

第 53 屆全國技能競賽
暨第 2 屆亞洲技能競賽國手選拔賽
青少年組



商務軟體設計職類
競賽試題及評分彙總表

競賽及評分項目

☒ 商務軟體設計

選 手 編 號：_____

抽籤崗位號碼：_____

選 手 姓 名：_____

總 分：_____

評 分 裁 判：_____

Theme of the competition:

The 2nd Asian Skills Competition will be held in Abu Dhabi in December 2023, and the 47th International Skills Competition will be held in Lyon, France. Therefore, the theme of the competition is "Exhibition of the Louvre Museum in France".



Scenario description:

The contestant works in a multinational software design consulting company, and recently accepted a custom design project commissioned by the Louvre Museum (Musée du Louvre), and needs to use the following tools to design and develop the specified database and system:

1. Graphic drawing software (Visio 2021) and database (SQL Server 2022) software are required for system analysis, data collection, and SQL database design.
2. It is necessary to use programming software (Visual Studio 2022 C#) with a database (SQL Server 2022) to develop the operation process and interface, main functions, management background and reports of the specified system according to the topic. If necessary, it must be expanded during system design database table.

第一題：請繪製 UML 圖之使用案例圖(use case diagram)

1.系統設計

- 主題：羅浮宮展覽報名系統(Louvre Exhibition Registration System)

2.系統角色

- 管理者(administrator)：可以編輯管理所有展覽主題、館內基本資料、館員資料、所有報名資料及系統相關安全紀錄...等。
- 館長(curator)：可以管理自己所屬展館之展覽主題、查閱已經完成報名之遊客資料、查詢營業額報表並匯出檔案等。
- 導覽員(tour guide)：可以查閱自己今日要服務導覽的參觀者、反饋意見等。
- 遊客(tourists)：可以查閱各項展覽主題、建議的參觀行程、上網購票、線上付款、使用電子票證及參觀反饋意見等。

3.使用軟體及說明

- 軟體：Visio 2021
- 依據 Use case 之必要項目進行繪製，包含角色(Actor)、系統邊界(System Boundary)、各角色(Actor)與案例間之關聯(Association)及 Include、Extend 描述等。

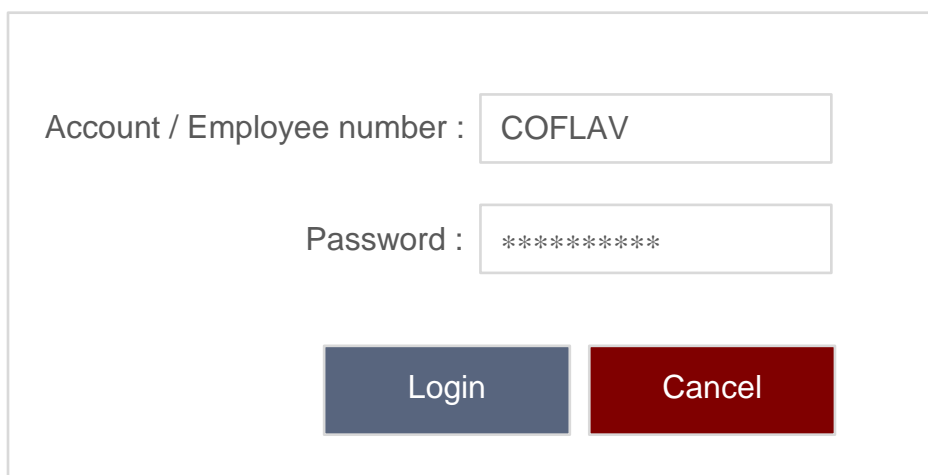
4.檔案儲存為Visio檔，檔名為1-UseCaseDiagram.vsd，錯誤檔名扣1分。

5.評分項目：

項	目	配分	得分
(1) 角色(Actor)是否正確？		4	
(2) 系統邊界(System Boundary)是否正確？		2	
(3) 遊客角色(Actor)與案例間之關聯(Association)是否合理？		6	
(4) 非遊客之各角色(Actor)與案例間之關聯(Association)是否合理？		6	
(5) Include、Extend 進行描述是否正確？		2	
總	分	20	

