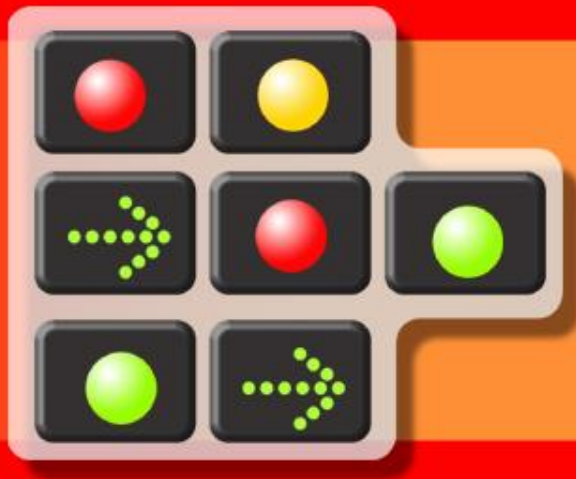


# 資訊技術(軟體設計) 職類發展說明會



職類裁判長 許基文

培訓老師 楊明玉



2016年01月21日

# 職類說明會 議程安排

時間	研討內容	主持（講）人
13:30~14:00	報 到	
14:00~14:10	開 幕 式	勞委會中部 辦公室長官
14:10~15:10	國際技能競賽介紹： 1. 國際技能競賽經驗分享 2. 國際技能競賽過去及未來變革 3. 國際競賽試題及評分規則解析(43屆) 4. 全國技能競賽範圍及軟體設計工具說明 5. 全國技能競賽實施規劃	資訊技術職類 裁判長許基文
15:10~15:20	休 息	
15:20~16:00	資訊技術職類技能說明： 1. 國際技能競賽經驗分享 2. 選手強化及養成訓練 3. 國手培訓經驗分享	裁判暨國手 指導老師楊明玉
16:00~16:20	問題與討論	

## 第43屆國際技能競賽 大會日程表

日期	行程
8月5日 (星期三)	技術代表、技術代表助理、副裁判長等抵達(8月4日自台灣出發)
8月6日 (星期四)	國際裁判、翻譯人員等抵達 (8月5日自台灣出發)
8月7日 (星期五)	歡迎會
8月8日 (星期六)	正代表、選手、選手管理、官方觀察員 及觀察員等抵達(8月7日自台灣出發)
8月9日 (星期日)	歡迎會
8月10日 (星期一)	工作站準備
8月11日 (星期二)	開幕典禮及一校一國
8月12日 (星期三)	競賽第一天
8月13日 (星期四)	競賽第二天
8月14日 (星期五)	競賽第三天
8月15日 (星期六)	競賽第四天
8月16日 (星期日)	閉幕典禮及歡送會
8月17日 (星期一)	賦歸

