

**General Instructions:**

- You can refer to any offline resources already on your laptop, but you must disable all networking and Bluetooth connections during the test. You must not communicate with anyone via any means during the test.
- Just before the test, you will be given instructions by the invigilator as to how to obtain resource files required for the lab test and how to submit your solutions.
- No questions will be entertained during the test. If necessary, make your own assumptions.
- You are allowed to use only standard PHP classes and functions in your solutions – do not use any third party libraries.
- Use meaningful names for classes, methods, functions and variables, as well as indent your code correctly. Use 4 spaces for indentation. Otherwise, you may attract penalty of up to **20%** of your score for the corresponding question.
- You **MUST** include your name as author in the comments of all your submitted source files. Failure to do so WILL attract a penalty of up to **20%** of your score for the corresponding question.

For example, if your registered name is "KIM Jong Un" and email ID is kim.jongun.2019, include the following comment at the beginning of each source file you write.

```
<!--  
    Name:   KIM Jong Un  
    Email:  kim.jongun.2019  
-->
```

- You may wish to comment out the parts in your code which cause errors. But commented code will not be marked.
- **Resources:** Click [here](#)
- **Solutions:** Click [here](#)

**DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO**

## Given:

- q1-A.html
- q1-A.php
- q1-B.html
- q1-B.php

**Part A (5 marks) - Difficulty Level (\*)**

1. Update **q1-A.html** to include a form. The page displays as follows:

Number 1:	<input type="text" value="2"/>
Number 2:	<input type="text" value="5"/>
Number 3:	<input type="text" value="6"/>
Divisor:	<input type="text" value="2"/>
<input type="button" value="Submit"/>	

**Note:** "2", "5", "6" and "2" (divisor) are values entered by the user.

Upon clicking the SUBMIT button, it submits to **q1-A.php** via HTTP POST.

2. Implement a function called **is\_divisible\_by(\$num, \$n)** in **q1-A.php**. The function returns `true` if `$num` is divisible by `$n`, `false` otherwise.
3. Use the function **is\_divisible\_by(\$num, \$n)** to produce the following result when the user submits the values shown above through **q1-A.html**:

<ul style="list-style-type: none"><li>• 2 is divisible by 2: YES</li><li>• 5 is divisible by 2: NO</li><li>• 6 is divisible by 2: YES</li></ul>
---

**HINT:** Explore the use of HTML unordered list `<ul>`

**Part B (3 marks) - Difficulty Level (\*)**

1. Update **q1-B.html** to include a form. The page displays as shown below. This time, one or more numbers are input together in **ONE form input field** where the numbers are separated by a **comma**:

Numbers:

Divisor:

**Note:** "2,4,6,8,9" and "2" are values entered by the user.

Upon clicking the SUBMIT button, it submits to **q1-B.php** via HTTP GET.

2. **q1-B.php** uses the same function **is\_divisible\_by(\$num, \$n)** that you implemented in **Part A**. Copy and paste the function from **q1-A.php** to **q1-B.php**.
3. Use the function **is\_divisible\_by(\$num, \$n)** to produce the following result when the user submits the values shown above through **q1-B.html** :

- 2 is divisible by 2: YES
- 4 is divisible by 2: YES
- 6 is divisible by 2: YES
- 8 is divisible by 2: YES
- 9 is divisible by 2: NO

**HINT:** Explore the use of PHP **explode** function


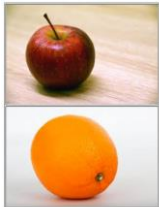

## Given:

- q2.php
- q2-display.php
- q2-one.php
- (Image Files) apple.jpg, orange.jpg, pear.jpg

**Part A (3 marks) - Difficulty Level (\*)**

1. Modify **q2.php** such that if the user clicks on the words ("Apple", "Orange" or "Pear"), the corresponding checkboxes will be selected/unselected.
2. Once the user selects the fruits and press on the SUBMIT button on page **q2.php**, the form submits to **q2-display.php**.
3. Modify **q2-display.php** such that appropriate images will be displayed in a tabular format (use border='1' for your table).
  - o For example, if the user selects "Apple" in **q2.php**, then page **q2-display.php** must display the image file **apple.jpg**.







**Sample Output**

Action Taken (q2.php)	Sample Output (q2-display.php)
<input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>None selected</b>	<b>Please select a fruit</b>  <b>(Note: Use HTML Heading-1)</b>
<input checked="" type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple" selected</b>	
<input checked="" type="checkbox"/> Apple <input checked="" type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple" and "Orange" selected</b>	
<input checked="" type="checkbox"/> Apple <input checked="" type="checkbox"/> Orange <input checked="" type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple", "Orange" and "Pear" selected</b>	

**Part B (3 marks) - Difficulty Level (\*\*)**

1. In page **q2-one.php**, once the user selects the fruits and press on the SUBMIT button on page, the form submits back to itself (to **q2-one.php**).
2. Modify **q2-one.php** such that:
  - o Appropriate images will be displayed in a tabular format (use border='1' for your table).
  - o Appropriate message will be displayed at the top of the page.

