

# **PRINCIPLES OF INTERNET PROGRAMMING (IT205N)**

## **ASSIGNMENT 1**

**SESSION : JANUARY – APRIL 2018**



**SEGi**  
College  

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Penang  
A member of  
SEGi University Group

<b>NAME</b>	Tan Chong How
<b>STUDENT NUMBER</b>	SCPG1600150
<b>INSTRUCTOR</b>	ANG JIAN XIANG (Ryan)



### Student Particulars

Name	: Tan Chong How
IC Number	: 971030-07-5073
Student Number	: SCPG1600150
Course Programme	: DIIT
Intake	: APRIL 2016
Subject Title	: PRINCIPLES OF INTERNET PROGRAMMING
Subject Code	: IT205N
Assignment Title	: ASSIGNMENT 1
Name of Lecturer	: MR ANG JIAN XIANG
Due Date	: 26 <sup>th</sup> FEBRUARY 2018, 6.00pm
College	: SEGI COLLEGE, PENANG

### Declaration by student:

I, Tan Chong How, hereby declare that the attached assignment is my own work and understand that if I am suspected of plagiarism or another form of cheating; my work will be referred to the lecturer who may, as a result recommend to the Examinations Board that my enrolment in the programme be discontinued.

20th Feb 2018

**Date**

tch

**Signature of student**



### Assignment Allocation of Marks

No.	Description of criteria	Weightings	Marks Allotted by Lecturer
<b>1</b>	<b><u>PART A</u></b>	40%	
	Question 1	10%	
	Question 2	10%	
	Question 3	10%	
	Question 4	10%	
<b>2</b>	<b><u>PART B</u></b>	60%	
	Interface design and program output	10%	
	Functionality (JavaScript events, customized functions, logics and flow)	35%	
	Creativity and Originality	10%	
	Program structure (Indentation & naming convention)	5%	
	<b>Total Mark</b>	100%	
	<b>Total Mark in 15%</b>	15%	

**Comment:**

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Lecturer's Name : Ang Jian Xiang  
Date :



Assignment 1 Submission Date:  
**26<sup>th</sup> FEBRUARY 2018 (WEDNESDAY, 6 PM)**

### Learning Outcome Assessed

- LO1 Applying the basic syntax for writing JavaScript scripts.
- LO2 Integrating between HTML and JavaScript.
- LO3 Applying conditional statement, looping, function in JavaScript.
- LO4 Applying HTML DOM with JavaScript to create dynamic HTML.
- LO5 Creating JavaScript-based application.

### Description of Assignment

This assignment consist of **TWO(2)** parts, you are required to complete for both.

#### **PART A [40%]**

##### **Question 1 (10%)**

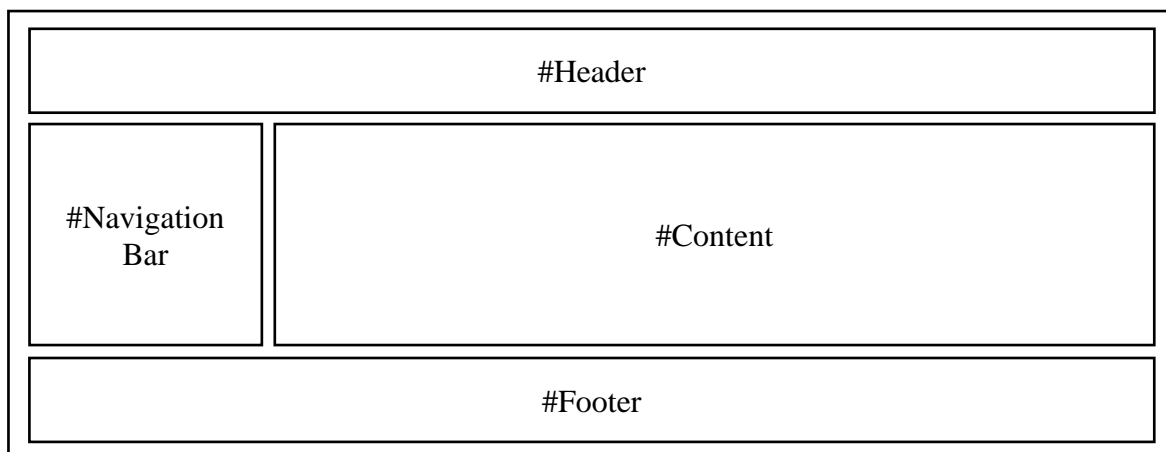
Write a JavaScript to display the Pythagorean Triples table according to the number of set required by user. For an example, if user enter 3, then the application will list out the first 3 Pythagorean Triples in a table format (as shown in below).

