

IS113 - Web Application Development

Week 4

Sections G4/G5

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Agenda

- Recap on Weeks 2/3 concepts
- PHP Form Processing
 - \$_GET, \$_POST
 - Retrieving form input
 - Outputting HTML as HTTP response
- Hands-On (DIY)

Make Up Classes (G4, G5)

- Put it in your calendar!

Session	Original Date	Make-up Date	Venue
5	Fri, Feb 12	Fri, Feb 19 , <i>same lesson time</i>	SIS SR 3.1
6	Fri, Feb 19	Sat, Feb 20 , <i>same lesson time</i>	SIS SR 3.1
12	Fri, Apr 2	Sat, Apr 3 , <i>same lesson time</i>	SIS SR 3.1



謹賀新年

새해 복(福)
많이 받으세요



Before we start...

- Open **Slack** app
 - Go to <https://is113-oppa.slack.com/>
- In a new tab, go to **w3schools.com** & leave it open
 - <https://www.w3schools.com/>

Go to your **webroot**

- Go to eLearn -> Content -> Session 4 -> **week4.zip**
- Unzip **week4.zip** such that you have the following directory structure locally:

```
webroot -  
|-- is113  
|   |-- week4  
|       |-- nba  
|           |-- index.html  
|           |-- send.php  
|           |-- images  
|       |-- corona  
|           |-- index.html  
|           |-- check.php  
|           |-- images
```

Exercise 1

NBA

<webroot>/is113/week4/nba/index.html

Who is your basketball legend?	Michael Jordan ▼
Message to your legend:	<input type="text"/>
Select one lucky number:	<input type="text"/>
Select one color:	<input type="radio"/> Red <input type="radio"/> Green <input type="radio"/> Blue
Select gifts to send:	<input type="checkbox"/> Perfume <input type="checkbox"/> Book <input type="checkbox"/> Love
<input type="button" value="Send Message to My NBA Legend"/>	


■ Complete **index.html** such that:

- All form input fields are encased inside a **TABLE** (see above)
 - **FORM** must submit to **send.php** via **POST** method
- **Who is your basketball legend?**
 - **Drop-down menu** of 3 NBA player names
- **Message to your legend:** "Text" input field of size 40
- **Select one lucky number:** "Text" input field
- **Select one color:** "Radio" input field
- **Select gifts to send:** "Checkbox" input field
- **Submit button** (see above for value)

Michael Jordan
Kobe Bryant
Shaquille O'Neal

<webroot>/is113/week4/nba/send.php


- Complete **send.php** such that it retrieves all form input values & displays as follows:

index.html	send.php
<p>Who is your basketball legend? Michael Jordan</p> <p>Message to your legend: You are my brother</p> <p>Select one lucky number: 2</p> <p>Select one color:</p> <p><input checked="" type="radio"/> Red</p> <p><input type="radio"/> Green</p> <p><input type="radio"/> Blue</p> <p>Select gifts to send:</p> <p><input checked="" type="checkbox"/> Perfume</p> <p><input checked="" type="checkbox"/> Book</p> <p><input type="checkbox"/> Love</p>	<p>Your Message to Michael Jordan</p> <p><i>I believe I can fly</i></p>  <p>Photos are in images folder</p> <p>Message to your legend repeats "lucky number" of times using font size 4 (Un-ordered List)</p> <ul style="list-style-type: none"> You are my brother You are my brother <p>1. Perfume</p> <p>2. Book</p>

Ordered List
of
Selected gifts


<webroot>/is113/week4/nba/send.php

More example input & output

index.html	send.php										
<table border="1"> <tr> <td>Who is your basketball legend?</td> <td>Kobe Bryant ▼</td> </tr> <tr> <td>Message to your legend:</td> <td>Forever a Lakers man</td> </tr> <tr> <td>Select one lucky number:</td> <td>3</td> </tr> <tr> <td>Select one color:</td> <td> <input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue </td> </tr> <tr> <td>Select gifts to send:</td> <td> <input type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input checked="" type="checkbox"/> Love </td> </tr> </table>	Who is your basketball legend?	Kobe Bryant ▼	Message to your legend:	Forever a Lakers man	Select one lucky number:	3	Select one color:	<input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue	Select gifts to send:	<input type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input checked="" type="checkbox"/> Love	<h2>Your Message to Kobe Bryant</h2> <p><i>Rest In Peace</i></p>  <ul style="list-style-type: none"> • Forever a Lakers man • Forever a Lakers man • Forever a Lakers man <ol style="list-style-type: none"> 1. Book 2. Love
Who is your basketball legend?	Kobe Bryant ▼										
Message to your legend:	Forever a Lakers man										
Select one lucky number:	3										
Select one color:	<input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue										
Select gifts to send:	<input type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input checked="" type="checkbox"/> Love										