## 競賽地點：巴西 聖保羅





# 競賽地點：巴西 聖保羅





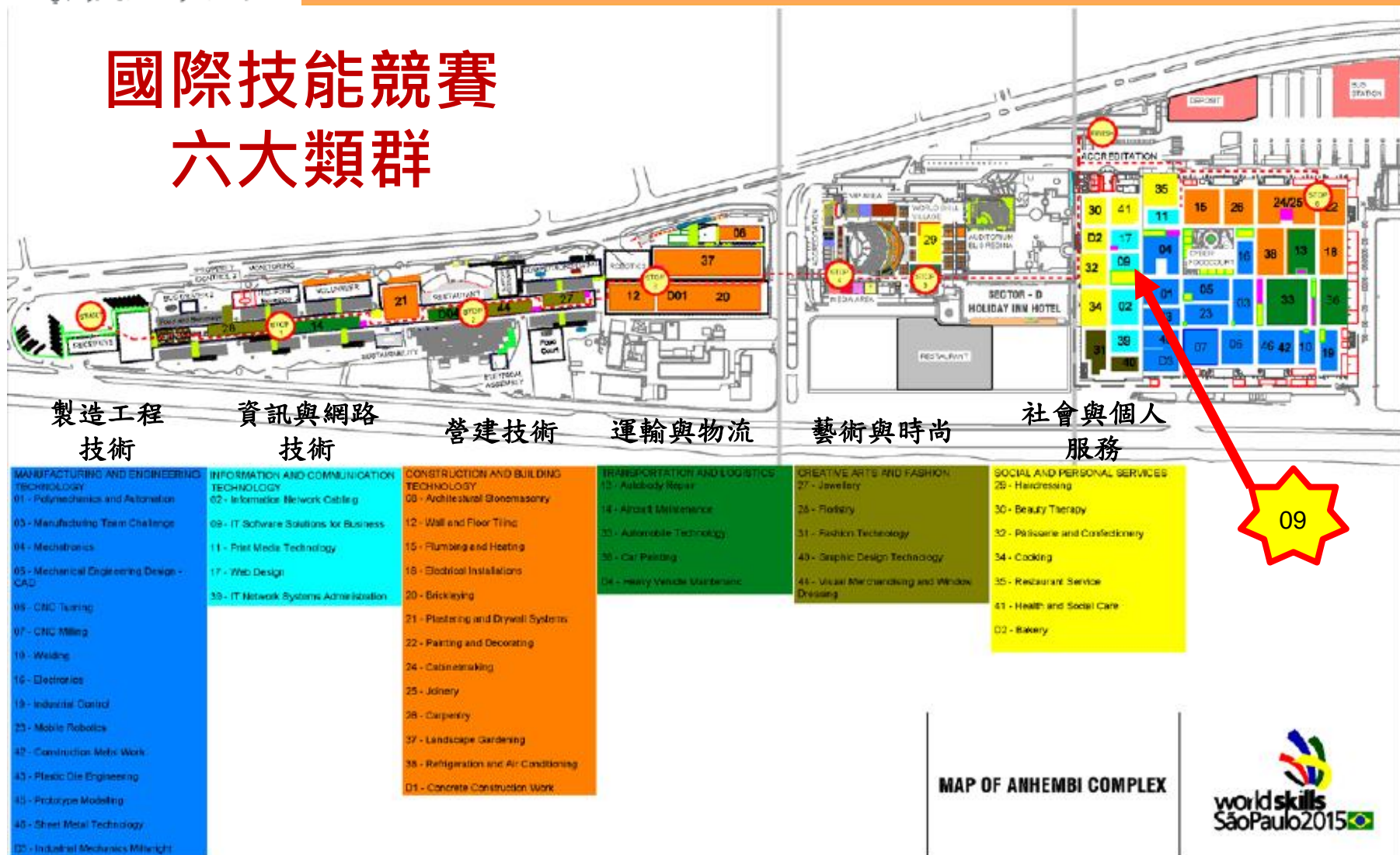
# 各競賽職類場地分布

巴西聖保羅  
Anhembi  
Convention  
and  
Exhibition  
Center



## 各競賽職類場地分布

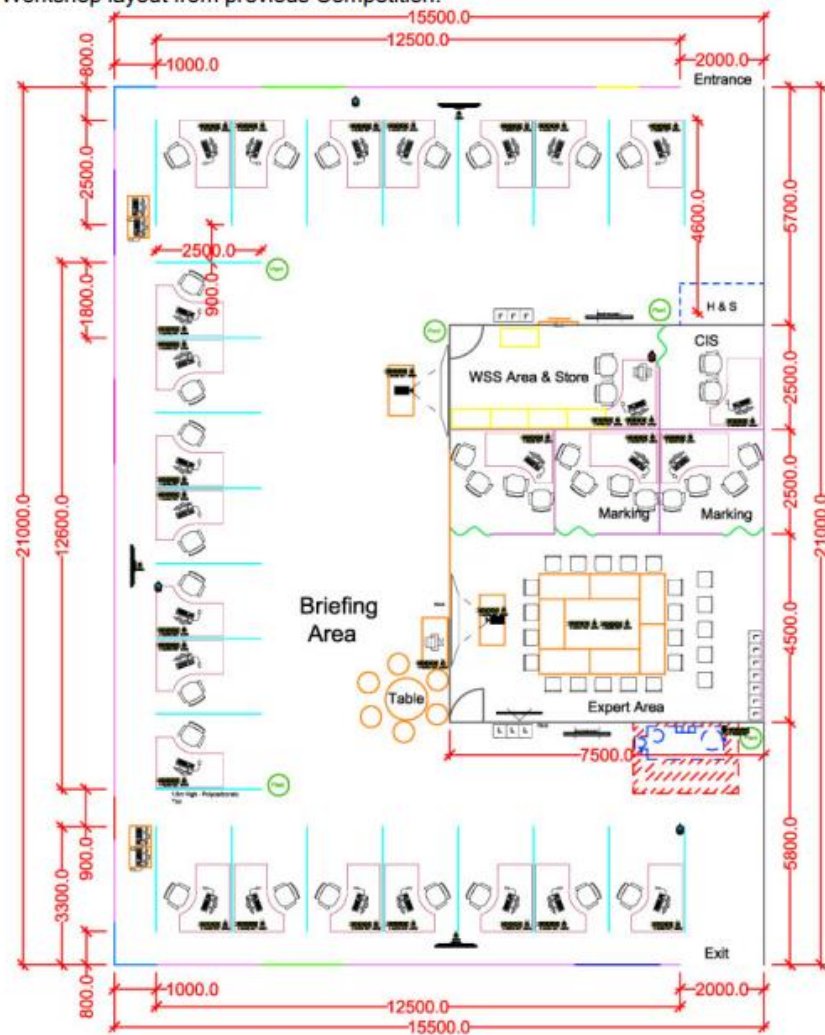
### 國際技能競賽 六大類群





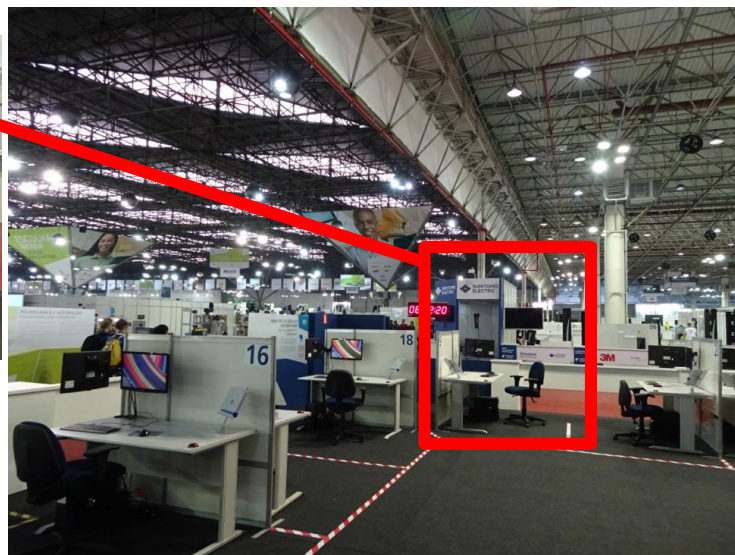
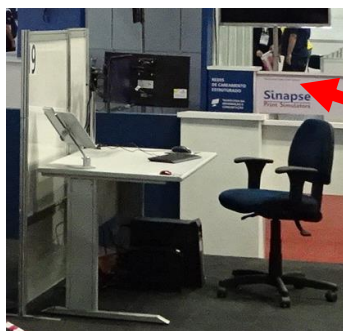
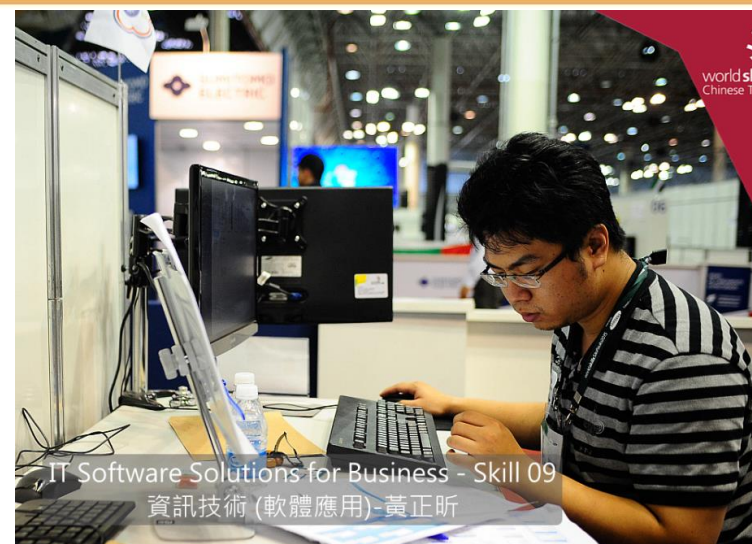
## 資訊技術競賽場地配置

Workshop layout from previous Competition:





## 資訊技術選手崗位配置



## 資訊技術參賽國家

**01.巴西 (Brazil)**

02.哥倫比亞 (Colombia)

**03.中華台北 (Chinese Taipei)**

04.芬蘭 (Finland)

**05.香港 (Hong Kong, China)**

06.印度 (India)

**07.印尼 (Indonesia)**

**08.伊朗 (Iran)**

**09.韓國 (Korea)**

10.馬來西亞 (Malaysia)

11.澳門 (Macao, China)

12.阿曼 (Oman)

13.沙烏地阿拉伯 (Saudi Arabia)

**14.新加坡 (Singapore)**

**15.瑞士 (Switzerland)**

16.阿拉伯聯合大公國 (United Arab Emirates)

**17.越南 (Vietnam)**

首次參加：

**18.中國 (China)**

**19.德國 (Germany)**

20.墨西哥 (Mexico)

21.南非 (South Africa)

22.摩洛哥 (Morocco)

另外，二國本屆先來  
觀摩尚未推派選手。

23.加拿大 (Canada)

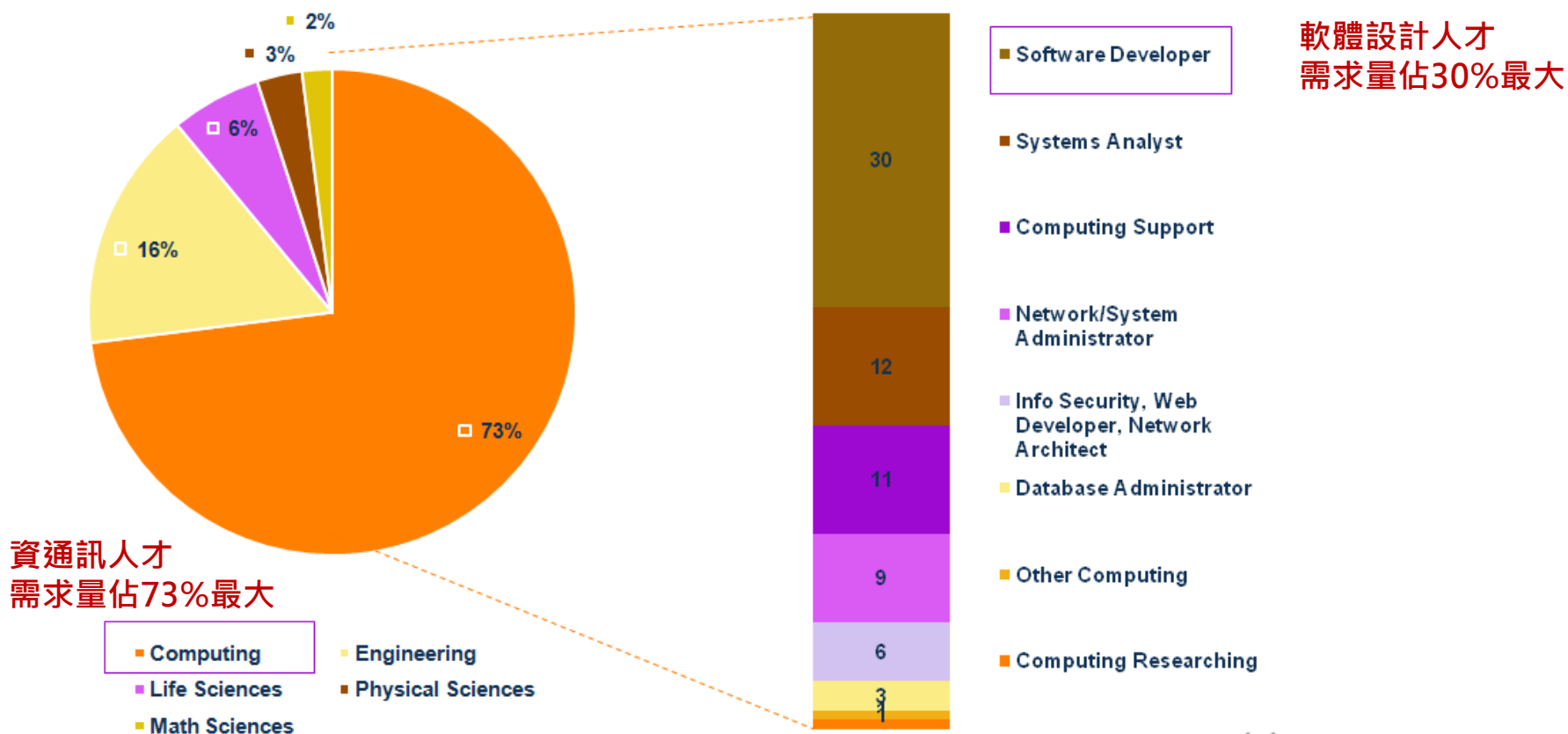
24.俄羅斯 (Russia)





# 43屆國際賽之變革

## \*STEM 調查之工作需求成長率 (至2020年)



\* STEM: Science, Technology, Engineering and Mathematics

# 43屆國際賽之變革

## 重新定義職務定位

02  
Information Network  
Cabling

- Telecom installation technician

09  
IT Software Solution  
for Business

- Application programmer

17  
Web Design

- Web designer/developer

39  
IT Network Systems  
Administration

- Network administrator



# 41~43屆國際賽之變革

- 一、本職類自第41屆開始，名稱由IT/Software Applications（資訊技術/軟體應用）改為**IT Software Solution for Business（資訊技術軟體商務解決方案）**，競賽模組內涵亦大幅調整。
- 二、競賽試題自41屆起改為考前完全不公開。
- 三、從獨立模組改為**整合性專案**。
- 四、自43屆起之應用系統設計工具已排除Office，**以專業程式設計軟體（C# 或 Java）加上SQL資料庫為主**。
- 五、Office工具主要應用於系統分析與設計報告、測試案例設計、資料整理與匯轉、專案簡報等用途。
- 六、去除OverDrive試題，加入業主訪談試題。

# 第43屆國際賽之技術規範



WorldSkills International, by a resolution of the Technical Committee and in accordance with the Constitution, the Standing Orders and the Competition Rules, has adopted the following minimum requirements for this skill for the WorldSkills Competition.