a	b	c
1	0	1
3	4	5
5	12	13

Provide one input text field to user for the number of set(s) needed and display output accordingly.

##### **Question 2 (10%)**

Construct a html layout as showing in below:

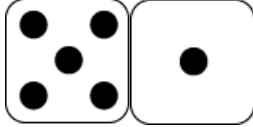


Write a JavaScript that would change the background colour of section provided. For an example, user choose **#Content** section, then user is allowed to pick a favourite colour from the colour picker. Once the desired colour is picked by user, the background colour of the selected section must update accordingly.



### Question 3 (10%)

Write a JavaScript to roll two dice randomly. The application must display the output in image format. For an example, *Die 1* is **5**, *Die 2* is **1**, the output will look as follow:



The application allow user to specify the number needed, then will output all the outcomes at once.


### Question 4 (10%)

Write a script that allow user to enter multiple personal information, such as name, email and telephone. Display them into a description list. For any new entry of personal information should append to the end of list. Data validation needed for all fields, especially email and telephone (the length of digits must between 8 and 10). Alert a simple message to user for any invalid data found.

### PART B [60%]

You are required to create a to-do-list in JavaScript based. This application must cover basic features, such as add, edit and remove an item from the list. Upon adding an item, user can define the priority of it. There are three different levels of priorities, which are high, medium and low priorities. Each item must be arranged according to the periority set. For an example, all the items that set in high priority must be placed on top of the list. The design and outlook of the list is based on your creativity, for instance, you may use three colours to differentiate the different level of priority. You are allowed to use any external open source library (**with proper citation and acknowledgment required**) in order to enhance the visual effect or to achieve something needed for your application. You are also encouraged to add any extra feature that suit the need of your application for rewarding some bonus marks.

### Submission Requirements

A word-processed, printed document containing all written components of the assignment signed and dated. The report length should not less than 5 pages. **Page number** should be typed on every bottom of page. For text document, **Times New Roman, 1.5 line spacing, 12 point** of font size and **justified** text. For source code, **Courier New** with **no line spacing**,  **Light Gray (Background 2)** as background, **10 point** of font size.

The report should include:

- PART A: Source code with some program output screenshots.
- PART B: Describe flow of the application, provide layout structure (in wireframe) and actual interface design, source code and program output screenshots.

Submit your source files and codes (PART A and PART B) to the Blackboard.

For PART A, file naming for each question of your source file must follow the format below:

**A\_<YourFirstName>\_Q<QuestionNo>**

Example: A\_JianXiang\_Q1



For PART B, the main page of your HTML document should named as “**index.html**” and all other files like image files (.jpeg or .png), javascript files (.js), css file (.css) should put under different folders with proper naming, such as, images, scripts, css etc.

### **Instruction of the Assignment**

Hand-outs / Print Screens / Softcopies should be submitted within the deadlines. Please submit **softcopies (through BLACKBOARD SYSTEM) of your Assignment 1** before or on the date of submission. The hardcopy of the assignment must be bounded and submitted in a booklet form using **tape binding**.

Please submit assignment with the assignment cover page during the submission. All coursework should be submitted on the schedule dateline. Extensions are not normally granted, but in exceptional cases, limited extensions may be granted. In term of **late submission**, a **10% deduction per day** of total coursework marks (excluding weekends and public holidays). Late submission between **5 to 10 days will deduct a 50%** of the total coursework marks. Late submission **past 10 days and non-submission will result in an automatic 0%** for the coursework.

