

第 48 屆全國技能競賽暨
第 45 屆國際技能競賽國手選拔賽



資訊技術（軟體設計）職類
競賽試題及評分彙總表

競賽及評分項目

<input type="checkbox"/> 系統分析與資料庫設計	<input checked="" type="checkbox"/> 商用軟體設計一	<input type="checkbox"/> 商用軟體設計二
<input type="checkbox"/> 商業資料處理與分析	<input type="checkbox"/> 文件與簡報設計	<input type="checkbox"/> 商業資料建置

選 手 編 號：_____

抽籤崗位號碼：_____

選 手 姓 名：_____

總 分：_____

評 分 老 師：_____

Session 2

Stage 1 system processes, user interface and function design for “IIHF 2018 Competition System”

According to your systems analysis and database design results in session 1, as well as MS SQL database “*IceHockey_2018_Online.bak*” provided by this session.

Please use Visual Studio 2015 C # design tools with MS SQL 2014 database “*IceHockey_2018_***NM***.Bak*” (**NM**: Your Workstation Number), according to Stage 1 task descriptions to design a Client-Server desktop application, including system processes, user interface and detail functions.

Following diagram is the several user account groups and their related authority descriptions for this system.

No. ▾	Account ▾	Authority
A	Guest	Query various functions.
B	Team Administrator	Edit the basic information of your team and players.
C	Field Recorder	Record the results of the matches and related records at the scene.
D	Record Analyst	Production statistics, rankings and other analytical statements.
E	General staff	Make the latest news and schedules.
F	Administrator	All functions are manageable.

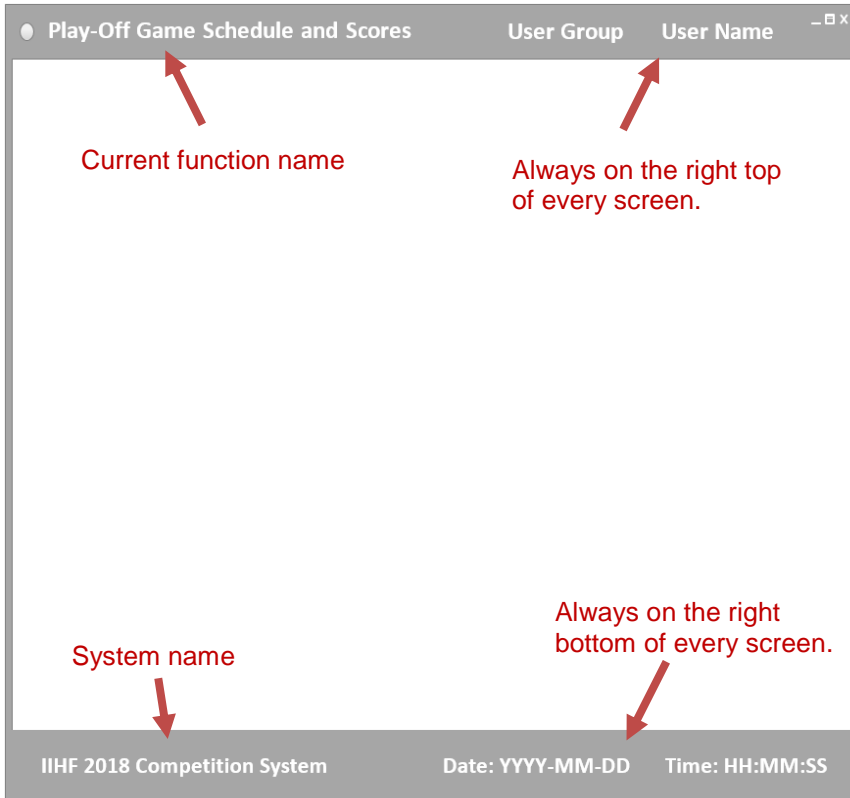
User interface must contain at least the following requirement lists:

Precautions:

1. It is strongly recommended to refer provided MS SQL database “\SoftwareDesign1\Data\IceHockey_2018_OnLine.bak” to design your user interface, including tables, fields, and data records.
2. Refer to the data file “DatabaseDesign\Data\2018-IceHockey.xlsx” to design user interfaces and system functions.
3. IIHF organizer provide “UI_color_style.Docx” and some image files inside the folder “\SoftwareDesign1\Data” for your design work. Using IIHF 2018 Logo, UI color and style need to match with them.
4. Different user permissions can use the same user interface, but for data browsing, searching (querying), setting, deleting and other permissions, there will be the difference.
5. To facilitate the management of all user interface, it is recommended to each user interface is numbered on caption.
6. In order to manage and maintain those user interfaces, naming of objects on forms and user interfaces must be easy to interpret.

