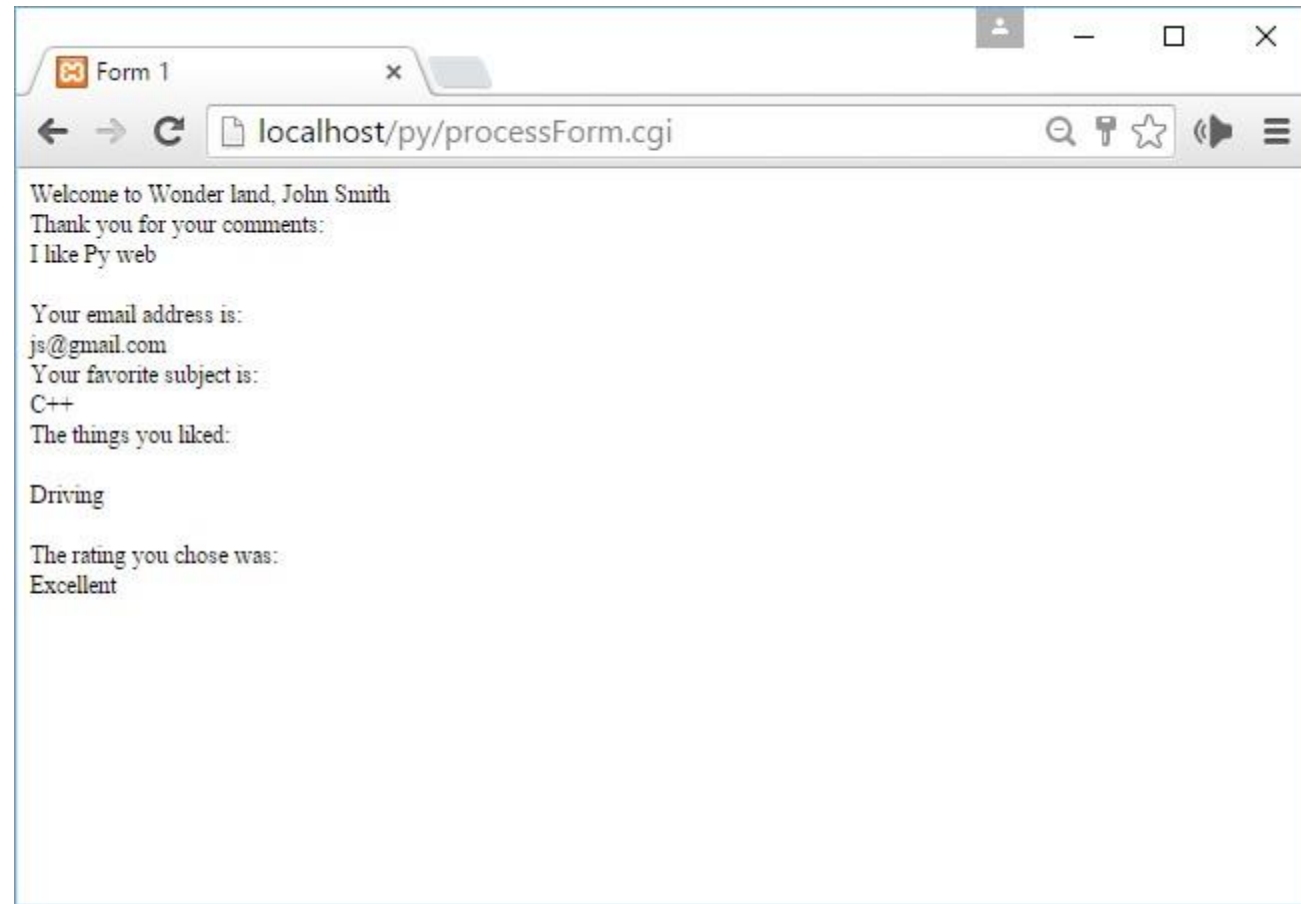
E-mail Address: .....