## Question 1

number of set(s) needed:

Output:

Number cannot be blank or below 1!

number of set(s) needed:

Output:

a	b	c
1	0	1
3	4	5
5	12	13
7	24	25
9	40	41
11	60	61

## Source Code

```
<!DOCTYPE html>
<html>
<head>
<title>Question 1</title>
<style type="text/css"> table,td,th{border:1px solid black; }
table{border-collapse: collapse; width: 20%; } </style>
</head>
<body>
<label>number of set(s) needed: </label>
<input type="number" id="input">
<input id="submit" type="submit" onclick="display()">
<p>Output:</p>
<div id="output"></div>
<script type="text/javascript">
input.addEventListener("keyup", function(event) {
event.preventDefault();
if (event.keyCode === 13) {
submit.click();
}
});

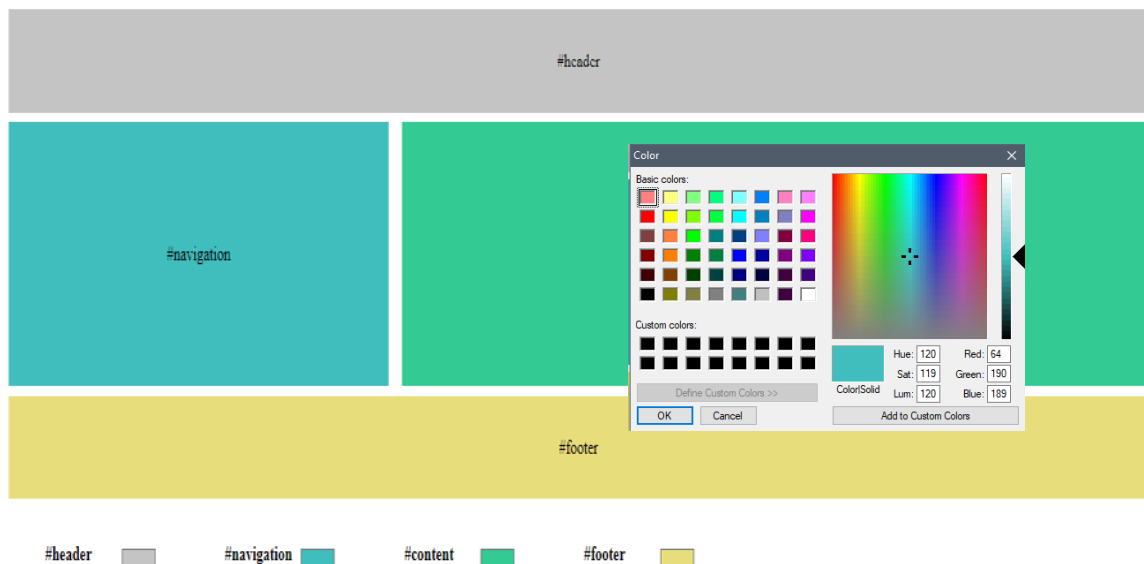
function display() {
var check = Number(input.value);
if(check<1){
alert("Number cannot be blank or below 1!","Error");
return;
}
```

```

output.innerHTML = null;
var t4ble = document.createElement("table");
var tr = document.createElement("tr");
for(var i=0;i<3;i++){
title=["a","b","c"];
var th = document.createElement("th");
var text = document.createTextNode(title[i]);
th.appendChild(text); tr.appendChild(th);
}
t4ble.appendChild(tr);
var a=1; var b=0;
for(i=0;i<input.value;i++){
var tr = document.createElement("tr");
for(j=0;j<3;j++){
var td = document.createElement("td");
var value = [a,b,b+1]
var text= document.createTextNode(value[j]);
td.appendChild(text);
tr.appendChild(td);
}
a+=2;
b=((a**2)-1)/2;
t4ble.appendChild(tr);
}
output.appendChild(t4ble);
}
</script>
</body>
</html>