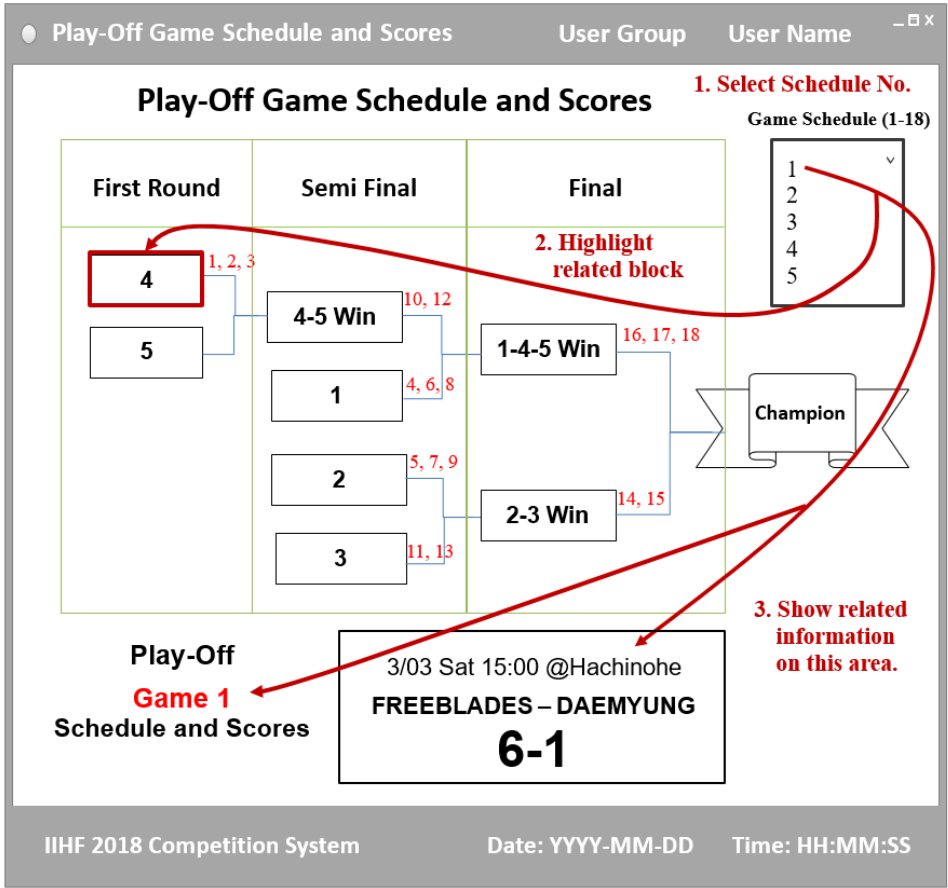
7. While you design detail processes and functions of user interface, you need to consider about usability for mouse and keyboard operation, anti-mistake, navigation hints, and so on.
8. You could modify or create new data table accompanied with your system designing task.
9. You will get more score if all the user interfaces design is completely and friendly.
10. Save your Visual Studio 2015 C # designed project name as “***IIHF_2018_Competition***”.
11. Please write a “***Readme.txt***” to indicate the path and file name of your newest executive file (*.exe).

Note: Deduct 2 if file name is mistake.

Software Design Stage1 Task Descriptions		Max Score	Actual Score
(1)	<p>Data Importing</p> <p>Import data of worksheet “Schedule”, “Game of Results” of “2018-IceHockey.xlsx” into SQL Server database on related data field.</p> <p>Create necessary data if provided data is lack.</p>	2	
(2)	<p>Design on “Main screen“ user interface for “IIHF 2018 Competition System” is completely and friendly.</p> <p>Special request for every screen, including:</p>  <ul style="list-style-type: none"> ● System name, and Logo. ● Information of current user and user group. ● Information of current date and time. ● Object linking to “News”. ● Object linking to “Schedule”. ● Object linking to “Teams”. ● Object linking to “Players”. ● Object linking to “Reports”. ● Object linking to “Management”. ● Object linking to “Login”. <p>Deduct 0.25 on each mismatch or mistake for every above-mentioned function.</p>	4	