**Things you liked:**  
Reading ☐ Driving ☒ Cooking ☐ Traveling ☐ Shopping ☐

**Your favorite Subject?:**  
Finance ☐ C++ ☐ Python ☒ Math ☐ Other ☐

Rate our web site: Excellent ▼

Submit Clear



Using table to output posted data (same interface different script to process the form)

```
<html>
  <head>
    <meta charset = "utf-8">
    <title>Form 3</title>
  </head>

  <body>
    <h1>Feedback Form</h1>
```

<p>Please fill out this form.</p>

<form method = "post" action = "processFormTable.cgi">

# ProcessFormTable

- `#!C:\Python34\python.exe`
- `import cgi • def htmlTop():`
- `print("""Content-type: text/html\n\n`
- `<!DOCTYPE html>`
- `<html>`
- `<head lang="en">`
- `<meta charset="utf-8"/>`
- `<title> Form 1</title>`
- `</head>`
- `<body>""")`

- `def htmlTail():`
- `print("""</body>`
- `</html>""")`
- `#main program • if __name__ == "__main__":`
- `try:`
- `htmlTop()`
- `formData = cgi.FieldStorage()`
- `guestName = formData.getvalue('name')`
- `comments = formData.getvalue('comments')`
- `comments = "<br />".join(comments.split("\n"))`
- `email = formData.getvalue('email')`
- `thingsliked = formData.getvalue('thingsliked')`
- `subject = formData.getvalue('subject')`
- `rating = formData.getvalue('rating') print("<h1>Thank you ", guestName, " to`
- `visit our Wonder Land!</h1>") print("<table border='5'>") print("<tr><td>")`

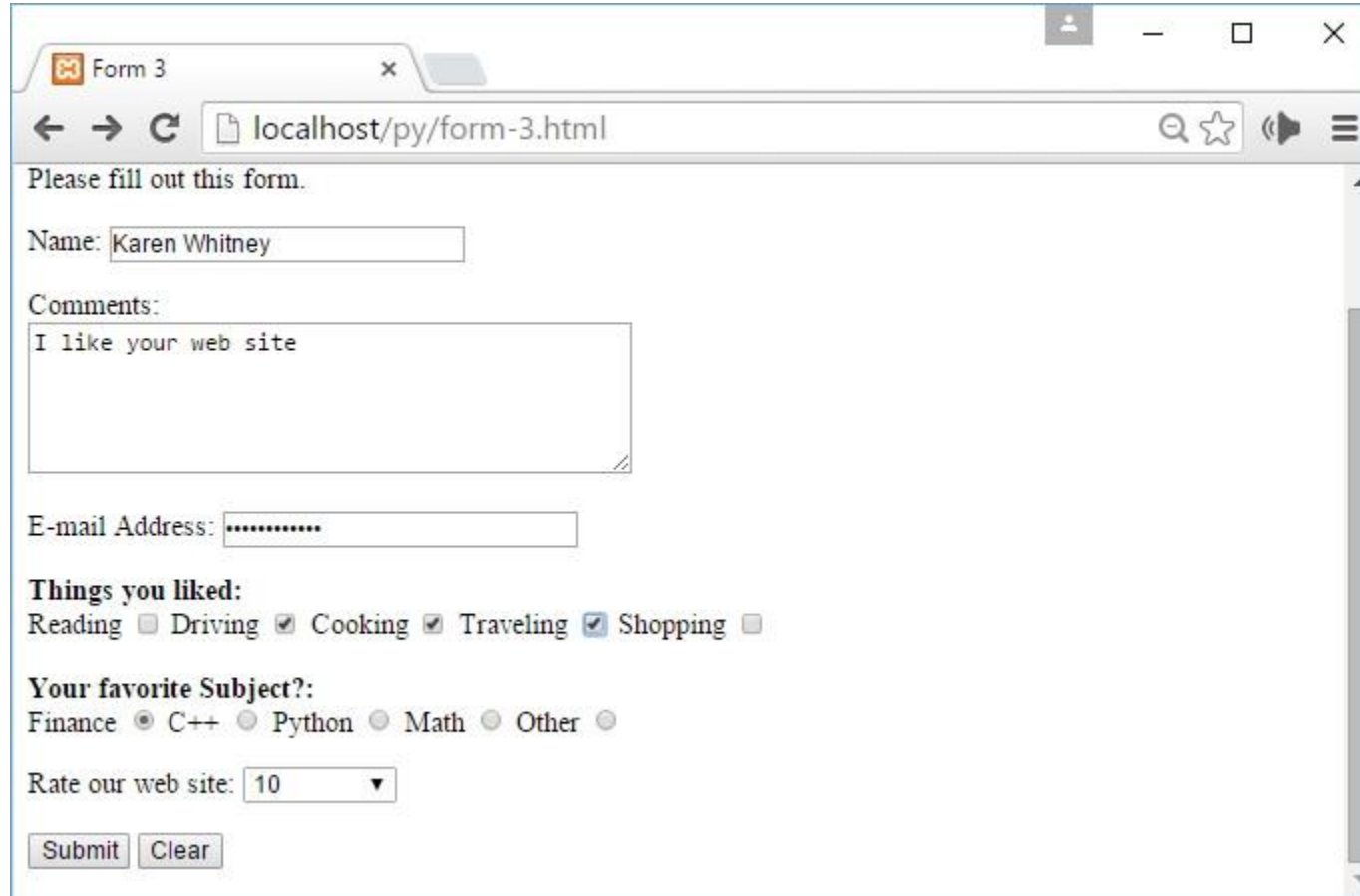
```
        print("Name") print("</td><td>") print(guestName) print("</td></tr>")
        print("<tr><td>") print("Email") print("</td><td>") print(email)
        print("</td></tr>")
print("<tr><td>")
    print("Favorite Subject")
    print("</td><td>")
    print(subject)
    print("</td></tr>")

print("<tr><td>")
print("Things liked")
print("</td><td>") for i in
range(len(thingsliked)):
    print(i+1, ":", thingsliked[i], "<br />")
print("</td></tr>")
```



```
print("<tr><td>")
    print("Comments")
    print("</td><td>")
    print(comments)
    print("</td></tr>")
print("<tr><td>")
    print("Rating")
    print("</td><td>")
    print(rating)
    print("</td></tr>")
    print("</table>")
    htmlTail()
except:
    cgi.print_exception()
```