The Technical Description consists of the following:

1 INTRODUCTION .....	2
2 THE WORLDSKILLS STANDARDS SPECIFICATION (WSSS) .....	4
3 THE ASSESSMENT STRATEGY AND SPECIFICATION .....	9
4 THE MARKING SCHEME .....	10
5 THE TEST PROJECT .....	14
6 SKILL MANAGEMENT AND COMMUNICATION .....	18
7 SKILL-SPECIFIC SAFETY REQUIREMENTS .....	19
8 MATERIALS AND EQUIPMENT .....	20
9 VISITOR AND MEDIA ENGAGEMENT .....	22
10 SUSTAINABILITY .....	23

Effective 12.08.14

Stefan Praschl  
Chair Technical Committee

Michael Fung  
Vice Chair Technical Committee

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# 第43屆國際賽之配分範圍

SECTION	CRITERION	MARKS		
		Subjective	Objective	Total
<b>A</b>	System Analysis and Design (Use Case Diagram, Class Diagram, Sequence Diagram, State Diagram, Activity Diagram, Entity Relationship Diagram, Database Design, Object Design, Interface Design, and Security & Control Design)	0	20-35	20-35
<b>B</b>	Software Development (Database Construction and Programming) and Testing (Test Plan, Case & Data)	0	45-70	45-70
<b>C</b>	Development Standards (Naming Convention, File Management, Adherence to Style Guide, and Consistent User Interface)	0	3-5	3-5
<b>D</b>	System Documentation (Technical Documentation and User Documentation)	0	5	5
<b>E</b>	Presentation of Solution (PowerPoint Presentation)	5	0	5
<b>Total</b>		<b>5</b>	<b>95</b>	<b>100</b>

# 第43屆國際賽之技術規範

## Description of the associated work role(s) or occupation(s)

The rapid pace of globalization over the past decade has been largely driven by developments in Information and Communication Technology (ICT). IT specialists are increasingly in great demand in several areas, one of which is providing software solutions for business.

The development of software solutions to improve business productivity encompasses many different skills and disciplines. Key to these is an awareness of the fast changing nature of the industry and the ability to keep up with the rapid pace of change.

IT software solution professionals always work closely with clients to modify existing systems or create new systems. They may modify “off the shelf” software and integrate it into the existing systems. They often work as part of a team of software professionals responsible for the requirement specification, system analysis and design, construction, testing, training and implementation, as well as maintenance of a business software system.



# 第43屆國際賽之技術規範

## Description of the associated work role(s) or occupation(s)

The tasks performed by IT software solution professionals include but not limited to the following:

- Review current system and present ideas for improvement, including cost benefit analysis Analyses and specify user requirements.
- Produce detailed specifications.
- Develop software system for the required solution and test the software solution thoroughly.
- Prepare user training materials, train users, and present software solution to users.
- Install, implement and maintain the software system.

IT software solutions professionals can be employed in large, medium and small enterprises as software engineer, in consulting firms as consultant, and in software houses as contractor.

They can operate in a wide variety of roles including development role to tailor-make or customize software solutions, supporting role to operate system, business analyst role to provide solution to simplify and automate routine office and business activities, as well as training role to train user in using the application software

# 第43屆國際賽之技術規範

## WORLD SKILLS STANDARDS SPECIFICATION

SECTION		RELATIVE IMPORTANCE (%)
1	<b>Work organization and management</b>	5
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The individual needs to know and understand:</li> <li>• The principles and practices that enable productive team work</li> <li>• The principles and behaviour of systems</li> <li>• The aspects of systems that contribute to sustainable products, strategies and practices</li> <li>• How to take initiatives and be enterprising in order to identify, analyse and evaluate information from a variety of sources</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Plan each day's production schedule according to available time and take into account time limitations and deadlines</li> <li>• Use a computer or device and a range of software packages</li> <li>• Apply research techniques and skills to keep up-to-date with the latest industry guidelines</li> <li>• Review own performance against the expectations and needs of the client and organization</li> </ul>	

# 第43屆國際賽之技術規範

## 2 Communication and interpersonal skills

5

The individual needs to know and understand:

- The importance of listening skills
- The necessity of using discretion and confidentiality when dealing with clients
- The importance of resolving misunderstandings and conflicting demands
- The importance of establishing and maintaining customer and productive working relationships
- The value of written and oral communication skills

The individual shall be able to:

- Use literacy skills to:
  - Follow documented instructions from a supplied guide
  - Interpret workplace instructions and other technical documents
  - Keep up-to-date with latest industry guidelines
- Use oral communication skills to:
  - Discuss and offer suggestions regarding a system specification
  - Keep client updated regarding system progress
  - Negotiate with client regarding project budget and timeline
  - Gather and confirm client requirements
  - Present the proposed and final software solution
- Use written communications skills to:
  - Document a software system (e.g. technical document, user guide)
  - Keep client updated regarding system progress
  - Confirm that the created application meets the original specifications and obtain user sign-off for completed system
- Use team communication skills to:
  - Collaborate with others to develop the required outcomes
  - Work well in group problem solving
- Use project management skills to:
  - Prioritize and schedule tasks
  - Allocate resources to tasks



# 第43屆國際賽之技術規範

3	Problem solving, innovation and creativity	5
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The common types of problem which may occur within software development</li> <li>• The common types of problem which may occur within business organization</li> <li>• Diagnostic approaches to problem solving</li> <li>• Trends and developments in the industry including new platforms, languages, conventions, and technical skills</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Use analytical skills to: <ul style="list-style-type: none"> <li>• Synthesize complex or diverse information</li> <li>• Determine the functional and non-functional requirements of the specification</li> </ul> </li> <li>• Use investigation and learning skills to: <ul style="list-style-type: none"> <li>• Obtain user requirements (e.g. interviews, questionnaire, document search and analysis, joint application design, and observation)</li> <li>• Research encountered problems independently</li> </ul> </li> <li>• Use problem-solving skills to: <ul style="list-style-type: none"> <li>• Identify and resolve problems in a timely manner</li> <li>• Gather and analyse information skilfully</li> <li>• Develop alternatives for decision making, select the most appropriate alternative and produce the required solution</li> </ul> </li> </ul>	

# 第43屆國際賽之技術規範

4	Analysing and designing software solutions	30
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The importance of considering all possible options and deriving the best solution based on sound analytical judgment and the client's best interests</li> <li>• The importance of using system analysis and design methodologies (e.g. Unified Modelling Language, Model-View-Control (MVC) software framework, Design Patterns)</li> <li>• The need to be up to date with new technologies and make a judgment about the appropriateness of adopting them</li> <li>• The importance of optimization of system design with an emphasis on modularity and reusability</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Analyse systems using: <ul style="list-style-type: none"> <li>• Use case modelling and analysis (e.g. Use Case Diagram, Use Case Description, Actor Description, Use Case Package)</li> <li>• Structural modelling and analysis (e.g. Object, Class, Domain Class Diagram)</li> <li>• Dynamic modelling and analysis (e.g. Sequence Diagram, Collaboration Diagram, State Diagram, Activity Diagram)</li> <li>• Data modelling tools and techniques (e.g. Entity Relationship Diagram, Normalization, Data Dictionary)</li> </ul> </li> <li>• Design systems using: <ul style="list-style-type: none"> <li>• Class Diagram, Sequence Diagram, State Diagram, Activity Diagram</li> <li>• Object design and package</li> <li>• Relational or object database design</li> <li>• Human-computer interface design</li> <li>• Security and controls design</li> <li>• Multi-tier application design</li> </ul> </li> </ul>	

# 第43屆國際賽之技術規範

5	Developing software solutions	40
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The importance of considering all possible options and deriving the best solution to meet the user requirements and the client's best interests</li> <li>• The importance of using system development methodologies (e.g. object-oriented technology)</li> <li>• The importance of considering all normal and abnormal scenarios, and exception handlings</li> <li>• The importance of following standards (e.g. code convention, style guide, user interface designs, managing directories and files)</li> <li>• The importance of accurate and consistent version control</li> <li>• Using existing code as a basis for analysis and modifications</li> <li>• The importance of selecting the most appropriate development tool from those provided</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Use database management system to construct, store and manage the data for the required system (MySQL or SQL Server)</li> <li>• Use latest software development environments and tools to modify existing codes and write new codes of a client-server based software solution (.NET or Java)</li> <li>• Evaluate and integrate appropriate libraries and frameworks into the software solution</li> <li>• Build multi-tier applications</li> <li>• Construct a web enabled and/or mobile interface for client-server based system</li> </ul>	



# 第43屆國際賽之技術規範

6	Testing software solutions	10
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• Troubleshoot common software applications problems</li> <li>• The importance of thoroughly tested solutions</li> <li>• The importance of documenting testing</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Plan testing activities (e.g. unit testing, volume testing, integration testing and acceptance testing)</li> <li>• Design test cases with data and check results of test cases</li> <li>• Debug and handle errors</li> <li>• Report on the test process</li> </ul>	
7	Documenting software solutions	5
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The importance of thoroughly documenting developed solutions</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Produce professional quality: <ul style="list-style-type: none"> <li>• User documentation</li> <li>• Technical documentation</li> </ul> </li> </ul>	

# 43屆國際賽試題情境說明

主辦單位Marathon Skills每年在各國舉辦馬拉松路跑比賽，近幾年舉辦過之賽事：

2011年：英國York

2012年：越南河內

2013年：德國Leipzig

2014年：日本東京



2015年九月五日即將在巴西聖保羅(Brazil San Paul)舉辦  
主辦單位為方便人員及活動管理，委託各國選手根據需求  
描述進行2015 Marathon Skills管理系統之系統分析、資料庫  
及程式設計、專案簡報等。