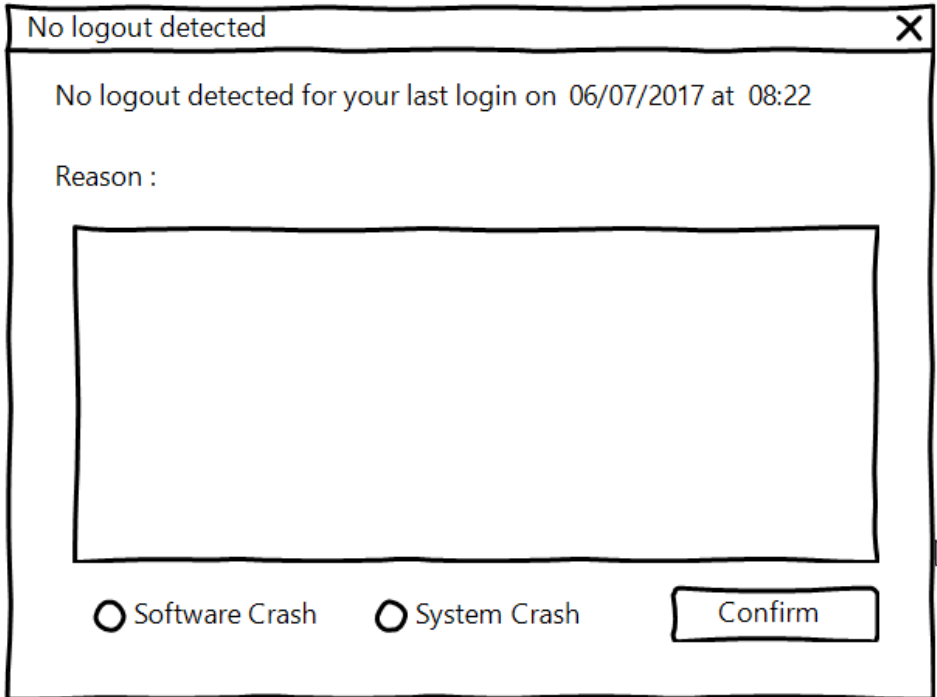
Software Design Stage1 Task Descriptions		Max Score	Actual Score
(3)	<p>Guest: UI design of “News”</p> <p>Design on “News“ user interfaces are completely and friendly. (can be more than one)</p> <p>It's requested to show related Fields, including: Title, Content, and Attachment File for each News.</p> <p>Deduct 0.5 on each mismatch or mistake.</p>	2	
(4)	<p>Guest: Function design of “News”</p> <p>Design on object detail functions and event driven connection of "News" are completely and friendly.</p> <p>User don't need to login to system, they can:</p> <ul style="list-style-type: none"> ● Search and Browse “News“ by keywords. ● Sorting “News“ by each Fields. <p>Deduct 0.5 on each mismatch or mistake for every above-mentioned function.</p>	2	
(5)	<p>Guest: UI and Function design of “Schedule”</p> <p>UI design and object detail functions and event driven connection of "Schedule" are completely and friendly.</p> <p>User don't need to login to system, they can link to related function:</p> <ul style="list-style-type: none"> ● Search and Browse “Seasons“. ● Search and Browse “Play-Off First Round“. ● Search and Browse “Play-Off Semi Final“. ● Search and Browse “Play-Off Final“. <p>Deduct 0.5 on each mismatch or mistake for every above-mentioned function.</p>	2	
(6)	<p>Guest: Function design for Search and Browse “Seasons“</p> <p>Design on object detail functions and event driven connection are completely and friendly.</p> <p>User don't need to login to system, they can:</p> <ul style="list-style-type: none"> ● Search and Browse “Seasons“ results: 112 games for September, October, November, and December. ● User can filter on specific team and to view their game results. ● Show detail information: date, day of the week, time, name of home team and away team, score, place, etc. <p>Deduct 0.5 on each mismatch or mistake for every above-mentioned function.</p>	6	