第二題：Login/logout function

1. Please create a new database and named as 'J09_LouvreAns_ **NUM**-2' (**NUM**請修改為你的崗位座號).
2. Modify and execute the 'CreateAccountData.sql' to complete the construction the account table, and import the 'AccountData.csv' file into the account table.
Note: Please modify the CreateAccountData.sql code, and change the **NUM** of the content 'J09_LouvreAns_ **NUM**-2' to your position seat number.
3. Create a new Windows Forms application project (.NET Framework) and named as "Lourve".
4. Refer to the content of the account table in the SQL database for verification, and create a system login interface(2.1Login). The account login method allows verification through 'account/employee number' and 'password'. The interface should be like the one shown in the figure below, and the password input box should not display plaintext.

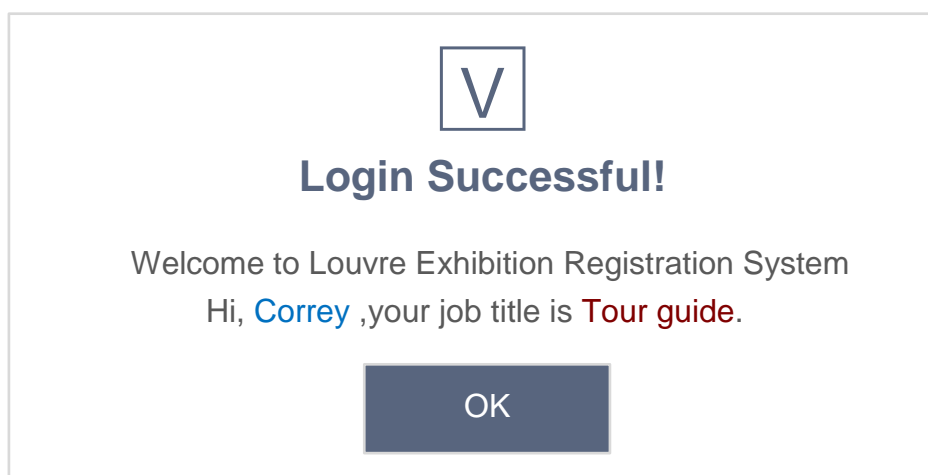


Account / Employee number : COFLAV

Password : *****

Login Cancel

5. Display the login success screen:



V

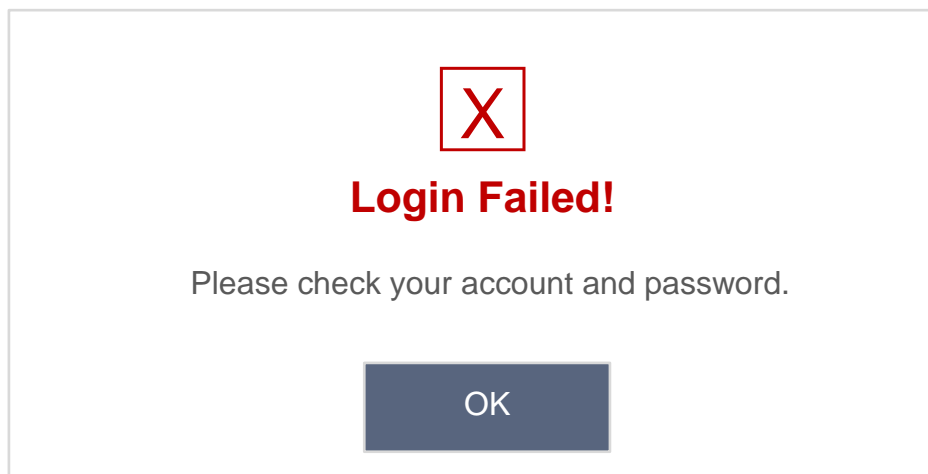
Login Successful!

Welcome to Louvre Exhibition Registration System

Hi, Correy ,your job title is Tour guide.