**注意：**關於43屆國際賽試題之說明，旨在提供資訊以協助瞭解試題方向及難易度，作為選手培訓之參考。其中輔以描述之文字、數值、畫面、並不全然與原始試題相同。

# 資訊技術競賽時程安排

- 一、競賽時程：共計四天
- 二、包含Section 1~Section 8共八個設計模組（每天上、下午各一個Section），每個模組作答時間2.5小時（75分鐘後休息15分鐘，再繼續75分鐘）。
- 三、第三天上午**Section 5**，有一段的競賽內容選手也須用五分鐘的時間，根據事前公布的客戶詢問之問題，跟裁判說明目前系統設計的狀況。（佔總分4%）。
- 四、第三天上午**Section 5**，有一段的競賽內容是系統分析及對客戶展示開發進度。選手必須根據將最初的資料庫ERD、資料庫字典，依照新的系統需求進行擴展及更新。（佔總分6%）
- 五、第三天下午**Section 6**，有一段的競賽內容要求選手設計10組測試案例，必須根據提供的表單填寫完整，案例型態不可重複。（佔總分4%）
- 六、第四天**Section 8**使用75分鐘，由**選手設計專案簡報**，此份專案簡報不需上台說明，直接透過內容評分。（佔總分6%）



# 第43屆國際賽實際配分

	技能內容	配分
<b>A</b>	<b>System Analysis and Design</b> (Use Case Diagram, Class Diagram, Sequence Diagram, State Diagram, Activity Diagram, Entity Relationship Diagram, Database Design, Object Design, Interface Design, and Security & Control Design)	<b>34.0</b>
<b>B</b>	<b>Software Development</b> (Database Construction and Programming) and Testing (Test Plan, Case & Data)	<b>50.0</b>
<b>C</b>	<b>Development Standards</b> (Naming Convention, File Management, Adherence to Style Guide, and Consistent User Interface)	<b>5.0</b>
<b>D</b>	<b>System Documentation</b> (Technical Documentation and User Documentation)	<b>5.0</b>
<b>E</b>	<b>Presentation of Solution</b> (PowerPoint Presentation)	<b>6.0</b>
<b>Total</b>		<b>100.0</b>

By Day配分		By Section配分
<b>Day 1</b>	<b>17.0</b>	<b>Section 1: 8.5</b> <b>Section 2: 8.5</b>
<b>Day 2</b>	<b>19.5</b>	<b>Section 3: 9.5</b> <b>Section 4: 10.0</b>
<b>Day 3</b>	<b>35.5</b>	<b>Section 5: 20.5</b> <b>Section 6: 15.0</b>
<b>Day 4</b>	<b>28.0</b>	<b>Section 7: 22.0</b> <b>Section 8: 6.0</b>
<b>Total</b>	<b>100.0</b>	

## 43國際賽配分方式及各評分裁判分組

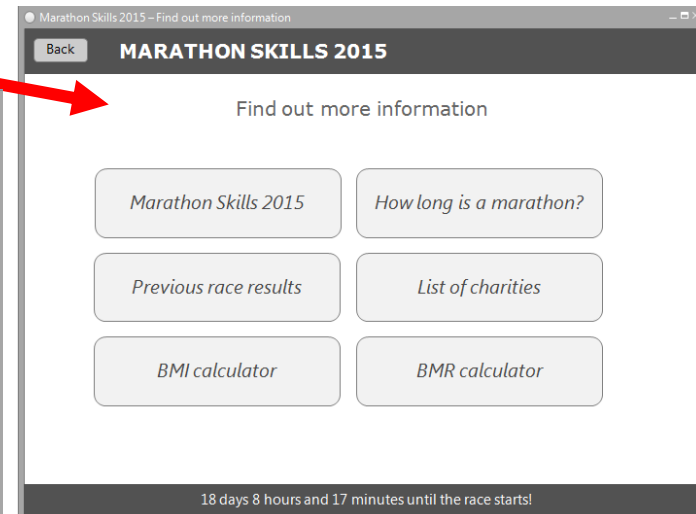
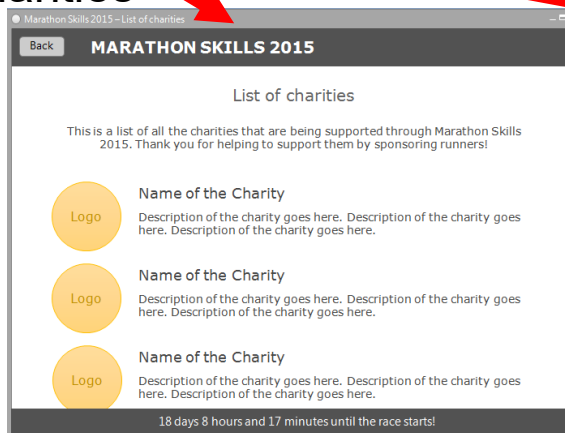
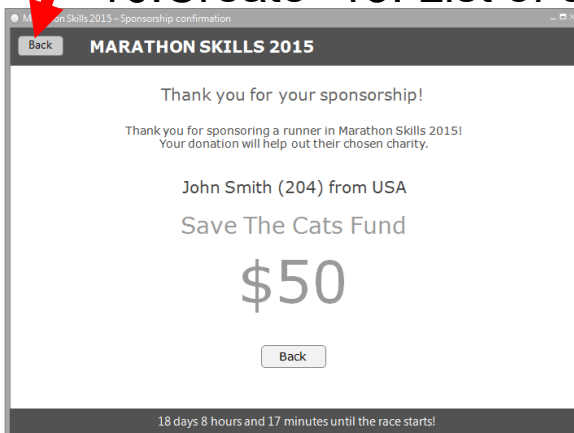
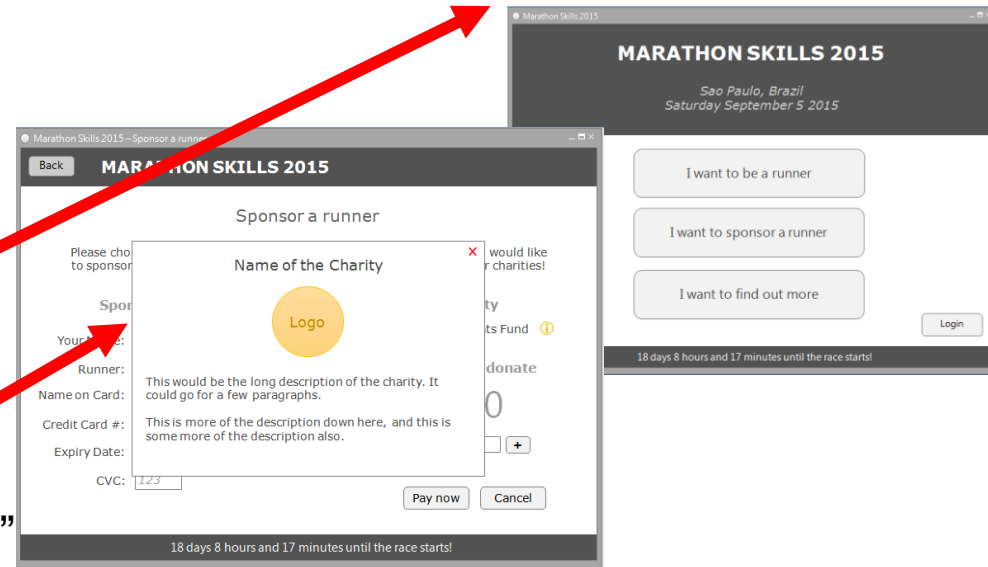
Section	配分	Group A	Group B	Group C	Group D
<b>S1</b> (8.5)	S1.1	3	3		
	S1.2	1	1		
	S1.3	2.5	2.5		
	S1.4	1.5	1.5		
	S1.5	0.5	0.5		
<b>S2</b> (8.5)	S2.1	3		3	
	S2.2	1		1	
	S2.3	1.5		1.5	
	S2.4	1		1	
	S2.5	1		1	
	S2.6	1		1	
<b>S3</b> (9.5)	S3.1	3			3
	S3.2	1		1	
	S3.3	1.5	1.5		
	S3.4	2			2
	S3.5	2			2
<b>S4</b> (10.0)	S4.1	3			3
	S4.2	1			1
	S4.3	2			2
	S4.4	1			1
	S4.5	1.5			1.5
	S4.6	1			1
	S4.7	0.5			0.5
<b>S5</b> (20.5)	S5.1	4		4	
	S5.2	6	6		
	S5.3	3	3		
	S5.4	3		3	
	S5.5	1		1	
	S5.6	1		1	
	S5.7	1		1	
	S5.8	1		1	
	S5.9	0.5		0.5	

Section	配分	Group A	Group B	Group C	Group D
<b>S6</b> (15.0)	S6.1	3			3
	S6.2	1			1
	S6.3	1			1
	S6.4	1			1
	S6.5	1			1
	S6.6	0.5			0.5
	S6.7	1.5			1.5
	S6.8	6			6
<b>S7</b> (22.0)	S7.1	3			3
	S7.2	1			1
	S7.3	0.5			0.5
	S7.4	1.5			1.5
	S7.5	1.5			1.5
	S7.6	1.5			1.5
	S7.7	4			4
	S7.8	1			1
	S7.9	3			3
	S7.10	1			1
	S7.11	3		3	
	S7.12	1		1	
<b>S8</b> (6.0)	S8.1	1	1		
	S8.2	5	5		
總分	總分	100	25	25	25

