

Question 1: (50%)

Background:

After World War II and the advent of computers, cryptology has become increasingly complex and its applications are more widespread. Thus, we can use computers to decipher any data in binary representation, and no longer in written text. Now you receive a mysterious number that wants to tell you something. Please decipher this mysterious number by developing a decryption system using Javascript, and HTML.

Steps & Example:

1. Read the input number N: input = 265
(20%)
2. The decimal representation of N called X1, X1 = 265 (decimal)
3. Convert the decimal representation X1 into its binary representation X1 = 100001001 (binary)
4. Compute b1 which is the number of **1** in the binary representation X1. In this case, b1 = 3.
(20%)
5. The decimal representation of N called X2, X2 = 265 (hexadecimal)
6. Convert the hexadecimal representation X2 into its binary representation X2 = 1001100101
7. Compute b2 which is the number of **1** in the binary representation X2. In this case, b2 = 5.

Decipher:

(10%)

If $b1 > b2$, print "Time isn't the problem, it's getting out alive that's the problem";

If $b1 < b2$, print "I told you, you have to start looking differently at the world";

If $b1 = b2$, print "What's happened has happened";

Hint:

Input (html) → Logical calculation (javascript) → Output (html)

Password:

Decipher: I told you, you have to start looking differently at the world

Sample Input:

265

Sample Output:

I told you, you have to start looking differently at the world

Question 2: (50%)

Description:

You are going to build a webpage of a questionnaire to record personal information.

There are at most 3 people's information needed to be filled.

The questions should include name, gender, birthdate, phone number and email.

After submitting the form, a table with the filled personal information should be generated.

There should be 2 buttons for switching the styles of the table.

The webpage should look like this: (CSS is only required for the generated table)

The diagram illustrates the process of generating a table from a questionnaire form. On the left, the form titled '人員資料調查問卷' (Personnel Information Survey Questionnaire) contains three sections for individual data entry. The first section is for '第1個人' (Person 1) with fields for name (王小明), gender (male), birthdate (2020/11/01), phone number (0911222333), and email (ming@mail.com). The second section is for '第2個人' (Person 2) with fields for name (張小美), gender (female), birthdate (2020/11/02), phone number (0944555666), and email (mei@mail.com). The third section is for '第3個人' (Person 3) with fields for name (林小青), gender (female), birthdate (2020/11/03), phone number (0977888999), and email (green@mail.com). A '生成表格' (Generate Table) button is located at the bottom of the form. An arrow points from the form to the right, where two examples of the generated table are shown. The top example, titled '人員資料調查問卷', shows a table with a blue border and a blue background, with 'CSS風格1' (Style 1) selected. The bottom example, also titled '人員資料調查問卷', shows the same table with an orange border and orange background, with 'CSS風格2' (Style 2) selected. Both tables have columns for name, gender, birthdate, phone number, and email, and contain the data entered in the form.

姓名	性別	生日	手機	信箱
王小明	男	2020-11-01	0911222333	ming@mail.com
張小美	女	2020-11-02	0944555666	mei@mail.com
林小青	女	2020-11-03	0977888999	green@mail.com

Grading:

15% for form generation, 20% for table generation, 15% for style-switching function

Requirements: (minus 10 points for each unfulfilled instruction)

- (a) If some parts of the form are **unfilled**, then the corresponding table cell should be **left blank**. However, the "name" of the person must be filled! If the name is unfilled, give an alert to

remind the user to at least fill the name!

- (b) When switching the CSS styles of the table, you can design your own styles, but the two styles should be **totally different**! The following properties should be considered: text color, background color, border color, border width, border style.

人員資料調查問卷

第1個人

姓名:

性別: ☒ 男 ☐ 女

生日:

手機:

信箱:

第2個人

姓名:

性別: ☐ 男 ☐ 女

生日:

手機:

信箱:

第3個人

姓名:

性別: ☐ 男 ☒ 女

生日:

手機:

信箱:

這個網頁顯示
第2個人的姓名為必填項目！

人員資料調查問卷

第1個人

姓名:

性別: ☒ 男 ☐ 女

生日:

手機:

信箱:

第2個人

姓名:

性別: ☐ 男 ☐ 女

生日:

手機:

信箱:

第3個人

姓名:

性別: ☐ 男 ☒ 女

生日:

手機:

信箱:

姓名	性別	生日	手機	信箱
王小明	男	2020-11-01		ming@mail.com
張小美				
林小青	女		0977888999	

[Hint]

To get the value of certain HTML input element in the form, for example

```
<form id="form_id">  
  <input type="text" name="phone_name" id="phone_id" value="">  
</form>
```

You can use the following Javascript command to get the content of user's input:

```
var phone_value = document.getElementById("phone_id").value;
```

or

```
var phone_value = document.getElementById("form_id").phone_name.value;
```

Midterm Homework 1

- You can only use W3School and course slides in the test
 - Otherwise, you get 0 point
- Copy = 0 !
- Title & file name
 - 動態網頁程式設計期中考試作業_學號_學生名.zip
- You **only** need to hand in the **HTML files** instead of the whole visual studio project
 - 學號_Q1.html
 - 學號_Q2.html
- Examination time
 - 13:10~16:00
 - Over examination time, your grade will be deducted by 40 points and the exam will become your homework on 23:00 on 11/11.
 - If you do not sign in during examination, your grade will be deducted by 40 points