<webroot>/is113/week4/nba/send.php

■ More example input & output

index.html	send.php										
<table border="1"> <tr> <td>Who is your basketball legend?</td> <td>Shaquille O'Neal ▼</td> </tr> <tr> <td>Message to your legend:</td> <td>Nobody Messes With Me</td> </tr> <tr> <td>Select one lucky number:</td> <td>5</td> </tr> <tr> <td>Select one color:</td> <td> <input type="radio"/> Red <input type="radio"/> Green <input checked="" type="radio"/> Blue </td> </tr> <tr> <td>Select gifts to send:</td> <td> <input type="checkbox"/> Perfume <input type="checkbox"/> Book <input checked="" type="checkbox"/> Love </td> </tr> </table>	Who is your basketball legend?	Shaquille O'Neal ▼	Message to your legend:	Nobody Messes With Me	Select one lucky number:	5	Select one color:	<input type="radio"/> Red <input type="radio"/> Green <input checked="" type="radio"/> Blue	Select gifts to send:	<input type="checkbox"/> Perfume <input type="checkbox"/> Book <input checked="" type="checkbox"/> Love	<p>Your Message to Shaquille O'Neal'</p> <p><i>Are you THE Kazaam?</i></p>  <ul style="list-style-type: none"> • Nobody Messes With Me • Nobody Messes With Me • Nobody Messes With Me • Nobody Messes With Me • Nobody Messes With Me <p>1. Love</p>
Who is your basketball legend?	Shaquille O'Neal ▼										
Message to your legend:	Nobody Messes With Me										
Select one lucky number:	5										
Select one color:	<input type="radio"/> Red <input type="radio"/> Green <input checked="" type="radio"/> Blue										
Select gifts to send:	<input type="checkbox"/> Perfume <input type="checkbox"/> Book <input checked="" type="checkbox"/> Love										

- We (developers) cannot control what the **user** inputs in our forms. We must ensure that our back-end PHP code does not break!
- We need to think about different user input scenarios & make the PHP code **error-proof**. We wish to perform **back-end form validation**.
 - *E.g. Client-side form validation is quite possible by using JavaScript (you will learn this in WAD2).*
- **send.php** must check for the following:
 - 1) 'Message to your legend' cannot be empty.
 - 2) 'Select one lucky number' cannot be empty.
 - 3) 'Select one color': the user MUST select **ONE OPTION**
 - 4) 'Select gifts to send': the user can select as many as he wants
 - He can also choose NOT to send anything

<webroot>/is113/week4/nba/send.php

Thinking
Point #1

■ Example input and output: TEXT INPUT

index.html	send.php
<p>Who is your basketball legend? Michael Jordan ▾</p> <p>Message to your legend: <input type="text"/></p> <p>Select one lucky number: 3</p> <p>Select one color: <input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue</p> <p>Select gifts to send: <input checked="" type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input type="checkbox"/> Love</p>	<ul style="list-style-type: none">• Message is empty <pre>\$str = 'baba'; if (\$str == '') echo 'Empty string';</pre> <p>Ordered List of error messages</p>
<p>Who is your basketball legend? Michael Jordan ▾</p> <p>Message to your legend: You are my brother</p> <p>Select one lucky number: <input type="text"/></p> <p>Select one color: <input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue</p> <p>Select gifts to send: <input checked="" type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input type="checkbox"/> Love</p>	<ul style="list-style-type: none">• Lucky number is empty <pre>\$str = ' baba '; if (trim(\$str) == '') echo 'Empty string';</pre> <p>Ordered List of error messages</p>
<p>Who is your basketball legend? Michael Jordan ▾</p> <p>Message to your legend: <input type="text"/></p> <p>Select one lucky number: <input type="text"/></p> <p>Select one color: <input type="radio"/> Red <input checked="" type="radio"/> Green <input type="radio"/> Blue</p> <p>Select gifts to send: <input checked="" type="checkbox"/> Perfume <input checked="" type="checkbox"/> Book <input type="checkbox"/> Love</p>	<ul style="list-style-type: none">• Message is empty• Lucky number is empty <p>Ordered List of error messages</p>