```

## Question 2





## Source Code

```
<!DOCTYPE html>
<html>
<head>
  <title>Question 2</title>
  <style type="text/css">
    input[type=checkbox]{
      border:none;
      background: none;
    }
    .header{
      padding:1rem;
      text-align: center;
    }
    .navigation{
      margin-top: 0.5rem;
      padding:5rem 0;
      width: 33.33%;
      float: left;
      text-align: center;
    }
    .content{
      margin-top:0.5rem;
      width: 65.5%;
      padding:6rem 0;
      float:right;
      text-align: center;
    }
    .footer{
      margin-top: 0.5rem;
      width:100%;
      padding: 1rem 0;
      float:left;
      text-align: center;
    }
    .wtf{
      margin-top: 1rem;
      float:left;
      margin-top:1rem;
    }
    ul{
      list-style: none;
      float: left;
    }
    li{
      float:left;
      padding: 0.2rem;
      width: 5rem;
    }
  </style>
</head>
<body>
  <div class="header">
    <p>#header</p>
  </div>
  <div class="navigation">
```

```

        <p>#navigation</p>
    </div>
    <div class="content">
        #content
    </div>
    <div class="footer">
        <p>#footer</p>
    </div>
    <div class="wtf">
        <table>
            <ul>
                <li><strong>#header</strong></li>
                <li><input type="color" value="#C4C4C4"
id="Header" onchange="change()"></li>
            </ul>
            <ul>
                <li><strong>#navigation</strong></li>
                <li><input type="color" value="#40BEBD"
id="Navigation" onchange="change()"></li>
            </ul>
            <ul>
                <li><strong>#content</strong></li>
                <li><input type="color" value="#33CB93"
id="Content" onchange="change()"></li>
            </ul>
            <ul>
                <li><strong>#footer</strong></li>
                <li><input type="color" value="#E7DE7B"
id="Footer" onchange="change()"></li>
            </ul>
        </table>
    </div>
    <script type="text/javascript">
        var header = document.querySelector(".header");
        header.style.backgroundColor = Header.value;
        var navigation = document.querySelector(".navigation");
        navigation.style.backgroundColor = Navigation.value;
        var content = document.querySelector(".content");
        content.style.backgroundColor = Content.value;
        var footer = document.querySelector(".footer");
        footer.style.backgroundColor = Footer.value;
        function change() {
            header.style.backgroundColor = Header.value;
            navigation.style.backgroundColor =
Navigation.value;
            content.style.backgroundColor = Content.value;
            footer.style.backgroundColor = Footer.value;
        }

        header.addEventListener("click",function(){Header.click();})

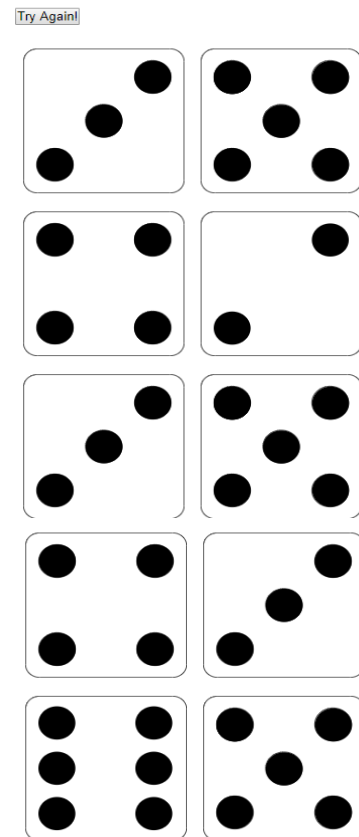
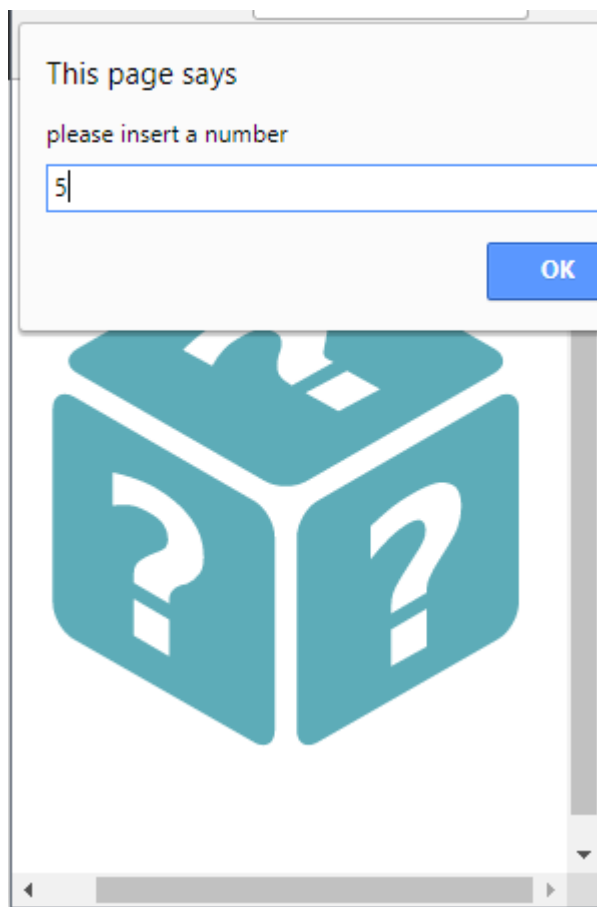
        navigation.addEventListener("click",function(){Navigation.click
();})

        content.addEventListener("click",function(){Content.click();})

        footer.addEventListener("click",function(){Footer.click();})
    </script>
</body>
</html>