# C1 第一天上午 : (Session 1)

## •Session 1 – Day 1

1. Create the database
2. Import the tables & data
3. Create staff tables to specification
4. Import staff data
5. Create application
6. Create “1. Main screen”
7. Create “6. Sponsor a runner”
8. Create “7. Sponsorship confirmation”
9. Create “10. Find out more information”
10. Create “13. List of charities”

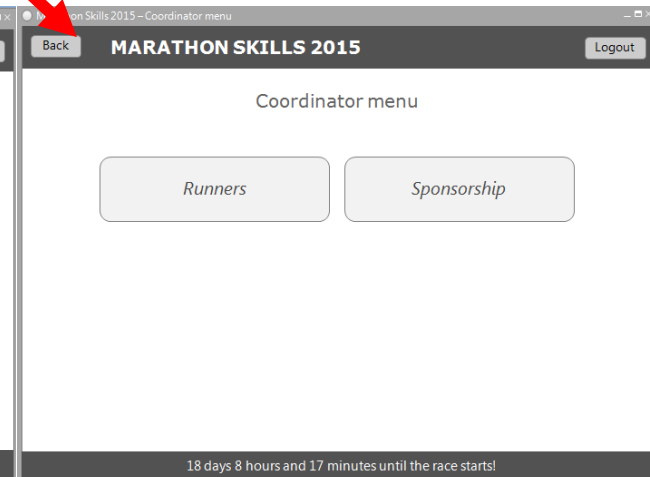
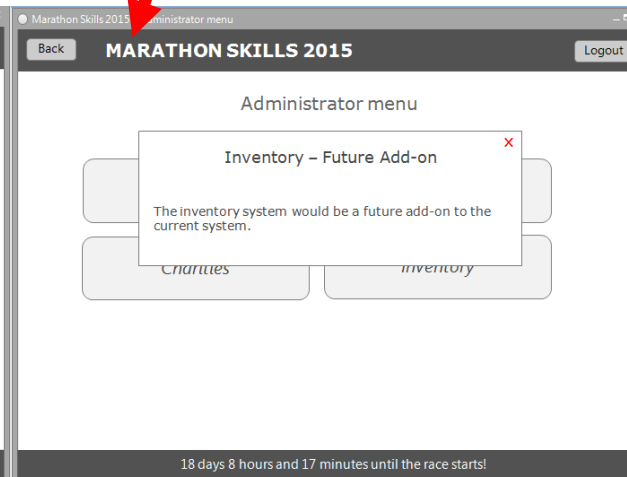
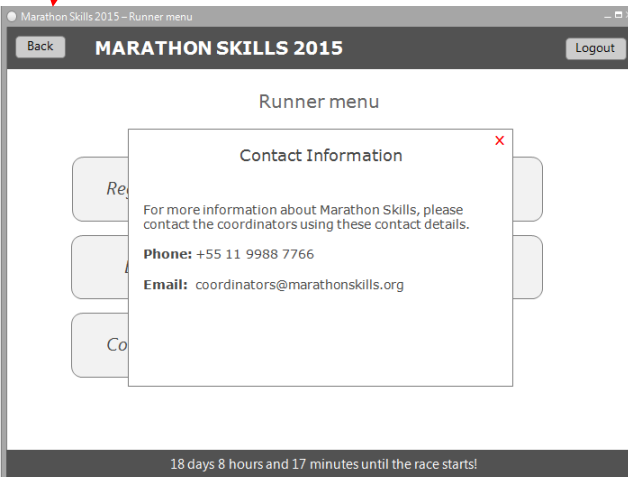
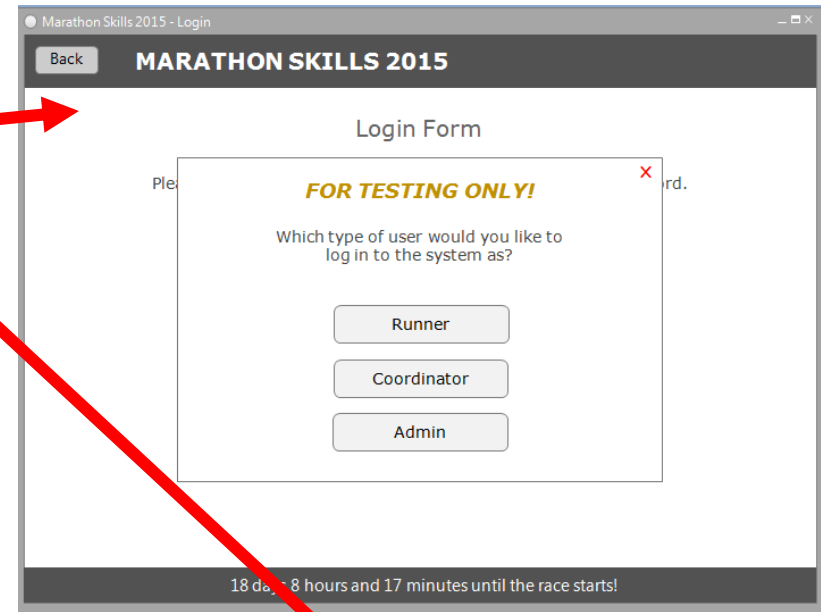




## C1 第一天下午 : (Session 2)

### •Session 2 – Day 1

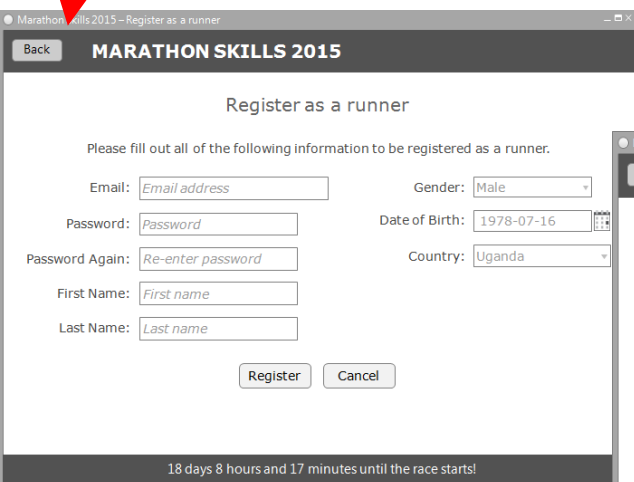
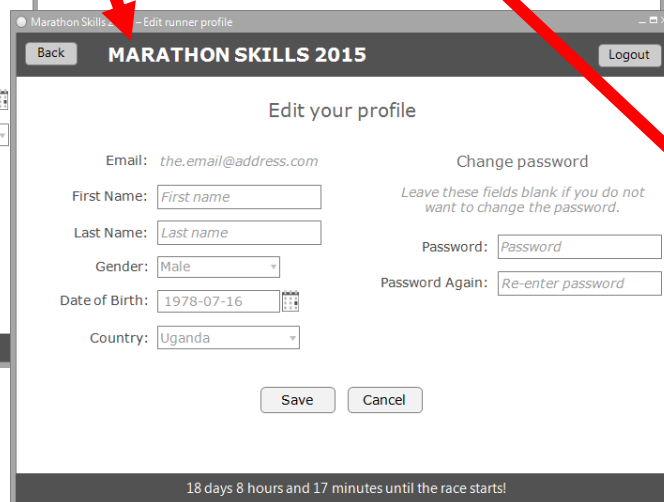
- 1.Create “3. Login screen”
- 2.Create “9. Runner menu”
- 3.Create “19. Coordinator menu”
- 4.Create “20. Administrator menu”
- 5.Create contact information pop-up in “9. Runner menu”