■ What about the **radio button** input?

index.html	send.php → <code>var_dump(\$_POST)</code>
<div><div>Who is your basketball legend?<div>Michael Jordan</div></div><div>Message to your legend:</div><div>Select one lucky number:</div><div>Select one color:<div><div><input type="radio"/> Red</div><div><input type="radio"/> Green</div><div><input type="radio"/> Blue</div></div></div></div>	<pre>array (size=3) 'player' => string 'michael' (length=7) 'message' => string '' (length=0) 'number' => string '' (length=0)</pre>

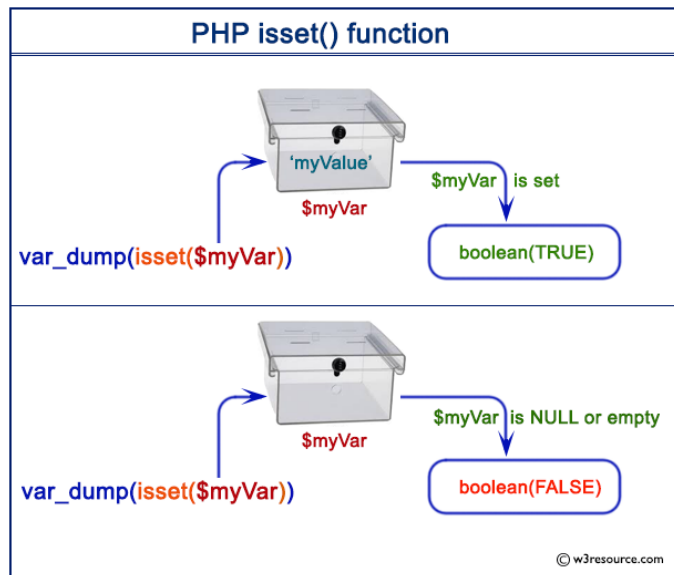
- `var_dump($_POST)` output shows that `$_POST` associative array **DOES NOT HAVE** the key `'color'` **AT ALL** !!! If the **user** does NOT select any **radio button** option, `$_POST` or `$_GET` will NOT have that **form input field name** (as the key) at all.

■ What about the **checkbox** input?

index.html	send.php → <code>var_dump(\$_POST)</code>
<div><div>Who is your basketball legend?<div>Michael Jordan</div></div><div>Message to your legend:<div>You are my brother</div></div><div>Select one lucky number:<div>7</div></div><div>Select one color:<div><div><input type="radio"/> Red</div><div><input checked="" type="radio"/> Green</div><div><input type="radio"/> Blue</div></div></div><div>Select gifts to send:<div><div><input type="checkbox"/> Perfume</div><div><input type="checkbox"/> Book</div><div><input type="checkbox"/> Love</div></div></div></div>	<pre>array (size=4) 'player' => string 'michael' (length=7) 'message' => string 'You are my brother' (length=18) 'number' => string '7' (length=1) 'color' => string 'green' (length=5)</pre>

- Similarly, `$_POST` associative array **DOES NOT HAVE** the key `'gifts'` **AT ALL**.

- For **radio button input** and **checkbox input**:
- We can use **isset()** PHP function to check if the user made a selection.
- `isset()` function returns Boolean TRUE or Boolean FALSE
 - TRUE if the variable is set
 - FALSE otherwise



```
$fruits = [ 'apple' => 'sweet', 'orange' => 'sour' ];

if( isset($fruits['apple']) )
    echo "Associative Array has apple";
else
    echo "Associative Array dun have apple";
```

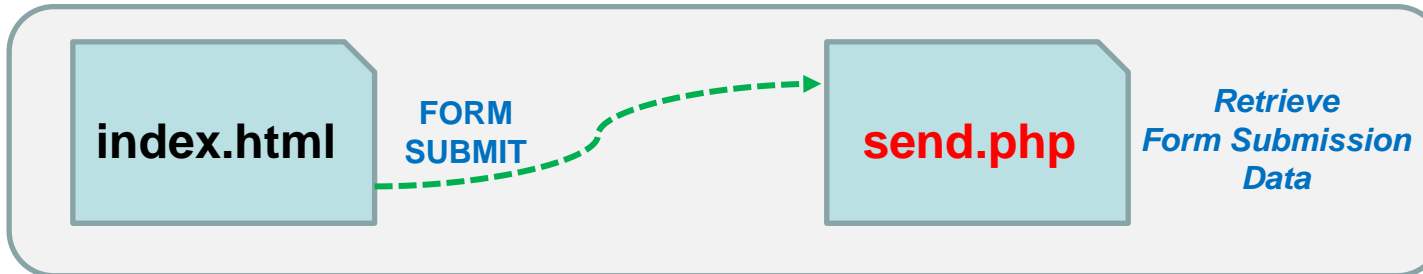
What will the above PHP code output?

