

Exercises: HTTP Protocol

Problems for exercises and homework for the [“Java Web Development Basics” course @ SoftUni](#).

In this homework, you are supposed to **write java programs** that are run by a web server. You will learn how to create **HTML** content and how to use basic **HTTP GET** and **POST** methods. Moreover, you will have to store data in different data structures and write simple algorithms.

Before you begin make sure you have followed the tutorial “” on how to configure Apache Web Server.

1. By the Cake: add_cake.cgi

Extend your web site. Create a CGI script called **add_cake.cgi**. Write another program which will be responsible for adding cakes functionality. It should have a simple form to add cakes. **Create a Cake class**. Each cake should have name and price. When you click the submit button a new cake should be created and saved in a list. The newly created cake should be printed below the form. **“name”** and **“price”** are the parameters of the request.

In order to work create a functionality which processes POST requests.

Examples



localhost:180/cgi-bin/WebFundamentals/ByTheCake/add_cake.cgi

Name: Price:

name: Chocolate Cake

price: 10.99

Hint

Don't forget to add CGI parameters during invocation of your java program.

-Dcgi.query_string=\$QUERY_STRING

-Dcgi.request_method=\$REQUEST_METHOD

2. By the Cake: Write data

Extend your web site. The submitted data should be appended on a new row split by comma in a file called **database.csv**. Add a link to go back to your main page.

[Back to home](#)

Name: Price:

name: Chocolate Cake

price: 10.99

3. By the Cake: browse_cakes.cgi

Extend your web site. Create a new program that should print a single form **with GET method**. See the example below. It will be used to search cakes by name. Cakes should be searched from **database.csv** and printed below the form.

Add a functionality to go back to your main page.

You will need a third CGI script called **browse_cakes.cgi** to invoke your program.

Examples

database.csv

Chocolate cake,10.99

Banana cake,8.59

[Back to home](#)

Name: Chocolate cake Price: 10.99

Name: Banana cake Price: 8.59

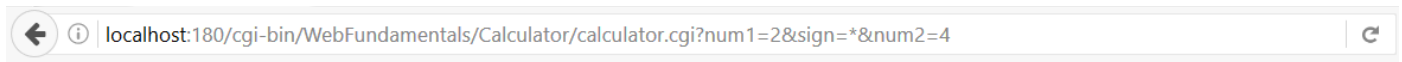
4. Calculator

Write a java program that prints a form with three inputs on the browser followed by single button. Input 1 and input 3 should receive numbers. Input 2 should receive a mathematical sign. When you press the button the result of the equation should appear. See the example

below. There are four possible operations: add, subtract, multiply and divide (+, -, *, /). If none of the above is entered print an error “Invalid Sign”.

Use GET method.

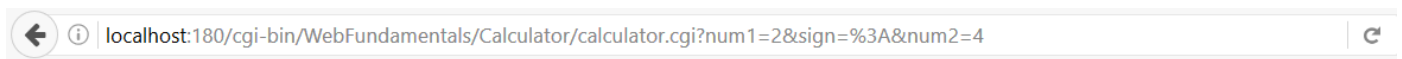
Examples



2	*	4	=?
---	---	---	----

Calculate

Result: 8



2	:	4	=?
---	---	---	----

Calculate

Invalid Sign

5. Log in form

Write a java program that prints a form with two inputs on the browser followed by a single button. Inputs should receive username and password. When you click the button a message saying “Hi {username}, your password is {password}” should appear.

Use POST method.

Examples



Username:	<input type="text" value="root"/>
Password:	<input type="password" value="1234"/>

Login

Hi root, your password is 1234

6. Send Email

Write a Java program that prints a form with 2 text fields for **username** and **password**. A user must be able to log in only if the **provided username** is **suAdmin** and the **password** is **aDmInPw17**. When is logged in he/she should be able to **send email via provided form** where recipient email, subject and body of the email must be provided. Before sending an email validate the provided data:

- **To** - must be a **valid email** (search in the internet for the requirements of an email address)
- **Subject** - must be no longer than **100 symbols**
- **Message** - must be able to send **all Unicode characters**

The email messages must be sent from **your own email address**.

Example

Login
Username:
Password:

Invalid username or password!

Login
Username:
Password:

Hello suAdmin!
To:
Subject:
Message:

Just a simple test email!.
Очаквам отговор от теб, ако можеш да прочетеш този текст :)

7. Greetings

Write a program that collects some data from the user and finally prints a greeting message. Check the examples below.

Example

Please fulfill the required items

First Name:



Please fulfill the required items

Last Name:



Please fulfill the required items

Age:



Hello Harry Potter at age 37!

8. Survey

Write a Java program that creates a **survey for receiving feedback from users for a given product**. Look at the example to check what fields the feedback form should have and how they should be styled. In the **Status** field the possible options are:

- Student
- Part-time Employee
- Full-time Employee
- Unemployed
- Do not want to answer

Make **appropriate validations** where it is necessary.

When the form is submitted **store each submission** in a file called **survey-results.csv**

Example

Survey

First Name

Last Name

Birthdate



Gender

- ☒ Male
☐ Female
☐ Do not want to answer

Status



Recommendations

Please tell us what are your recommendations for us and how to improve our product.

You own: ☐ Laptop ☐ Smart Phone ☐ Mobile Phone ☐ Car ☐ Bike

Reset all fields

Send Survey