# Test run



Form 3

localhost/py/form-3.html

Please fill out this form.

Name:

Comments:

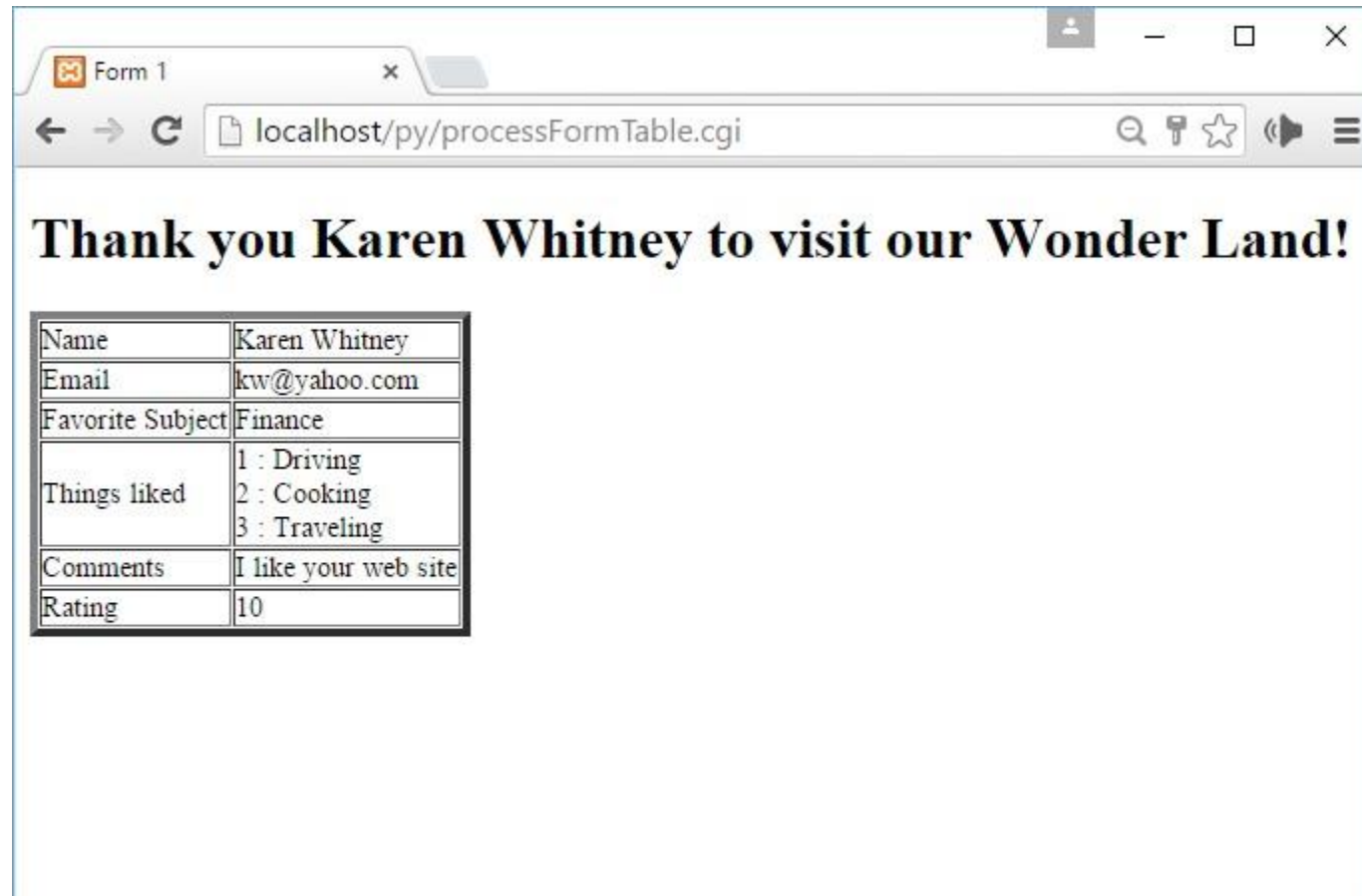
E-mail Address:

**Things you liked:**  
Reading ☐ Driving ☒ Cooking ☒ Traveling ☒ Shopping ☐

**Your favorite Subject?:**  
Finance ☐ C++ ☒ Python ☐ Math ☐ Other ☐

Rate our web site:

# The form after processed by processFormTable.cgi



**Thank you Karen Whitney to visit our Wonder Land!**

Name	Karen Whitney
Email	kw@yahoo.com
Favorite Subject	Finance
Things liked	1 : Driving 2 : Cooking 3 : Traveling
Comments	I like your web site
Rating	10

# Query MySql database

```
<!DOCTYPE html>
```

```
<!-- data-manager.html -->
```

```
<!-- query a MySQL database. -->
```

```
<html>
```

```
  <head>
```

```
    <meta charset = "utf-8">
```

```
    <title>Database Query Manager</title>
```

```
  </head>
```

```
  <body>
```

```
    <h1>Querying a MySQL database.</h1>
```

```
<form method = "post" action = "database-query.cgi">
  <p>Select a field to display:
    <!-- add a select box containing options -->
    <!-- for SELECT query -->
    <select name = "select">
      <option selected>*</option>
      <option>ID</option>
      <option>Title</option>
      <option>Category</option>
      <option>ISBN</option>
    </select></p>
    <p><input type = "submit" value = "Send Query"></p>
  </form>
</body>
```

</html>

# The connectDB function

- `#!C:\Python34\python.exe`
- `import cgi`
- `import mysql.connector`
- `#from mysql.connector`  
`import errorcode`
- `def connectDB(DB_NAME):`
- `#DB_NAME = 'Products'`

# The

- ```
cnx =  
mysql.connector.connect(us  
er='iw3htp',  
password='password',  
host='127.0.0.1',  
database=DB_NAME)  
return cnx
```

retrieveInfo function



# The

```
def retrieveInfo(conn,  
    query): cursor =  
    conn.cursor()  
    cursor.execute(query)  
    results = cursor.fetchall()  
    cursor.close() conn.close()  
    # note results is now a list  
    return results
```

# The displayResult function

```
def displayResults(which, results):  
    print("<h1>You Select =>", which,  
          "</h1>") print("<table border='5'>") if  
    (which == "*"): print("<th>ID</th>")  
    print("<th>Title</th>")  
    print("<th>Category</th>")  
    print("<th>ISBN</th>")  
    else:
```

# The

```
print("<th>" + which + "</th>")
```

# displayResult function (cont.)

```
print("<tr>") for
```

```
    book in results:
```

```
        for i in range(len(book)):
```

```
            print("<td>")
```

```
            print(book[i])
```

```
            print("</td>")
```

```
        print("</tr>")
```