```

### Question 3



### Source Code

```
<!DOCTYPE html>
<html>
<head>
  <title>Question 3</title>
  <meta charset="utf-8"/>
  <style type="text/css">
    *{
      margin:0;
      padding:0;
    }
    img{
      width:10rem;
      padding:0.5rem;
    }
    #random{
      width:100%;
      height:80vh;
      display: block;
      margin-left: auto;
      margin-right: auto;
      cursor:pointer;
      padding:1.5rem;
    }
  </style>
</head>
<body>
  <img alt="A large teal cube with white question marks on its faces." data-bbox="178 263 474 448"/>
</body>
</html>
```

```

        #output{
            padding:1rem;
        }
    </style>
</head>
<body>
    <div id="output">
        
    </div>
<script type="text/javascript">
    function generate(){
        var kali = Number(prompt("please insert a number"));
        if(kali>0){
            output.innerHTML= null;
            output.appendChild(button);
            output.innerHTML+="  


```

#### Question 4

**Personal Information**

Name :

Email :

Telephone :

**Output**

This page says  
invalid email please try again

This page says  
invalid name please try again

This page says  
invalid phone number please try again

**Output**

**Ang Jian Xiang**  
Email  
angjianxiang@segi.edu.my  
phone.No  
0112899345

**Lim Hong In**  
Email  
honghong123@gmail.com  
phone.No  
0184538765

#### Source Code

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <title></title>
  <style type="text/css">
    fieldset{
      width: 40rem;
      background: skyblue;
      border:3px solid #000;
    }
    legend{
      background: white;
      font-weight: bold;
    }
    ul{
      list-style: none;
    }
    li:first-child{
      width:6rem;
    }
    li{
      float: left;
```

```

        width: 25rem;
        padding:0.4rem;
    }
    #submit{
        float:right;
        text-align: right;
        padding:1rem;
        width:10%;
    }
    input{
        width:100%;
    }
    dt:first-child{
        font-weight: bold;
    }
</style>
</head>
<body>
    <fieldset>
        <legend>Personal Information</legend>
        <ul>
            <li><label for="name">Name : </label></li>
            <li><input type="text" id="nametext"></li>
        </ul>
        <ul>
            <li><label for="email">Email : </label></li>
            <li><input type="email" id="emailtext"></li>
        </ul>
        <ul>
            <li><label for="telephonetext">Telephone :
</label></li>
            <li><input type="text" id="telephonetext"
style="width:80%" onkeypress="return event.charCode >= 48 &&
event.charCode <= 57"> <button
onclick="cleartel()">Clear</button></li>
        </ul>
        <ul>
            <li id="submit"><button onclick="generate()"
id="wow1">Submit</button></li>
        </ul>
    </fieldset>
    <fieldset id="output">
        <legend>Output</legend>
    </fieldset>
    <script type="text/javascript">
        function cleartel(){
            telephonetext.value = null;
        }
        function generate() {
            if(nametext.value == "" || /^[A-Za-
z\s]+$/ .test(name.value) == false){
                return alert("invalid name please try
again");
            }
            if(emailtext.value == "" ||
isPossiblyValidEmail(emailtext.value) == false){
                return alert("invalid email please try
again");
            }
        }
    </script>

```