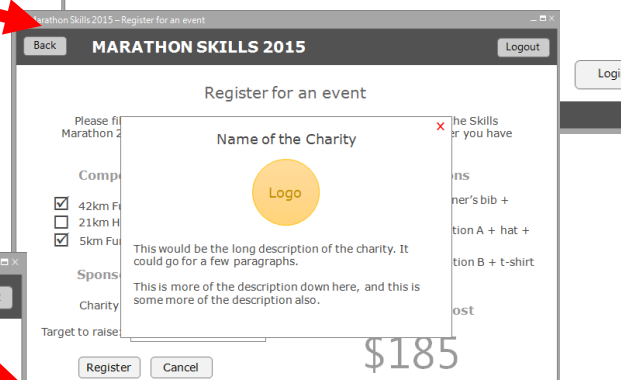


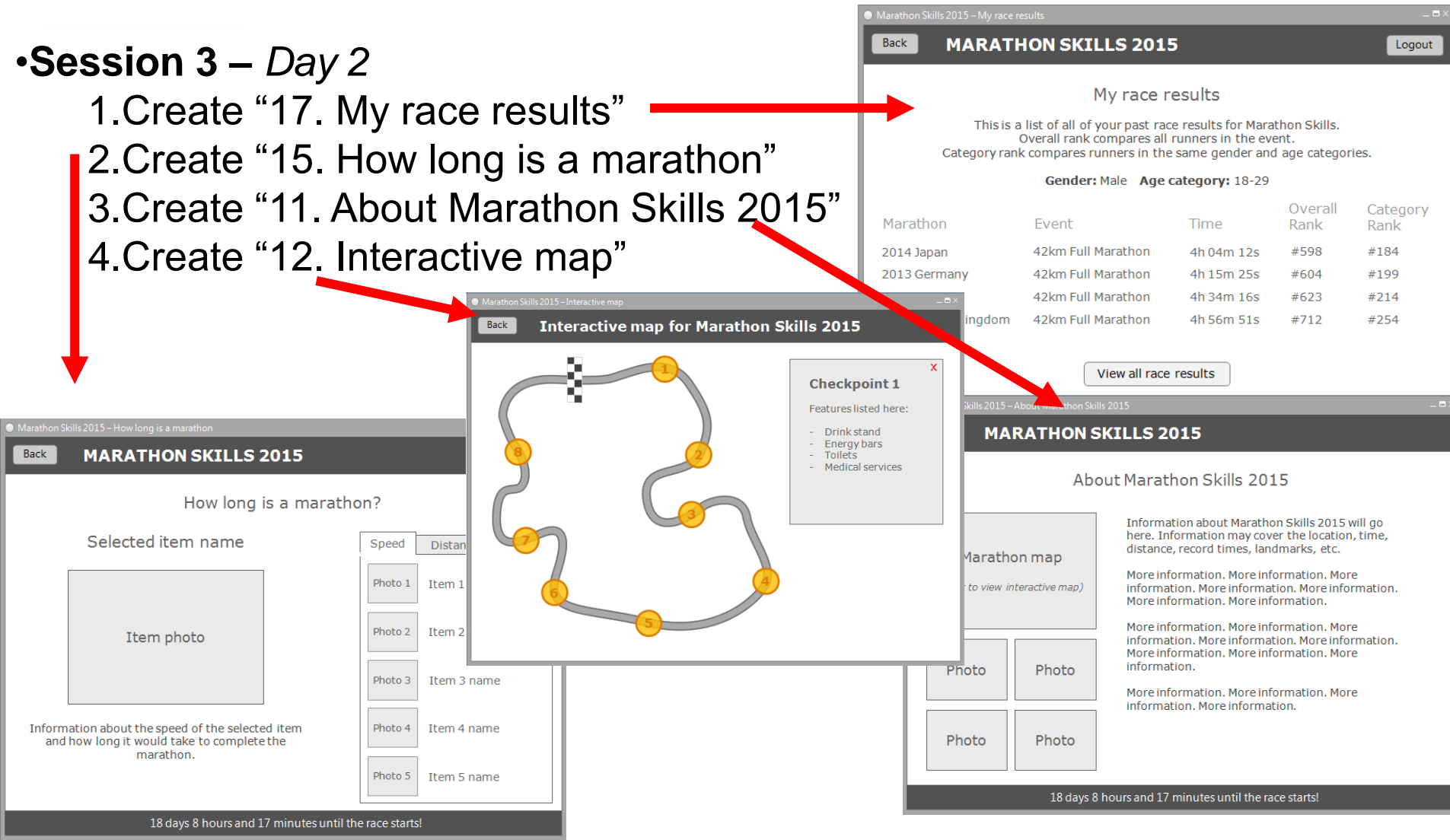
## C1 第一天下午 : (Session 2)

### • Session 2 – Day 1

1. Create “2. Check if runner has competed before”
2. Create “4. Runner registration”
3. Create “5. Register for an event”
4. Create “8. Runner registration confirmation”
5. Create “16. Edit your profile”





## C2第二天下午：(Session 4)

### •Session 4 – Day 2

- 1.Create “14. Previous race results”
- 2.Create “18. My sponsorship”
- 3.Create “22. Runner management”
- 4.Create export feature: runner details

Create export feature: runner email addresses

Marathon Skills 2015 – Previous race results

[Back](#) **MARATHON SKILLS 2015**

Previous race results

Marathon:  Gender:   
 Race event:  Age category:  [Search](#)

Total runners: 1234 Total runners finished: 1198 Average race time: 4h 02m 10s

Rank	Race time	Runner name	Country
1	2h 26m 27s	First Runner	ETH
2	2h 29m 23s	Second Runner	BRA

Marathon Skills 2015 – My sponsorship

[Back](#) **MARATHON SKILLS 2015** [Logout](#)

My sponsorship

This shows all the sponsorship you have received for Marathon Skills 2015.

Name of the Charity	Sponsor	Amount
 <p>This would be the long description of the charity. It could go for a few paragraphs.</p> <p>This is more of the description down here, and this is some more of the description also.</p>	Sponsor Name	\$50
	Sponsor Name	\$120
	Sponsor Name	\$180
	Sponsor Name	\$30
	Sponsor Name	\$300
		Total \$680

18 days 8 hours and 17 minutes until the race starts!

Marathon Skills 2015 – Runner management

[Back](#) **MARATHON SKILLS 2015** [Logout](#)

Runner management

Sort and filter

Status:   
 Race event:   
 Sort by:  [Refresh](#)

Export

[Runner details \(CSV\)](#)  
[Email address list](#)

Total runners: 123

First Name	Last Name	Email	Status	
First	Runner	first@runner.com	Payment confirmed	<a href="#">Edit</a>
Second	Runner	second@runner.com	Payment confirmed	<a href="#">Edit</a>
Third	Runner	third@runner.com	Payment confirmed	<a href="#">Edit</a>
Fourth	Runner	fourth@runner.com	Payment confirmed	<a href="#">Edit</a>
Fifth	Runner	fifth@runner.com	Payment confirmed	<a href="#">Edit</a>
Sixth	Runner	sixth@runner.com	Payment confirmed	<a href="#">Edit</a>

18 days 8 hours and 17 minutes until the race starts!

## C3第三天上午：(Session 5)

### •Session 5 – Day 3

1.Client interaction task

2.Database design task

#### BACKGROUND TO PROPOSED DATABASE

Marathon Skills 2016 will be held in New Zealand. The organisers are going to offer accommodation packages to runners and supporters. There will be a variety of options and your task is to design a database to help manage all of the accommodation options. Refer to the notes below about the requirements of the database.

#### THERE WILL BE DIFFERENT TYPES OF ACCOMMODATION:

- Hotel
- Apartment
- Homestay (This is when the guest will stay in the home of the owner. The owner will remain in the property at the same time.)
- Home lease (This is when the owner will vacate their own home and let the visitors rent it for a period of time.)
- Camping ground (The visitors may stay in tents that have been provided or they may just reserve camping site and bring their own tent.)

#### MARATHON SKILLS 2015 – MEETING AGENDA

##### Overview

This meeting agenda describes what will be covered in the “client interaction” meeting.

##### Agenda

	Item	Description
1	Introductions	Introductions between the programmer and the client.
2	Client asks about the use of the style guide	Question: “Can you please demonstrate how you have followed the style guide in your work so far?”
3	Client asks to have 1 feature demonstrated	Question: “Can you please demonstrate one feature that you have completed so far?”
4	Thank you and goodbye	Programmer and client thank each other and say goodbye.
5	Meeting finished	

#### INFORMATION THAT MAY BE STORED ABOUT EACH TYPE OF ACCOMMODATION:

- Number of bedrooms
- Number of bathrooms
- Star rating (unrated, 1, 2, 3, 4 or 5 stars)
- Is there a bath?
- Is breakfast included?
- Is parking available?
- Is there Wi-Fi?
- Is there cable TV?
- Are children permitted?
- Is there access for disabled visitors?
- Are pets permitted?
- Extras – e.g. swimming pool, sauna, spa, gym
- Anything else you think is relevant

## C3第三天上午：(Session 5)

### •Session 5 – Day 3

3.Create “23. Manage a runner”

4.Create “24. Edit runner profile”

5.Create “25. Certificate preview”

6.Create “21. Sponsorship overview”

Marathon Skills 2015 – Manage a runner

Back Logout

### MARATHON SKILLS 2015

#### Manage a runner

Email: the.email@address.com

First Name: First name

Last Name: Last name

Gender: Male

Date of Birth: 28<sup>th</sup> June 1967

Country: Germany


Charity: The Charity Name


Target to Raise: \$500


Race Kit Option: Option B


Race Events: Fun Run  
21km Half Marathon

Registration status

Registered 

Payment Confirmed 

Race Kit Sent 

Race Attended 

Preview certificate Edit profile

18 days 8 hours and 17 minutes until the race starts!

Marathon Skills 2015 – Edit runner profile

Back Logout

### MARATHON SKILLS 2015

#### Edit runner profile

Email: the.email@address.com

First Name: First name

Last Name: Last name

Gender: Male

Date of Birth: 1978-07-16

Country: Uganda

Change Password: Password: Password Again: Register

Payment confirmed

Save Cancel

18 days 8 hours and 17 minutes until the race starts!

Marathon Skills 2015 – Sponsorship overview


Back Logout

### MARATHON SKILLS 2015

#### Sponsorship overview

Sort by: Total Amount Sort

Charities: 10 Total Sponsorship: \$94,450

Logo	Charity Name	Total Amount
	Charity Name 7	\$21,080
	Charity Name 3	\$17,040
	Charity Name 4	\$11,900
	Charity Name 1	\$9,350

18 days 8 hours and 17 minutes until the race starts!

Marathon Skills 2015 – Certificate preview

Back Logout

### MARATHON SKILLS 2015

#### Certificate preview

Race event: 42km Full Marathon

Logo

Congratulations Firstname Lastname for running in the 42km Full Marathon.  
You ran a time of 4:13:45 and got a rank of 183<sup>rd</sup>!

## Certificate of Participation

in

### Marathon Skills 2014

Osaka, Japan

You also raised \$1,300 for Charity Name!