OK

6. Display the login failure screen:



7. Back up the database and named as 'J09_LouvreAns_ **NUM**-2.bak', and upload the file to the Answer folder. (**NUM** is your position number)

8. Using software : Visual Studio 2022, MS SQL 2022 and Excel.

9. Marking Items :

Items	Points	Marking
(1) Create a new database and windows form. Those named correctly?	2	
(2) Modify script and create AccountData table correctly?	2	
(3) Import csv files into the account table correctly?	3	
(4) Refer to the content of the account table in the SQL database correctly?	2	
(5) Login method allows verification through 'account/employee number' and 'password' correctly?	4	
(6) The password input box should not display plaintext correctly?	2	
(7) Display the login success screen correctly?	3	
(8) Display the login failure screen correctly?	1	
(9) Back up the database and name it correctly?	1	
Total points	20	

第三題：Feedback function

1. Regardless of whether you are logged in or not, you can use the anonymous feedback function to improve the experience of using the system and store the content of the opinion in the database Comments table.
2. Provide a text box to enter comments and a satisfaction rating and named form as '3.1Rating':

Please input comments and give satisfaction rating for us:

Satisfaction rating : ★★☆☆☆

Submit

- The text box allows the input of multiple lines of text, and the maximum number of characters is 500 characters.
 - Satisfaction must be represented by five ☆ / ★. After clicking a ☆ / ★ symbol with the mouse, change the left side (including the clicked symbol) to ★; change the right side to ☆.
 - The preset number of ★ is 3 when the screen is displayed.
3. After logging into the system, the tour guide can view the feedback provided by the visitors and named form as '3.2List'.

Comment List:

ID	Comment contents	rating	datetime
1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	3	2023/4/28 14:02:05
2	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	4	2023/4/29 15:11:41
3	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	2	2023/4/29 15:13:48
....