```

        if(telephonetext.value.length<8 ||
telephonetext.value.length>10){
            return alert("invalid phone number please try
again");
        }
        var dl = document.createElement("dl");
        for(var i=0;i<3;i++){
            var dt = document.createElement("dt");
            var dd = document.createElement("dd");
            var info =
[nametext.value,"Email","phone.No"];
            var gg =
["",emailtext.value,telephonetext.value];
            var text = document.createTextNode(info[i]);
            var text1 = document.createTextNode(gg[i]);
            dd.appendChild(text1);
            dl.appendChild(dt);
            dt.appendChild(text);
            dl.appendChild(dd);
        }
        output.appendChild(dl);
        telephonetext.value = null;
        nametext.value =null;
        emailtext.value = null;
        nametext.focus();
    }
    function isPossiblyValidEmail(txt) {
        return txt.length > 5 && txt.indexOf('@')>0;
    }
}
</script>
</body>
</html>

```

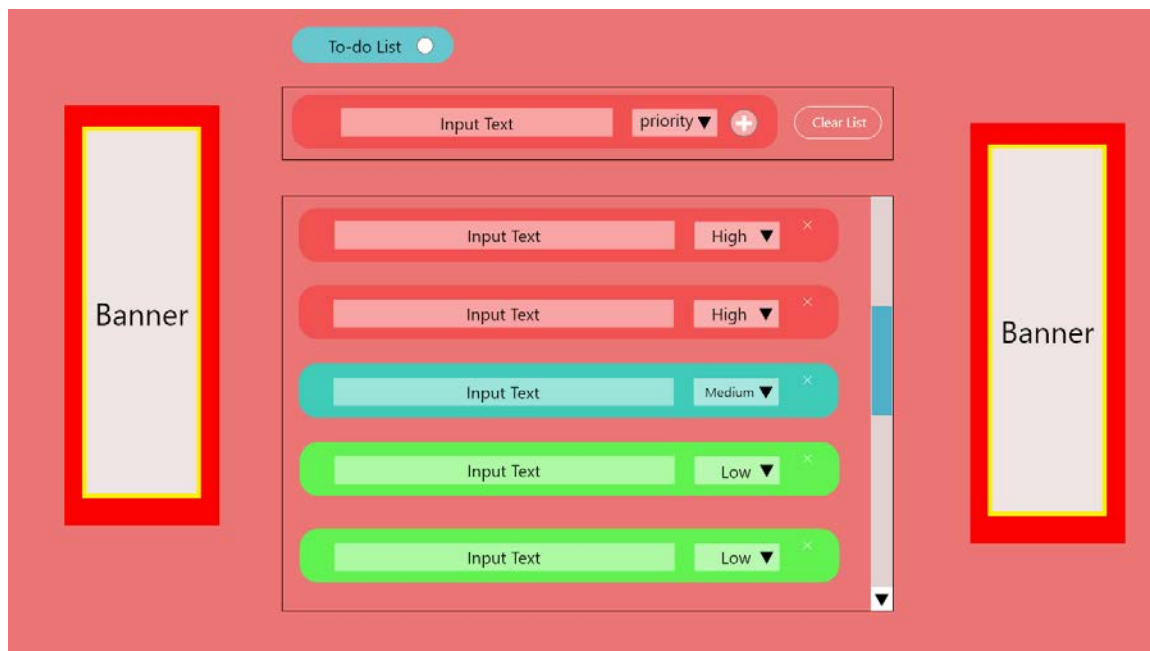
## **Part B**

Time Spent : 6 days (Average 6 hours per day)