## C3第三天下午：(Session 6)

### •Session 6 – Day 3

1.Create “30. User management”

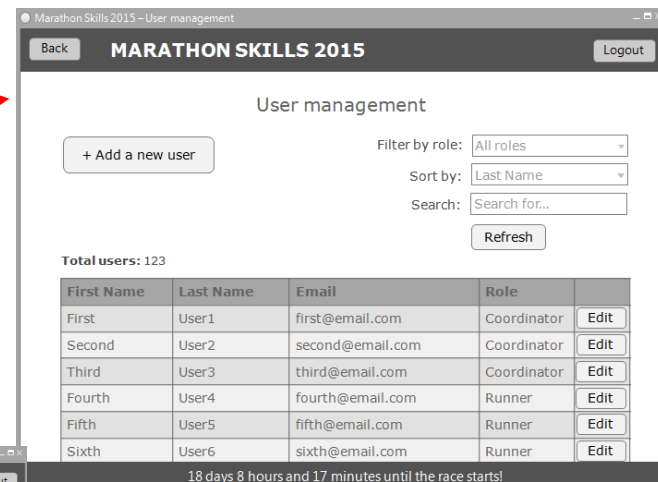
2.Create “31. Edit a user”

3.Create “32. Add a new user”

4.Create “26. Manage charities”

5.Create “27. Add/edit charity”

6.Create 10 test Cases



Back MARATHON SKILLS 2015 Logout

User management

+ Add a new user

Filter by role: All roles

Sort by: Last Name

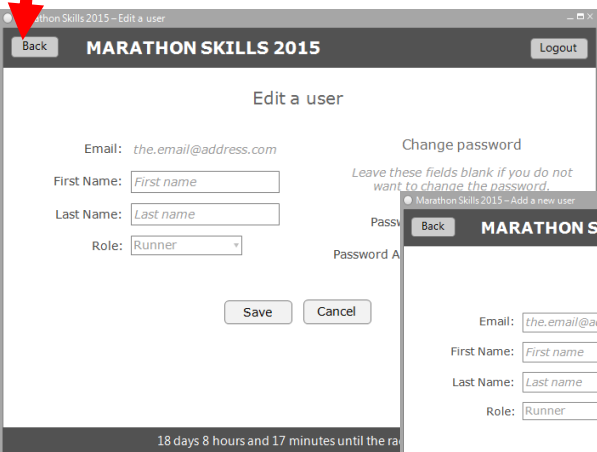
Search: Search for...

Refresh

Total users: 123

First Name	Last Name	Email	Role	
First	User1	first@email.com	Coordinator	Edit
Second	User2	second@email.com	Coordinator	Edit
Third	User3	third@email.com	Coordinator	Edit
Fourth	User4	fourth@email.com	Runner	Edit
Fifth	User5	fifth@email.com	Runner	Edit
Sixth	User6	sixth@email.com	Runner	Edit

18 days 8 hours and 17 minutes until the race starts!



Back MARATHON SKILLS 2015 Logout

Edit a user

Email: the.email@address.com

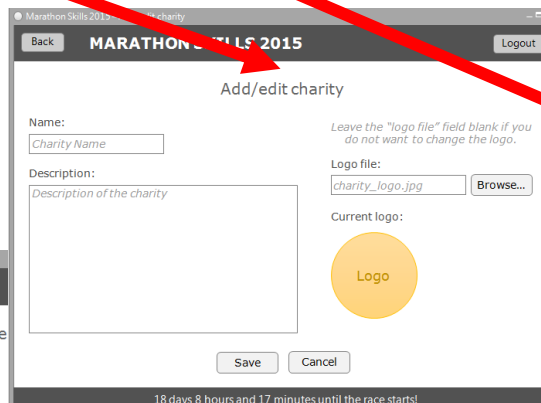
First Name: First name

Last Name: Last name

Role: Runner

Save Cancel

18 days 8 hours and 17 minutes until the race starts!



Back MARATHON SKILLS 2015 Logout

Add/edit charity

Name: Charity Name

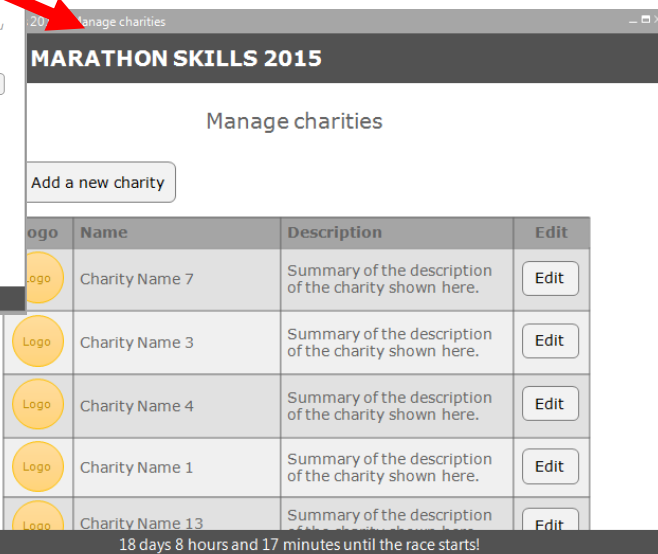
Description: Description of the charity

Logo file: charity\_logo.jpg Browse...

Current logo: Logo

Save Cancel

18 days 8 hours and 17 minutes until the race starts!



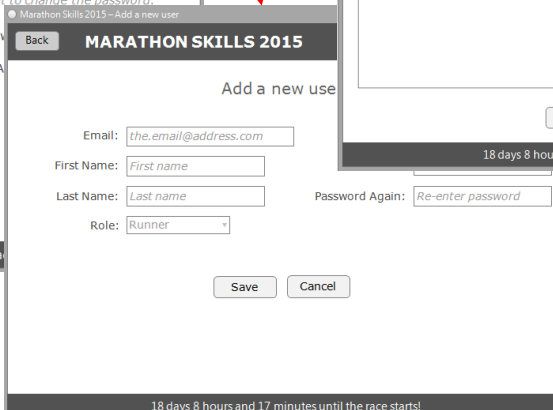
Back MARATHON SKILLS 2015 Logout

Manage charities

Add a new charity

Logo	Name	Description	Edit
Logo	Charity Name 7	Summary of the description of the charity shown here.	Edit
Logo	Charity Name 3	Summary of the description of the charity shown here.	Edit
Logo	Charity Name 4	Summary of the description of the charity shown here.	Edit
Logo	Charity Name 1	Summary of the description of the charity shown here.	Edit
Logo	Charity Name 13	Summary of the description of the charity shown here.	Edit

18 days 8 hours and 17 minutes until the race starts!



Back MARATHON SKILLS 2015 Logout

Add a new user

Email: the.email@address.com

First Name: First name

Last Name: Last name

Role: Runner

Save Cancel

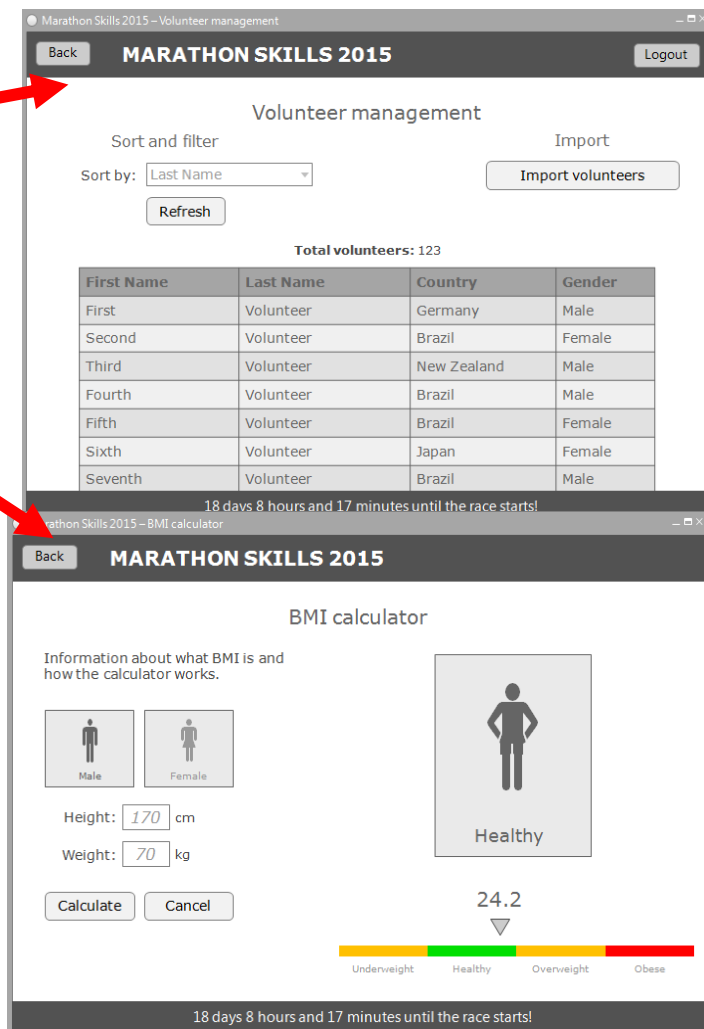
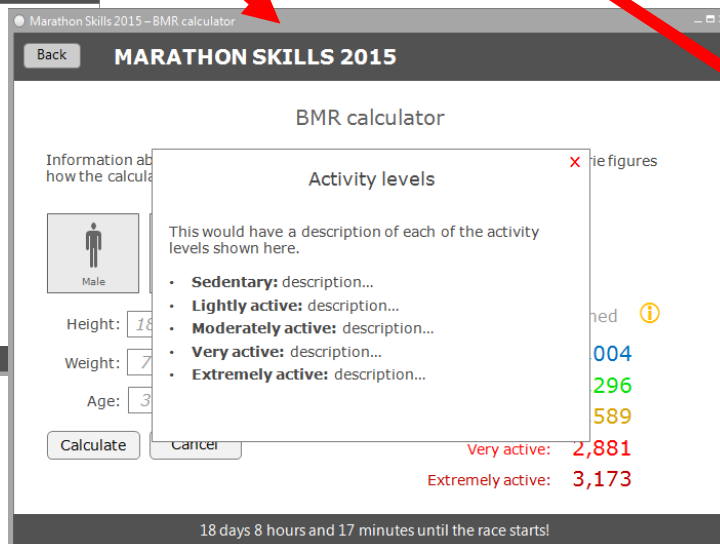
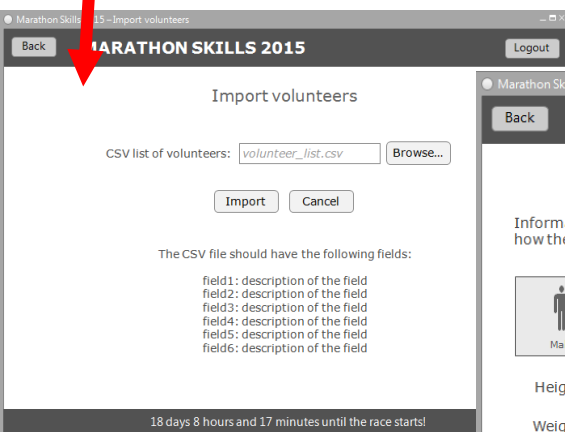
18 days 8 hours and 17 minutes until the race starts!