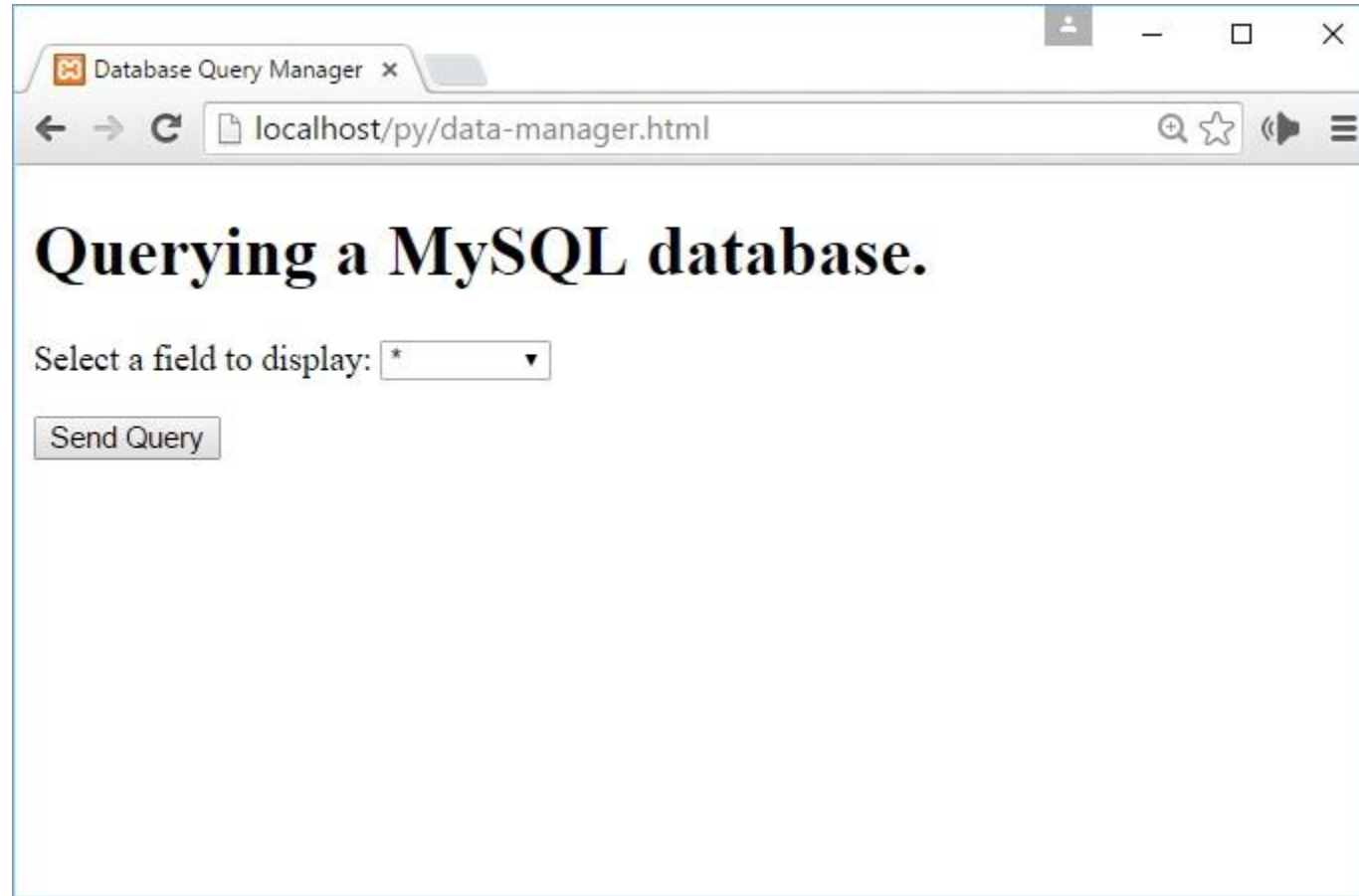
```
print("</table>")
```

# The htmlTop and htmlTail functions

```
def htmlTop():  
    print("""Content-type: text/html\n\n  
    <!DOCTYPE html>  
    <html>  
    <head lang="en">  
    <meta charset="utf-8"/>  
    <title> Form 1</title>  
    </head>  
    <body>""")  
def htmlTail():  
    print("""</body>  
    </html>""")
```

```
#main program if __name__  
== "__main__": try:  
    htmlTop() formData =  
    cgi.FieldStorage() which =  
    formData.getvalue('select')  
  
    conn = connectDB("Products") query =  
    "select "+which+" FROM tempbooks" results  
    = retrieveInfo(conn, query) displayResults  
    (which, results) htmlTail()  
except:  
    cgi.print_exception()
```