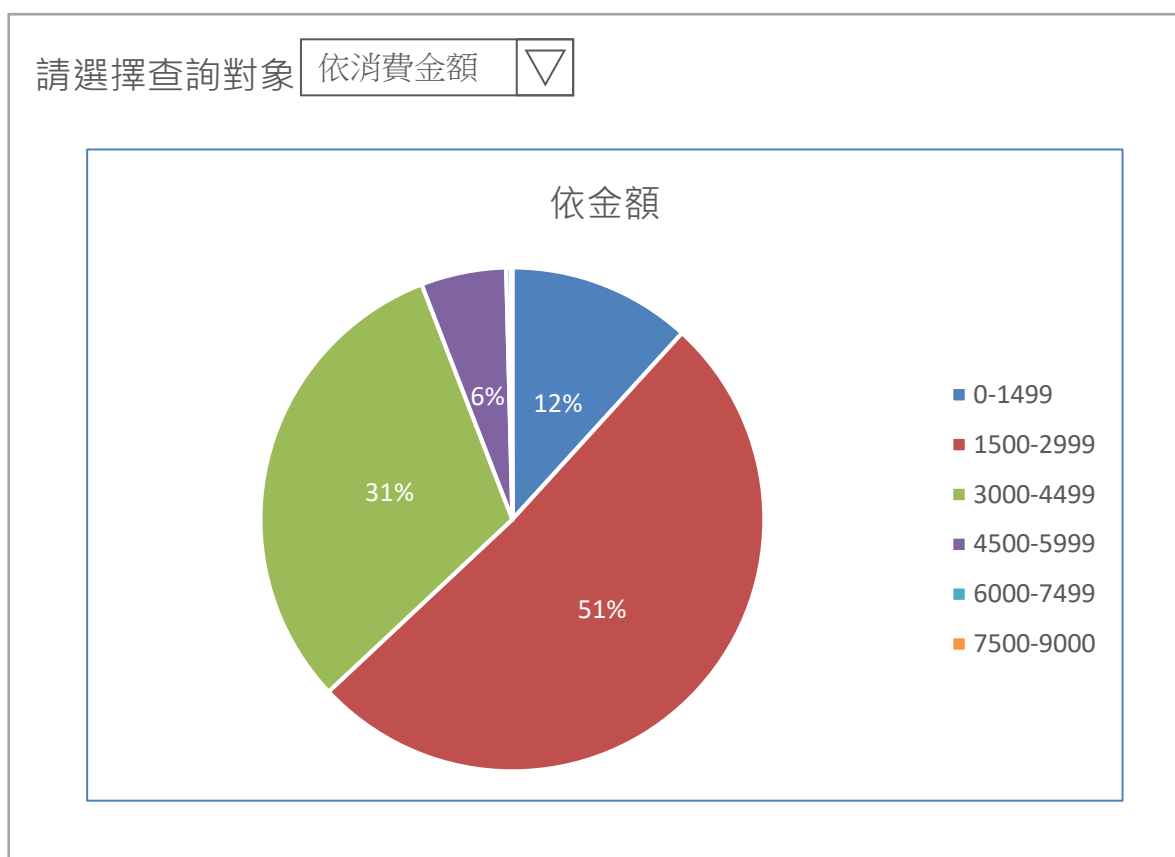
OK

4. The code needs to write code comments.
5. Each object and parameter naming convention must be meaningful.
6. Back up the database and named as 'J09_LouvreAns_ **NUM**-3.bak', and upload the file to the Answer folder. (**NUM** is your position number)
7. Using software : Visual Studio 2022 and MS SQL 2022.
8. Marking Items :

Items	Points	Marking
(1) Create a new database and named correctly?	3	
(2) Provide a text box to enter comments and store them in the database Comments table correctly?	4	
(3) The maximum word limit for comments is 500 characters correctly?	2	
(4) The satisfaction rating is displayed correctly?	5	
(5) The preset number of ★ is 3 when the screen is displayed correctly?	2	
(6) The tour guide access could view visitor feedback correctly?	3	
(7) The comment list is displayed correctly?	4	
(8) The code needs to write code comments.	2	
(9) Each object, parameter, and window form naming convention must be meaningful correctly?	4	
(10) Back up the database and name it correctly?	1	
Total points	30	

第四題(30%)：報表分析

1. 請自行新建SQL資料庫，名稱請命名J09_LouvreReportAns。
2. 已提供2個文字資料檔，分別為顧客基本資料(AccountImport.txt)及消費資料(ConsumerDetails.txt)，請建置相對應的SQL資料表、欄位名稱、欄位屬性、主鍵值設定，並匯入資料。
3. 請分析顧客帳號及消費明細等紀錄，並繪製下列3種圓形比例圖，表單命名為"4.1Query"：
 - 依年齡(age)分析占比($\leq 20 \sim >70$ ，以10為間隔單位)
 - 依語言(language)分析占比
 - 依Account之消費金額(amount)統計進行分析占比(0~9,000，以1,500為間隔單位)



職類名稱：J09 商務軟體設計

4. 請以程式計算並列出下面結果，表單命名為"4.2Analysis"：
- 未消費之Account帳號ID
 - 消費筆數最多之前3名之Account帳號ID及筆數(若排名相同者皆列出)
 - 消費金額最多之前3名之Account帳號ID及金額(若排名相同者皆列出)
5. 使用軟體：Visual Studio 2022、MS SQL 2022、Excel或記事本等。
6. 請將資料庫備份為J09_LouvreReportAns.bak並回傳至伺服器。
7. 評分項目：

項	目	配分	得分
(1) 建置資料庫是否正確？		2	
(2) 建置相對應的 SQL 資料表、欄位名稱、欄位屬性、主鍵值設定，並匯入資料是否正確？(每項 1 分)		4	
(3) 繪製圓形比例圖： 依年齡(age)分析占比($\leq 20 \sim >70$ ，以 10 為間隔單位)		3	
(4) 依語言(language)分析占比		4	
(5) 依 Account 之消費金額(amount)統計進行分析占比 (0~9,000，以 1,500 為間隔單位)		6	
(6) 請以程式計算並列出下面結果： 列出以下統計資訊列：未消費之 Account 帳號 ID		3	
(7) 列出以下統計資訊列：消費筆數最多之前3名之Account 帳號ID及筆數(若排名相同者皆列出)		5	
(8) 列出以下統計資訊列：消費金額最多之前3名之Account 帳號ID及金額(若排名相同者皆列出)		3	
總	分	30	