## C4第四天上下午：(Session 7&8)

### •Session 7 – Day 4

- 1.Create “28. Volunteer management”
- 2.Create “29. Import volunteers”
- 3.Create “33. BMI calculator”
- 4.Create “34. BMR calculator”



### •Session 8 – Day 4

- 1.Prepare PowerPoint presentation to showcase the system

# 第44屆全國技能競賽軟體工具

根據企業經營或商務活動所需之軟體設計需要，**界定客戶需求範圍，並進行系統分析、系統設計、系統開發、系統測試，以及系統上線等一連串軟體設計流程**，執行之任務包含：

- 一. 使用MS SQL，建立關聯式資料庫。
- 二. **使用MS Visio，解讀、編修或設計ER Diagram及UML Diagram。**
- 三. 使用Visual Studio之C#程式語言（.Net framework架構），設計各項系統程式、使用者操作介面，以及報表。
- 四. **使用MS Excel，進行資料驗證及前置處理、設計商業數據分析及圖表。**
- 五. **使用MS Word，設計測試案例及報告、廣宣文件及系統操作手冊。**
- 六. 使用MS PowerPoint，製作軟體設計專案說明簡報。

# 第44屆全國技能競賽職類範圍

## 競賽所需之專業知識及技能範圍包含：

- 一. 開發專案需求管理與系統規劃方法。
- 二. 系統分析與系統設計方法。
- 三. 軟體開發架構：單機架構（1-Tier）、主從式架構（2-Tier）、分散式架構（N-Tier）。
- 四. MS SQL關聯式資料庫設計與正規化（Normalization），包含SQL語法之撰寫、偵錯與應用。
- 五. 系統流程及使用者介面設計。
- 六. 異質及不同格式資料之讀取、輸入、匯入、偵錯、轉換及匯出。
- 七. 以C# 程式語言整合商業文件、表格、表單、圖表、合併列印等功能。
- 八. 以C# 程式語言整合資料分析與圖表之功能，進行資料處理及匯轉，或商業智慧分析。
- 九. 透過文字、圖形、圖表、母片、多媒體及動畫效果，設計商業多媒體簡報，並根據簡報對象及場合，設定不同的播放順序與展現方式。
- 十. 對公眾進行資訊系統介紹之商業簡報能力。

# 第44屆全國技能競賽主題

- 2017年在阿拉伯聯合大公國（UAE）阿布達比舉行之第44屆國際技能競賽，迄今暫未訂定明確的主題。
- 第44屆全國技能競賽一系列之分區賽、全國賽、國手選拔賽，主題亦將以「阿拉伯聯合大公國的文化、觀光旅遊、產業、石油、運輸」等方向，也會加入我國政府推動「生產力4.0」之相關議題，請提早培訓選手充實專業領域知識。



## 阿拉伯聯合大公國

位於中東的國家

阿拉伯聯合大公國，是由阿布達比、夏爾迦、杜拜、阿吉曼、富查伊拉、歐姆古溫、哈伊馬角七個酋長國組成的聯邦國。位於西南亞的阿拉伯半島東南部，與阿曼和沙烏地阿拉伯接壤。首都阿布達比，也是境內最大部族的領地，其國際代碼為UAE。 [維基百科](#)

首都：阿布達比





# 淘汰賽實施規劃

## 採用上機即測即評測驗 (60分鐘)

### 測驗題 (50%)

最多使用35Mins

- 軟體開發知識 (15%)
- SQL資料庫語法(10%)
- C#程式語言 (25%)

### 實作題 (50%)

- Word 2013 (15%)
- PowerPoint2013 (15%)
- Excel 2013 (20%)

測驗題提早作答完畢，剩餘之時間可加 到實作題使用

# 分區賽實施規劃

## 採用上機實作設計

6.0Hrs

### 科目名稱

### 設計軟體

- 1.0Hrs ■ 商用資料庫設計(20%)
- 3.0Hrs ■ 商用軟體設計 (50%)
- 1.0Hrs ■ 商業資料處理與分析 (15%)
- 1.0Hrs ■ 文件與簡報設計 (15%)

MS SQL 2014  
Visual Studio .net 2015 (C#) + MS SQL 2014  
Excel 2013  
Word 2013 + PowerPoint 2013

# 全國賽實施規劃

## 採用上機實作設計

18.5Hrs

### 科目名稱

### 設計軟體

4.0Hrs ■ 系統分析與資料庫設計(25%)

Visio 2013 + MS SQL 2014

7.0Hrs ■ 商用軟體設計 (50%)

Visual Studio .net 2105(C#) + MS SQL 2014

2.0Hrs ■ 商業資料處理與分析 (10%)

Excel 2013

4.0Hrs ■ 文件與簡報設計 (10%)

Word 2013 + PowerPoint2013

1.5Hrs ■ 英文輸入 (5%)

英文輸入評分軟體

# 選手強化及養成訓練建議

- 深化國手各項軟體操作及程式設計的熟練度與速度。
- 強化對於各軟體橫向連結度的技術。
- 英語閱讀速度與理解能力之提升。
- 把抽象的客戶需求，轉化成具體可行的系統架構，並設計出流暢的系統。
- 能根據需求設計出流暢的系統、整套的客戶文件範本、資料分析工具，以及多媒體簡報。
- 接受實際系統開發案之淬鍊，技術方能爐火純青。
- 須熟稔競賽主題專門領域之業務及系統運作流程。

以43屆國際賽主題【旅遊觀光】為例，除了**協同資訊技術部門主管進行資訊系統開發**之需求訪談、系統分析、系統設計、程式設計、系統測試、教育訓練等程序，藉以培育扎實的實務經驗。

安排國手參加**台北市旅遊商業同業公會之國際機票票務課程**、國際旅館訂房課程，並透過系統前後台的操作，瞭解使用者流程及介面設計方法。**參訪台北晶華酒店**，並與訂房管理、櫃檯接待、房務管理、訂餐管理、資訊管理、營運管理等相關部門訪談，補足國際級飯店經營管理的專業知識、系統操作流程與人機介面設計。參加台北市電腦公會舉辦之**使用者界面/使用者經驗設計（UI/UX Design）研討會及論壇**，強化專業設計的能力。



# 選手強化及養成學習資源

## 一、MOOCs 課程 學聯網 <http://www.sharecourse.net>



### 資料庫系統 Database Systems

課程編號：CS13001

課程時間：2015-09-03 - 2016-01-08

課程費用：免費

國立東華大學

楊維邦教授



### 2016資料結構導論 2016 Introduction to Data Structure

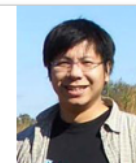
課程編號：CS01031

課程時間：2016-02-15 - 2016-04-10

課程費用：免費

國立清華大學

韓永楷教授



### 2015 程式設計導論 Introduction to Computer Progra.

課程編號：CS01024

課程時間：2015-09-14 - 2015-11-15

課程費用：免費

國立清華大學

陳煥宗教授



### 程式設計(三)

課程編號：CS32008

課程時間：2015-06-30 - 2015-07-31

課程費用：免費

靜宜大學

劉國有 副教授



## 選手強化及養成學習資源

### 二、TQC+ 實力提升參考書籍



### 三、歷屆考題：工科技藝競賽 電腦軟體設計

全國技能競賽 資訊技術分區賽、全國賽

## 競賽重要時程

- 4/22(五)~4/23(六)：分區賽
- 8/09(二)~8/13(六)：全國賽及國手第一階段選拔
- 10/14(五)~10/16(日)：國手第二階段選拔
- 2017年10/14(六)~10/19(四)：44屆國際賽

# You are the Champion



50 SKILL COMPETITIONS  
MORE THAN 1,200 COMPETITORS  
72 WORLDSKILLS COUNTRIES AND REGIONS  
THOUSANDS OF VISITORS