# Database manager test run



Database Query Manager x

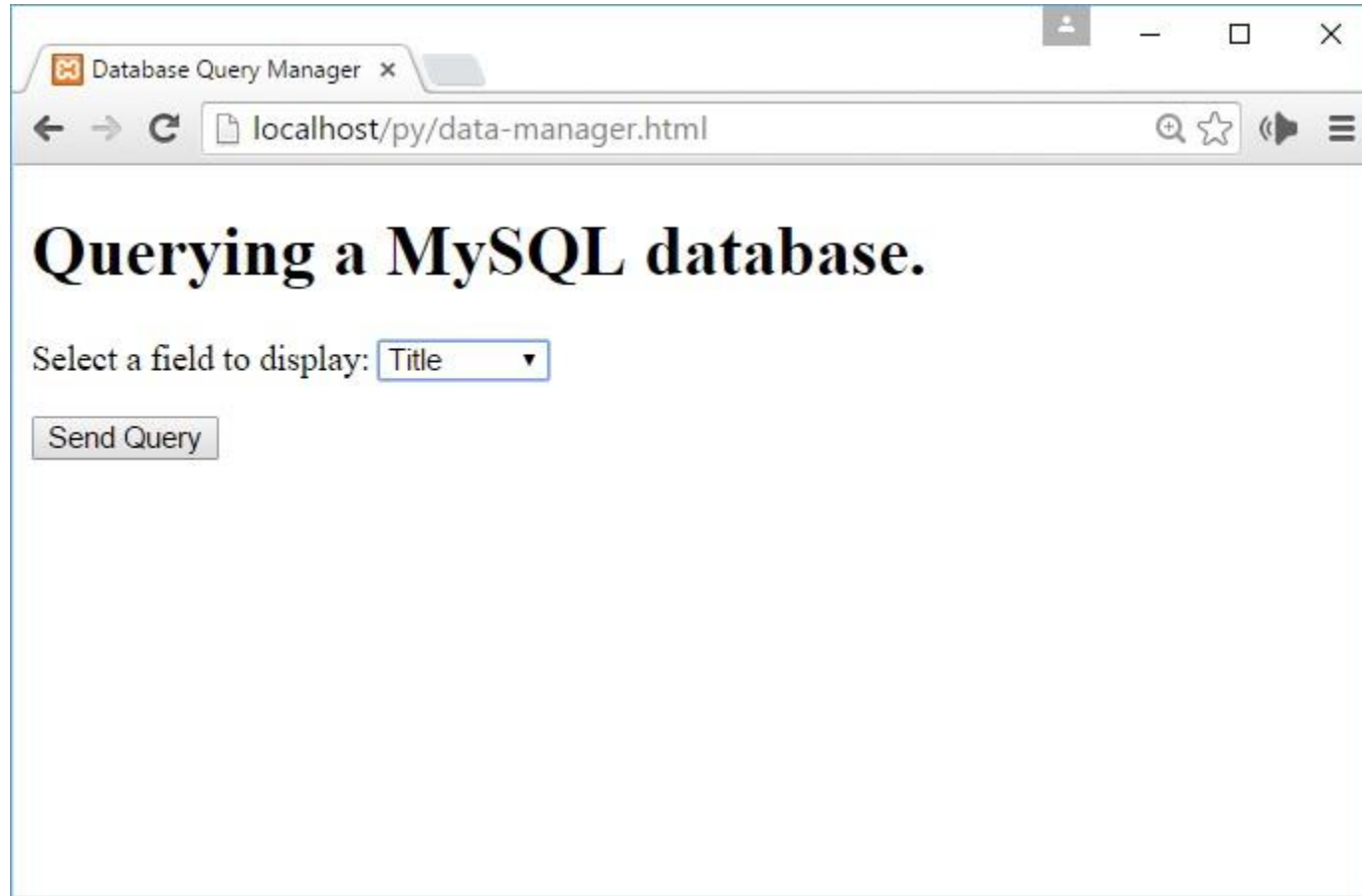
localhost/py/data-manager.html

## Querying a MySQL database.

Select a field to display: \*

Send Query

# Select title



The screenshot shows a web browser window with a single tab titled "Database Query Manager". The address bar displays "localhost/py/data-manager.html". The main content area features a heading "Querying a MySQL database." followed by a label "Select a field to display:" and a dropdown menu currently set to "Title". Below this is a "Send Query" button.

