指南針實作(Compass)

▣ Matis Hsiao

學習目標

- 學習使用Phonegap指南針API

課程大綱

- 指南針API功能說明
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- 使用手機或平板實作

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指南針**API**功能說明

- ▣ compass.getCurrentHeading
  - ❖ 取得目前的指南針角度(0~359.99)
- ▣ compass.watchHeading
  - ❖ 定時監聽指南針角度資訊
- ▣ compass.clearWatch
  - ❖ 清除監聽事件

0度=北,90度=東,180度=南,270度=西

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API使用範例-取得目前指南針資料

```
//監聽裝置準備完成事件
document.addEventListener("deviceready", onDeviceReady, false);
//裝置準備完成
function onDeviceReady() {
    //取得當下的指南針資訊
    navigator.compass.getCurrentHeading(onSuccess, onError);
}
function onSuccess(heading) {
    alert('角度: ' + heading.magneticHeading);
}
//資料取得錯誤
function onError() {
    alert('指南針資料取得錯誤:'+ compassError.code);
}
```

API使用範例-定時取得指南針資料

```
var watchID = null;//宣告監聽ID
//定時監聽指南針資訊每1秒監聽一次
   function startWatch() {
      //每1秒更新一次
      var options = { frequency: 1000 };
      watchID = navigator.compass.watchHeading(onWatchSuccess, onError, options);
   }
   //停止監聽事件
   function stopWatch() {
      if (watchID) {
          navigator.compass.clearWatch(watchID);
          watchID = null;
      }
   } //取得監聽資訊
   function onWatchSuccess(heading) {
      var element = document.getElementById('heading');
      element.innerHTML = '角度: ' + heading.magneticHeading  + ' 度';
   }
```

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API範例HTML程式碼

```html
<div id="heading">等待指向資料中..</div>
<br />
<div id="way">等待指向資料中..</div>
<br />
<button onclick="startWatch();">開始指南針監聽</button>
<button onclick="stopWatch();">停止指南針監聽</button>
<br />
```

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API範例程式碼說明-1

```
var watchID = null;//宣告監聽ID
//監聽裝置準備完成事件
document.addEventListener("deviceready", onDeviceReady, false);
//裝置準備完成
function onDeviceReady() {
    //取得當下的指南針資訊
    navigator.compass.getCurrentHeading(onSuccess, onError);
}
function onSuccess(heading) {
    alert('角度: ' + heading.magneticHeading);
}
//定時監聽指南針資訊每1秒監聽一次
function startWatch() {
        //每1秒更新一次
        var options = { frequency: 1000 };
        watchID = navigator.compass.watchHeading(onWatchSuccess, onError, options);
}
//停止監聽事件
function stopWatch() {
        if (watchID) {
            navigator.compass.clearWatch(watchID);
            watchID = null;
        }
}
```

API範例程式碼說明-2

```
//取得監聽資訊
function onWatchSuccess(heading) {
     showWatch(heading.magneticHeading);
}
//顯示指南針資訊
function showWatch(degrees){
    var element = document.getElementById('heading');
    var way = document.getElementById('way');
    if(parseInt(degrees) == 0)
            way.innerHTML = "北";
    else if(parseInt(degrees) <= 45)
            way.innerHTML = "東北";
    else if(parseInt(degrees) == 90)
            way.innerHTML = "東";
    else if(parseInt(degrees) <= 135)
            way.innerHTML = "東南";
    else if(parseInt(degrees) == 180)
            way.innerHTML = "南";
    else if(parseInt(degrees) <= 225)
            way.innerHTML = "西南";
    else if(parseInt(degrees) == 270)
            way.innerHTML = "西";
    else if(parseInt(degrees) <= 315)
            way.innerHTML = "西北";
    element.innerHTML = '指向: ' + degrees + ' 度';
}
```

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原始碼-1

```html
<!DOCTYPE html>
<html>
<head>
<meta http-equiv="content-Type" content="text/html;" charset="utf-8">
<title>Compass</title>
<script type="text/javascript" charset="utf-8" src="phonegap.js"></script>
<script type="text/javascript" charset="utf-8">
   var watchID = null;//宣告監聽ID

//監聽裝置準備完成事件
document.addEventListener("deviceready", onDeviceReady, false);
//裝置準備完成
function onDeviceReady() {
//取得當下的指南針資訊
 navigator.compass.getCurrentHeading(onSuccess, onError);
}
function onSuccess(heading) {
                alert('角度: ' + heading.magneticHeading);
}
   //定時監聽指南針資訊每1秒監聽一次
   function startWatch() {
     //每1秒更新一次
     var options = { frequency: 1000 };
     watchID = navigator.compass.watchHeading(onWatchSuccess, onError, options);
   }
```

原始碼-2

```
//停止監聽事件
  function stopWatch() {
    if (watchID) {
      navigator.compass.clearWatch(watchID);
      watchID = null;
    }
  }
                //取得監聽資訊
  function onWatchSuccess(heading) {
      showWatch(heading.magneticHeading);
  }
//資料取得錯誤
  function onError() {
    alert('指南針資料取得錯誤:'+ compassError.code);
  }
```

原始碼-3

```
//顯示指南針資訊
  function showWatch(degrees){
            var element = document.getElementById('heading');
      var way = document.getElementById('way');
      if(parseInt(degrees) == 0)
            way.innerHTML = "北";
      else if(parseInt(degrees) <= 45)
            way.innerHTML = "東北";
      else if(parseInt(degrees) == 90)
            way.innerHTML = "東";
      else if(parseInt(degrees) <= 135)
            way.innerHTML = "東南";
      else if(parseInt(degrees) == 180)
            way.innerHTML = "南";
      else if(parseInt(degrees) <= 225)
            way.innerHTML = "西南";
      else if(parseInt(degrees) == 270)
            way.innerHTML = "西";
      else if(parseInt(degrees) <= 315)
            way.innerHTML = "西北";
      element.innerHTML = '指向: ' + degrees + ' 度';
  }
 </script>
 </head>
```

原始碼-4

```
<body>
   <div id="heading">等待指向資料中..</div>
   <br />
   <div id="way">等待指向資料中..</div>
   <br />
   <button onclick="startWatch();">開始指南針監聽</button>
   <button onclick="stopWatch();">停止指南針監聽</button>
   <br />
  </body>
</html>
```