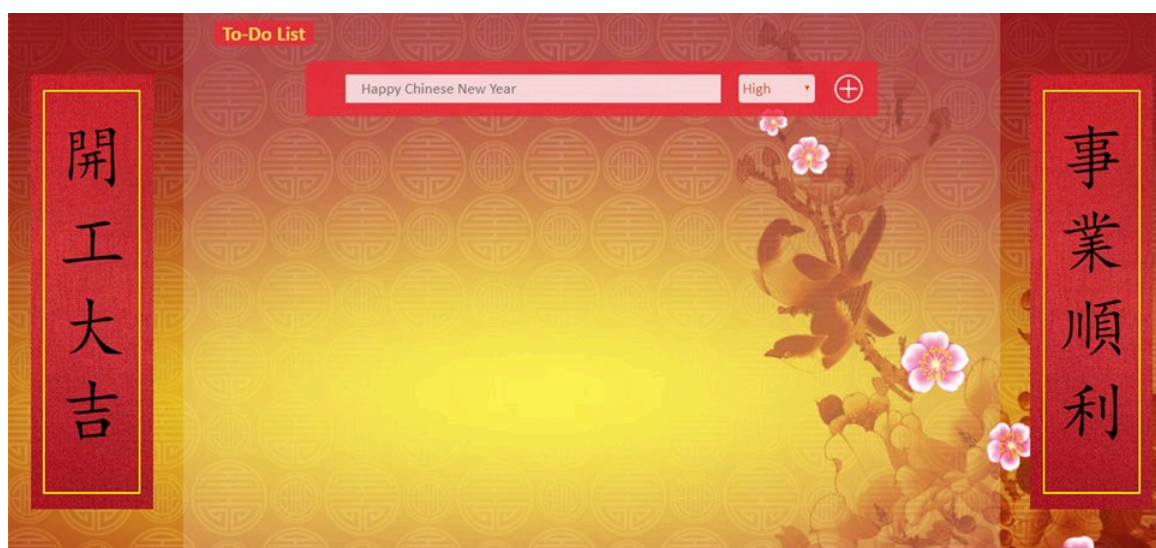
- **Without using any library and framework. Develop with css preprocessor (SASS).**
- **Some of the javascript code idea are citation inside the comment.**

Day 1: Design Wireframe

During Day 1, I am having dinner with my family and I saw some shop are selling Chinese banner, so i am having an idea how about I design my webpage with Chinese New Year theme with Chinese banner. Here is my WireFrame on next page.



Day 2 (13/2/2018) : Start to structure layout of the webpage (html/css)



Day 3 (13/2/2018) :

- Allow User to add to-do list.





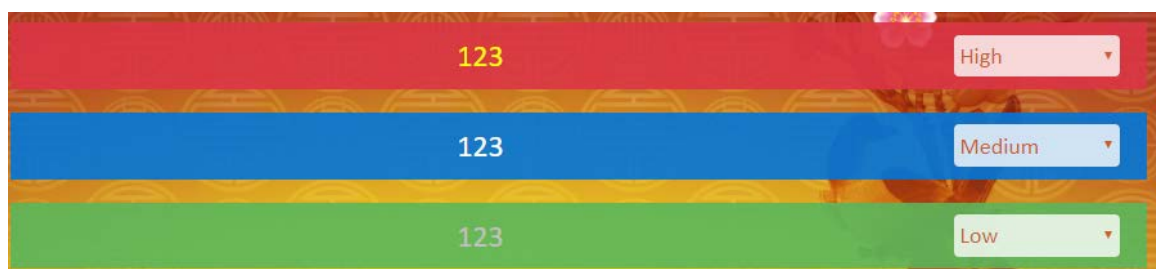
Day 4 (14/2/2018) :

- Having feature to close the list



Day 5 (15/2/2018) :

- Adding 3 different color with different level of priority.
- Allow user to re-edit the list title and change priority.
- Sorting 3 different priority level.



Day 6 (16/2/2018):

- Adding BGM with the page (can toggle music beside breadcrumbs)
- Enhance banner font.
- Adding clear list button.



\*Final product

## Source Code

### index.html