Database Query Manager x

localhost/py/data-manager.html

## Querying a MySQL database.

Select a field to display: Title ▼

Send Query



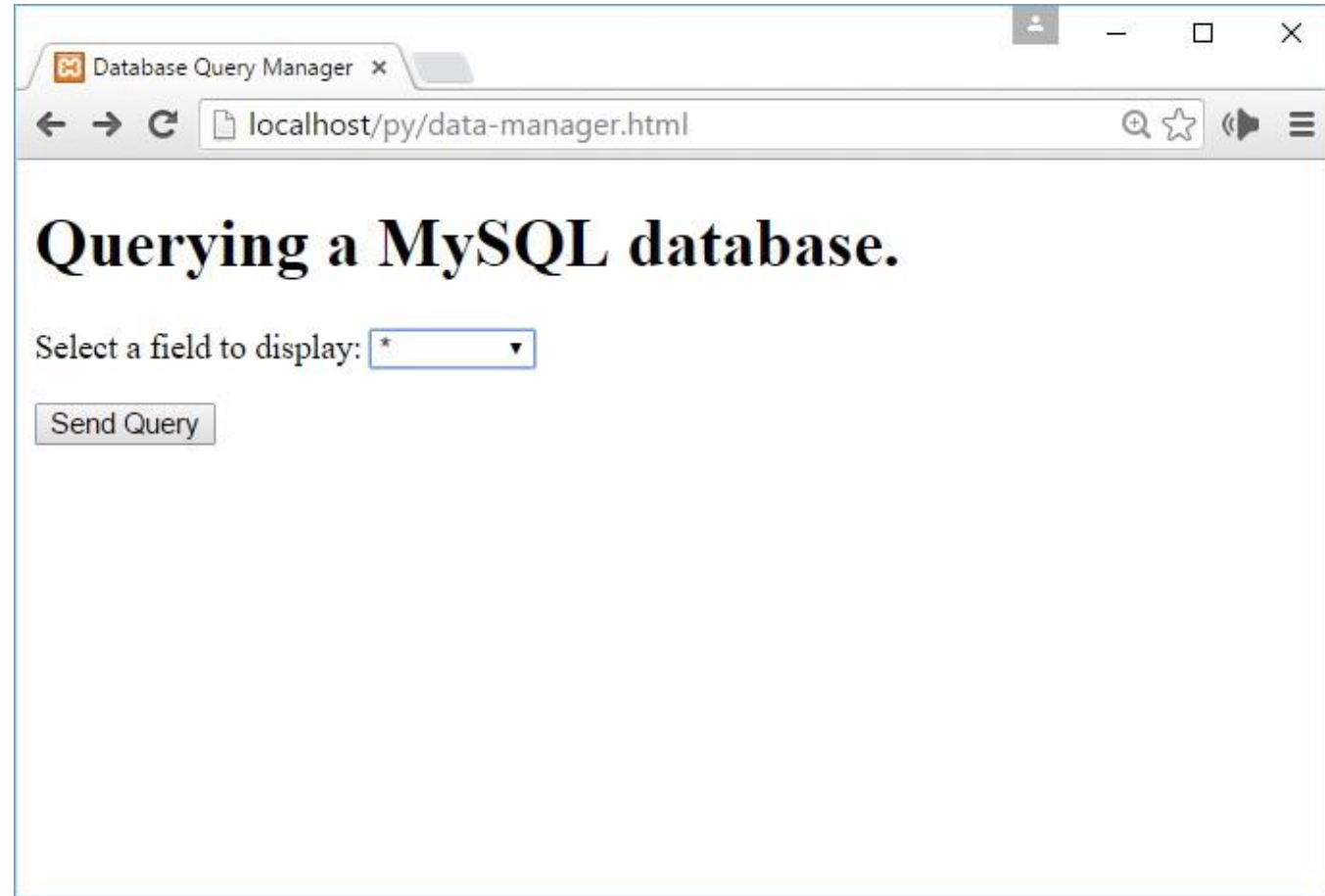
# All titles shown



The screenshot shows a web browser window with a single tab titled 'Form 1'. The address bar displays 'localhost/py/database-query.cgi'. The page content features a heading 'You Select => Title' followed by a table with 11 rows. The first row is the header 'Title', and the subsequent rows list various programming and database topics.

| Title                                    |
|------------------------------------------|
| Visual Basic 2010 How to Program         |
| Visual C# 2010 How to Program            |
| Java How to Program                      |
| C++ How to Program                       |
| C How to Program                         |
| Internet & World Wide Web How to Program |
| Operating Systems                        |
| Python Database Programming              |
| Python Database Programming              |