### Sample Output

Action Taken (q2-one.php)	Sample Output (q2-one.php)
<input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>None selected</b>	<b>Please select a fruit</b> <input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/>
<input checked="" type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple" selected</b>	<b>You selected 1 fruit</b>  <input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/>
<input checked="" type="checkbox"/> Apple <input checked="" type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple" and "Orange" selected</b>	<b>You selected 2 fruits</b>   <input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/>
<input checked="" type="checkbox"/> Apple <input checked="" type="checkbox"/> Orange <input checked="" type="checkbox"/> Pear <input type="button" value="Submit"/> <b>"Apple", "Orange" and "Pear" selected</b>	<b>You selected 3 fruits</b>    <input type="checkbox"/> Apple <input type="checkbox"/> Orange <input type="checkbox"/> Pear <input type="button" value="Submit"/>

**Question 3 (Difficulty Level: \*\*/\*\*\*)****[ 6 marks ]****Given:**

- q3.php

1. Page **q3.php** displays students' course **timetable** in a **tabular format**.
2. **\$students** is an (**indexed**) **array of associative arrays** where:
  - Each **associative array** represents a **student**. A student has a **name** and **one or more courses**.
  - Thus, each **associative array** contains TWO (2) key-value pairs where:

Key	Value Type
name	String (e.g. "Jong Un Kim")
courses	(Indexed) <b>array</b> of (indexed) arrays (e.g. see below)

- A **course** is an (**indexed**) **array** containing FIVE (5) items.

```
['CS102', 'Discrete Mathematics', 'TUE', '0830', 2]
```

- i. 1st item is the **Course Code**
- ii. 2nd item is the **Course Title**
- iii. 3rd item is the **Day** on which the course is offered (e.g. MON, TUE, etc.)
- iv. 4th item is the **Time** at which the course starts
  - 0830 means class starts at 08:30am
  - 1330 means class start at 1:30pm
- v. 5th item is the **Credit Units**
  - The value **1** refers to **1.5-hour** class, and
  - The value **2** refers to **3-hour** class
- vi. Hence, the above course **CS102**:
  - Is offered on **TUE** and it is a **3-hour** class
  - Starts at **08:30am**
  - Ends at **11:30am**

**Part A (2 marks) - Difficulty (\*\*)**

1. Complete **q3.php** such that the name drop-down menu will display the distinct names of students.
2. **DO NOT HARD-CODE** the names.
3. Your implementation should make use of the **getStudentNames ()** function given in the **q3.php** file. This function is left incomplete. Please complete this function.

When the page loads:

Name:

When the user clicks on the drop-down menu:

Name 

✓ Jong Un Kim

Donald Trump

Hugo Chavez

**Part B (4 marks) - Difficulty (\*\*\*)**

1. Complete `q3.php` such that it displays the selected student's timetable showing all courses taken by the student.
2. When a student's name is selected in the drop-down menu and the "Show Timetable" button is clicked, the form submits to itself (to `q3.php` page). It then:
  - a. Displays the student's timetable in an HTML table; and
  - b. The student's name should be "selected" in the drop-down menu.
3. When the page loads for the first time, the timetable displayed will be for the first student in the drop-down menu (follow the order of student names - as returned by the `getStudentNames()` function).
3. You can assume that `$students` always contains at least one student.
4. Marks will be deducted for overly repetitive code that could have been simplified, e.g., by using a loop, or by writing a function.

**HINT:** Explore the use of `align='center'` attribute of `<td>`

**Example 1: The page loads for the first time**

Name: Jong Un Kim Show Timetable

	08:30am - 10:00am	10:00am - 11:30am	12:00nn - 1:30pm	1:30pm - 3:00pm	3:00pm - 4:30pm	4:30pm - 6:00pm
MON		IS111 Intro Programming				
TUE	CS102 Discrete Mathematics			EE200 Intro to Circuits		
WED		WRIT100 Writing and Reasoning				
THU						
FRI						LIT380 Intro to Korean Literature

**Example 2: After 'Donald Trump' is selected and 'Show Timetable' is clicked**

Name: Donald Trump Show Timetable

	08:30am - 10:00am	10:00am - 11:30am	12:00nn - 1:30pm	1:30pm - 3:00pm	3:00pm - 4:30pm	4:30pm - 6:00pm
MON						
TUE	IS112 Data Management					
WED		WRIT100 Writing and Reasoning	OBHR101 Leadership Team Building			
THU					IS113 Web Application Development	
FRI		STAT202 Bayesian Logics				

**Example 3: After 'Hugo Chavez' is selected and 'Show Timetable' is clicked**

Name: Hugo Chavez Show Timetable

	08:30am - 10:00am	10:00am - 11:30am	12:00nn - 1:30pm	1:30pm - 3:00pm	3:00pm - 4:30pm	4:30pm - 6:00pm
MON		IS111 Intro Programming				
TUE	IS112 Data Management			EE200 Intro to Circuits		
WED			OBHR101 Leadership Team Building			
THU						
FRI					STAT202 Bayesian Logics	

- END -