```
<!DOCTYPE html>
<html>
<head>
  <title></title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1">
  <link rel="stylesheet" type="text/css" href="css/style.css">
</head>
<body id="body">
  <div class="duilian">
    <div class="bor">
      <p class="text">开工大吉</p>
    </div>
  </div>
  <div class="duilian right">
    <div class="bor">
      <p class="text">事业顺利</p>
    </div>
  </div>
  <div class="container height">
    <div class="list-margin">
      <h1>To-Do List</h1>
      
    </div>
    <div class="container none-back">
      <div class="container-todo">
        <input type="text" name="" placeholder="Happy Chinese New Year"
id="title">
        <select id="priority">
          <option selected disabled hidden>Priority</option>

          <option value="high">High</option>
          <option value="medium">Medium</option>
          <option value="low">Low</option>
        </select>
        
      </div>
      <button class="clear" id="clear">Clear List</button>
    </div>
    <div class="result" id="output">
      <div class="list-item" id="item">
        <p class="content" id="content"
contenteditable="true"></p>
        <select id="priority1" onchange="pchange()">
          <option value="high">High</option>
          <option value="medium">Medium</option>
          <option value="low">Low</option>
        </select>
        
      </div>

      <div id="high"></div>
      <div id="medium"></div>
    </div>
  </div>
</body>
</html>
```

```

        <div id="low"></div>
    </div>
</div>
<script type="text/javascript" src="js/script.js"></script>
</body>
</html>

```

## Script.js

```

//Background Music
//create music
var audio = new Audio('Asset/audio/sound.mp3');
//adding checker
var audioCheck = true;
//BGM loop src=
https://stackoverflow.com/questions/3273552/html5-audio-looping
    audio.addEventListener('ended', function() {
        this.currentTime = 0; //if audio is 0
        this.play(); //play audio again
    }, false); //return false
    audio.play(); //play audio
    //toggle music mute and play
    sound.addEventListener("click",function () {
        if(audioCheck == true){
            sound.setAttribute("src","Asset/images/mute.svg");
            audio.pause();
            audioCheck = false;
        }else{
            sound.setAttribute("src","Asset/images/sound.svg");
            audio.play();
            audioCheck = true;
        }
    });
    function pchange() {
        for(var
i=0;i<output.querySelectorAll("select").length;i++){
            var x = document.querySelector("#option"+i);
            switch(x.value){
                case "high":
                    high.appendChild(x.parentNode);
                    break;

                case "medium":
                    medium.appendChild(x.parentNode);
                    break;

                case "low":
                    low.appendChild(x.parentNode);
                    break;
            }
        }
    }

    title.addEventListener("keyup", function(event) {
        event.preventDefault();
        if (event.keyCode === 13) {
            add2.click();
        }
    });

```

```

        content.addEventListener('keypress', function(evt) {
            if (evt.which === 13) {
                evt.preventDefault();
            }
        });

        //duplicate id="item"
        var i = 0; //set initial value
        var template = item.cloneNode(true); //clone as a template
        output.removeChild(item); //remove the original div to make it
initial no div portion
        function add() {
            if(title.value == "")
                return alert("input cannot be blank");
            clone = template.cloneNode(true); //using the template to clone
again
            clone.querySelector("select").setAttribute("id","option"+i);
            //append Element
            switch(priority.value){
                case "high":
                    high.appendChild(clone);
                    break;
                case "low":
                    clone.querySelector("select").value = "low"
                    low.appendChild(clone);
                    break;
                case "medium":
                    clone.querySelector("select").value = "medium"
                    medium.appendChild(clone);
                    break;
                default: alert("please Select the priority thank you");
break;
            }

            //apply text
            clone.querySelector("p").innerHTML = title.value;
            //function (close)
            clone.querySelector("#closebox").addEventListener("click",function () {
                this.parentNode.style.display = "none";
//https://stackoverflow.com/questions/30150347/delete-parent-element-with-javascript
            });
            i++; // initial increment
        }

        //show Happy CNY in console
        console.log("%cHappy Chinese New Year!", "color: red; font-family: sans-serif; font-size: 1em; font-weight: bolder; text-shadow: #000 1px 1px;");

        //clear button
        clear.addEventListener("click",function () {
            for(var i=0;i<item.length;i++){
                item[i].style.display = "none";
            }
        });

```