# Select \* mean all



Database Query Manager x

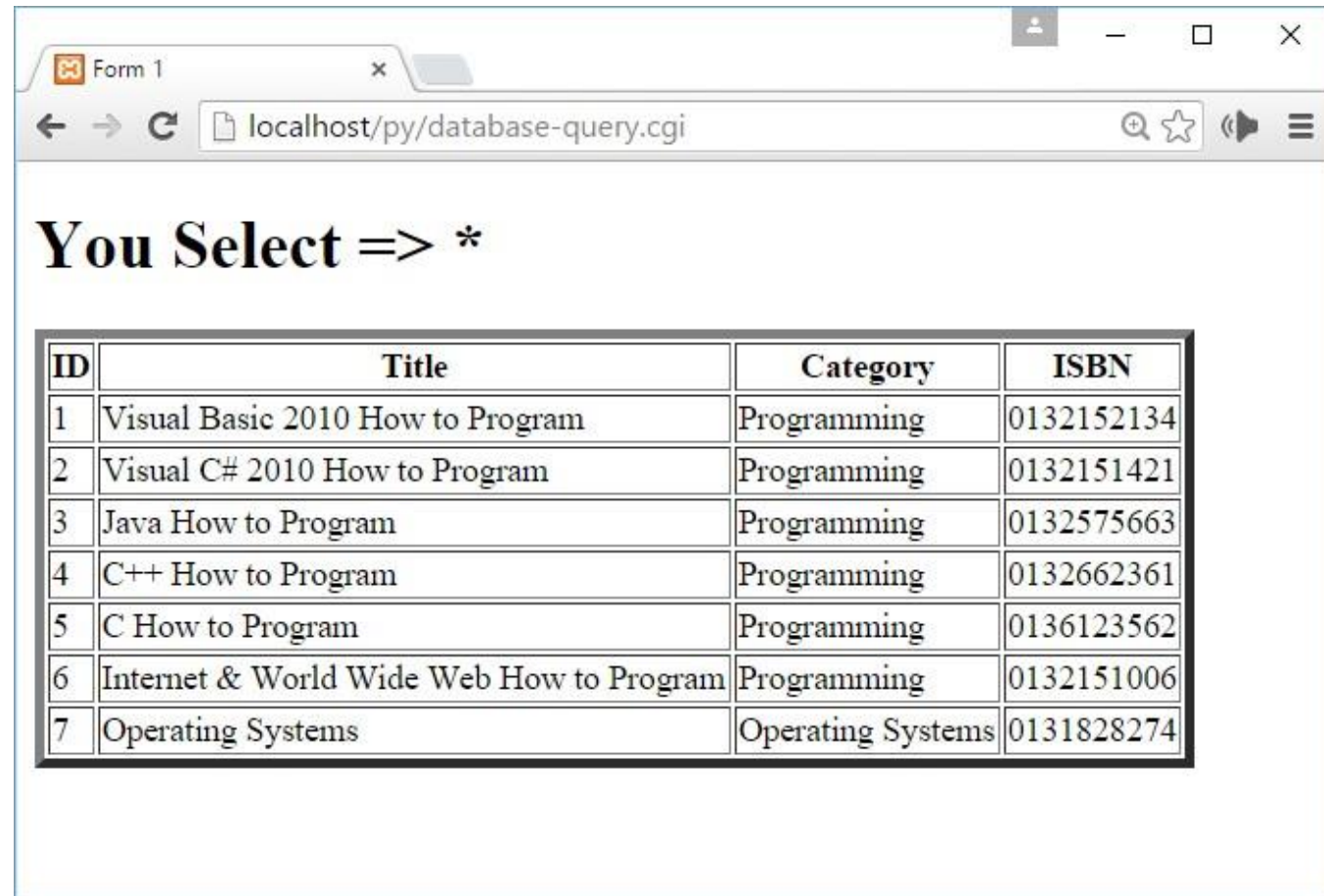
localhost/py/data-manager.html

## Querying a MySQL database.

Select a field to display: \*

Send Query

# Everything shown



The screenshot shows a web browser window with a single tab titled 'Form 1'. The address bar displays 'localhost/py/database-query.cgi'. The page content features the text 'You Select => \*' followed by a table with 4 columns: ID, Title, Category, and ISBN. The table contains 7 rows of data, all with 'Programming' as the category except for the last row which is 'Operating Systems'.

| ID | Title                                    | Category          | ISBN       |
|----|------------------------------------------|-------------------|------------|
| 1  | Visual Basic 2010 How to Program         | Programming       | 0132152134 |
| 2  | Visual C# 2010 How to Program            | Programming       | 0132151421 |
| 3  | Java How to Program                      | Programming       | 0132575663 |
| 4  | C++ How to Program                       | Programming       | 0132662361 |
| 5  | C How to Program                         | Programming       | 0136123562 |
| 6  | Internet & World Wide Web How to Program | Programming       | 0132151006 |
| 7  | Operating Systems                        | Operating Systems | 0131828274 |