Since the **key** 'apple' exists in the Associative Array, **isset()** will return Boolean TRUE.

How do you think you can apply this to **form submission** scenario?

<webroot>/is113/week4/nba/send.php

Thinking
Point #3



**“Expected”
User Behavior**

- The above depicts the **expected user behavior**. The user fills out the form in **index.html**, clicks **SUBMIT** button, and he is taken to **send.php**.
- In your **web browser**, type and visit: **http://localhost/is113/week4/nba/send.php**

! Notice: Undefined index: player in C:\wamp64\www\is113\week4_me\nba2\send.php on line 5				
Call Stack				
#	Time	Memory	Function	Location
1	0.0014	404816	{main}()	...\send.php:0

- **Do you see similar error messages** in your web browser window?
 - **send.php** is trying to retrieve a form input by the name of **player** **AND** it is NOT able to find it. For example, **\$_POST['player']** will ERROR OUT because **\$_POST** associative array **DOES NOT HAVE** an item with the key **player**.
- Suggested best practice:
 - Do expect that ALL **PHP pages** can be **directly accessed without** form submission.
 - In back-end **PHP code**, ALWAYS perform a check to see if the **form input EXISTS BEFORE** attempting to **retrieve it**.

```
// Check if there's something called 'poo'
if ( isset($_POST['poo']) )
    echo '<h1>' . $_POST['poo'] . '<h1>';
else
    echo 'Dun have poo, cannot retrieve';
```


Exercise 2

Corona Virus

Corona Virus Survey

In the last 14 days I have travelled to/from:	<div>China</div> <div>Korea</div> <div>Taiwan</div>
I am a:	<input checked="" type="radio"/> Girl <input type="radio"/> Boy
I am having these symptoms:	<input type="checkbox"/> Fever <input type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath
<input type="button" value="OMG Am I Having Corona Virus?"/>	

- Complete **index.html** such that:
 - All form input fields are encased inside a **TABLE** (see above)
 - **FORM** must submit to **check.php** via **POST** method
 - **In the last 14 days... travelled...**
 - **Drop-down menu** of 3 country choices (NOTE: **multiselect dropdown**)
 - **Select gender:** "Radio" input field (NOTE: "girl" is selected by default)
 - **Select symptoms:** "Checkbox" input field
 - **Submit button** (see above for value)

- *(The following is a hypothetical scenario for the purposes of doing this PHP exercise)*
- If the user travelled to **ANY** of the 3 countries below, he/she will be quarantined:
 - China
 - Korea
 - Taiwan
- If the user exhibits **ALL** of the 3 symptoms below, he/she will die:
 - Fever
 - Cough
 - Shortness of Breath

<webroot>/is113/week4/corona/check.php

- Complete **check.php** such that it retrieves all form input values & displays as follows (there are multiple use cases – so look through further slides)

index.html	check.php						
<table border="1"> <tr> <td>In the last 14 days I have travelled to/from:</td> <td> <input type="text" value="China"/> <input type="text" value="Korea"/> <input type="text" value="Taiwan"/> </td> </tr> <tr> <td>I am a:</td> <td> <input checked="" type="radio"/> Girl <input type="radio"/> Boy </td> </tr> <tr> <td>I am having these symptoms:</td> <td> <input checked="" type="checkbox"/> Fever <input checked="" type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath </td> </tr> </table> <p>Travelling to any of the 3 countries:</p> <p>China Korea Taiwan</p> <p>Will result in the user being quarantined</p> <p>Display the visited countries as an ordered list</p>	In the last 14 days I have travelled to/from:	<input type="text" value="China"/> <input type="text" value="Korea"/> <input type="text" value="Taiwan"/>	I am a:	<input checked="" type="radio"/> Girl <input type="radio"/> Boy	I am having these symptoms:	<input checked="" type="checkbox"/> Fever <input checked="" type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath	<p>Hey, girl!!!</p> <hr/> <p>You will be quarantined because You travelled to/from:</p> <ul style="list-style-type: none"> • Korea • Taiwan <hr/> <p>You are having these symptoms:</p> <ul style="list-style-type: none"> • fever • cough <p>Have Symptoms - Not Gonna Die Yet</p>
In the last 14 days I have travelled to/from:	<input type="text" value="China"/> <input type="text" value="Korea"/> <input type="text" value="Taiwan"/>						
I am a:	<input checked="" type="radio"/> Girl <input type="radio"/> Boy						
I am having these symptoms:	<input checked="" type="checkbox"/> Fever <input checked="" type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath						

index.html

In the last 14 days I have travelled to/from:	<div>China</div> <div>Korea</div> <div>Taiwan</div>
I am a:	<input checked="" type="radio"/> Girl <input type="radio"/> Boy
I am having these symptoms:	<input checked="" type="checkbox"/> Fever <input checked="" type="checkbox"/> Cough <input checked="" type="checkbox"/> Shortness of Breath
<input type="button" value="OMG Am I Having Corona Virus?"/>	

Display all selected **symptoms**

As an **un-ordered list**

If the user indicates ALL 3 symptoms:
Fever, cough, shortness of breath

Then, display
images/corona.jpg image

check.php

Hey, girl!!!

You will be quarantined because
You travelled to/from:

- Korea
- Taiwan

You are having these symptoms:

- fever
- cough
- breath



index.html		check.php
In the last 14 days I have travelled to/from:	<div>China</div> <div>Korea</div> <div>Taiwan</div>	<h2>Hey, girl!!!</h2> <hr/>
I am a:	<input checked="" type="radio"/> Girl <input type="radio"/> Boy	<h2>You will be quarantined because You travelled to/from:</h2>
I am having these symptoms:	<input type="checkbox"/> Fever <input type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath	<ul style="list-style-type: none">• China• Korea <hr/>
<p>If the user didn't indicate any symptoms</p> <p>Display:</p> <p>No Symptoms – You Are Okay</p>		<h2>No Symptoms - You Are Okay</h2>

index.html

In the last 14 days I have travelled to/from:	<div>China Korea Taiwan</div>
I am a:	<input type="radio"/> Girl <input checked="" type="radio"/> Boy
I am having these symptoms:	<input checked="" type="checkbox"/> Fever <input checked="" type="checkbox"/> Cough <input type="checkbox"/> Shortness of Breath

If the user did not select any country in the **multiselect dropdown menu**,

Display:
You did not travel overseas

If the user indicated 1 or 2 symptoms (not all 3),

Display:
Have Symptoms – Not Gonna Die Yet

check.php

Hey, boy!!!

You did not travel overseas

You are having these symptoms:

- fever
- cough

Have Symptoms - Not Gonna Die Yet

index.html

In the last 14 days
I have travelled to/from:

China
Korea
Taiwan

I am a:

☐ Girl
☒ Boy

I am having these symptoms:

☒ Fever
☒ Cough
☒ Shortness of Breath

check.php

Hey, boy!!!

You did not travel overseas

You are having these symptoms:

- fever
- cough
- breath



index.html

In the last 14 days
I have travelled to/from:

China
Korea
Taiwan

I am a:

☒ Girl
☐ Boy

I am having these symptoms:

☐ Fever
☐ Cough
☐ Shortness of Breath

check.php

Hey, girl!!!

You did not travel overseas

No Symptoms - You Are Okay

Week 4 Exercises

- **Go to:** <https://smu.sg/2021-spring-is113-wk4-doc> (Google Doc)
- Under "Download" → Click **Resources** link
 - Download all into **<webroot>/is113/week4** directory
- Complete
 - **Question 1** (Hello)
 - **Question 2** (Fruits)
 - **Question 3** (K-Pop)
 - **Question 4** (Login)
 - **Question 5** (Asterisk)
 - **Question 7** (Calculator)
- Zip up **all exercises** inside **week4** into **week4.zip**
 - Submit in eLearn → Assignments → Week 4
 - **(Optional)** Due: 11-Feb-2021 (Thursday), 3:00 PM SG Time
 - *If you submit your code, we will review your code & provide feedback.*