Software Design Stage1 Task Descriptions								Max Score	Actual Score																																																																																																																																																																																										
7	<div>UI and Function design for Statistics of “Seasons“</div> <div>Design UI and detail functions and event driven connection are completely and friendly.</div> <div><div><div>● According to calculation rule to calculate and rank “Seasons“ 112 games results. Show detail information: rank, team name, win games, draw games, loss games, total scores, total loss scores, total points. (6)</div><div><div>Calculation rule(Total points):</div><div>Win: 3 Points, Draw: 1 Point, Lose: 0 Point</div><div>Sort 1: Higher points get better ranking.</div><div>Sort 2: Higher win games get better ranking if same points.</div><div>Sort 3: Higher total scores get better ranking if same win games.</div></div><div>● User could print out or save as a PDF file for above statistics results of “Seasons“. (1)</div><div>● After calculated statistics results of “Seasons“, please refer following table and write data of top five of “Seasons” into the database of “Play-Off First Round” and “Play-Off Semi Final”. (3)</div></div></div>							10																																																																																																																																																																																											
	<table><tr><th colspan="8">Play-off First Round</th></tr><tr><th>Month</th><th>Day</th><th>Week</th><th>Game No.</th><th colspan="3">Game</th><th>City</th><th>Time</th></tr><tr><td rowspan="3">3</td><td>3</td><td>Sat</td><td>1</td><td>RL 4th</td><td>:</td><td>RL 5th</td><td>1</td><td>Better Rank Home -</td></tr><tr><td>4</td><td>Sun</td><td>2</td><td>RL 4th</td><td>:</td><td>RL 5th</td><td>2</td><td>Better Rank Home -</td></tr><tr><td>6</td><td>Tue</td><td>3</td><td>RL 4th</td><td>:</td><td>RL 5th</td><td>3</td><td>Better Rank Home -</td></tr><tr><th colspan="8">Play-off Semi Final</th></tr><tr><th>Month</th><th>Day</th><th>Week</th><th>Game No.</th><th colspan="3">Game</th><th>City</th><th>Time</th></tr><tr><td rowspan="10">3</td><td rowspan="2">10</td><td rowspan="2">Sat</td><td>4</td><td>RL 1st</td><td>:</td><td>RL 4-5Winner</td><td>1</td><td>Better Rank Home -</td></tr><tr><td>5</td><td>RL 2nd</td><td>:</td><td>RL 3rd</td><td>1</td><td>Better Rank Home -</td></tr><tr><td rowspan="2">11</td><td rowspan="2">Sun</td><td>6</td><td>RL 1st</td><td>:</td><td>RL 4-5Winner</td><td>2</td><td>Better Rank Home -</td></tr><tr><td>7</td><td>RL 2nd</td><td>:</td><td>RL 3rd</td><td>2</td><td>Better Rank Home -</td></tr><tr><td rowspan="2">13</td><td rowspan="2">Tue</td><td>8</td><td>RL 1st</td><td>:</td><td>RL 4-5Winner</td><td>3</td><td>Better Rank Home -</td></tr><tr><td>9</td><td>RL 2nd</td><td>:</td><td>RL 3rd</td><td>3</td><td>Better Rank Home -</td></tr><tr><td rowspan="2">17</td><td rowspan="2">Sat</td><td>10</td><td>RL 4-5Winner</td><td>:</td><td>RL 1st</td><td>4</td><td>Poorer Rank Home -</td></tr><tr><td>11</td><td>RL 3rd</td><td>:</td><td>RL 2nd</td><td>4</td><td>Poorer Rank Home -</td></tr><tr><td rowspan="2">18</td><td rowspan="2">Sun</td><td>12</td><td>RL 4-5Winner</td><td>:</td><td>RL 1st</td><td>5</td><td>Poorer Rank Home -</td></tr><tr><td>13</td><td>RL 3rd</td><td>:</td><td>RL 2nd</td><td>5</td><td>Poorer Rank Home -</td></tr><tr><th colspan="8">Play-off Final</th></tr><tr><th>Month</th><th>Day</th><th>Week</th><th>Game No.</th><th colspan="3">Game</th><th>City</th><th>Time</th></tr><tr><td rowspan="4">3</td><td>24</td><td>Sat</td><td>14</td><td>RL 2-3Winner</td><td>:</td><td>RL 1- (4-5) Winner</td><td>1</td><td>Poorer Rank Home -</td></tr><tr><td>25</td><td>Sun</td><td>15</td><td>RL 2-3Winner</td><td>:</td><td>RL 1- (4-5) Winner</td><td>2</td><td>Poorer Rank Home -</td></tr><tr><td>29</td><td>Thu</td><td>16</td><td>RL 1- (4-5) Winner</td><td>:</td><td>RL 2-3Winner</td><td>3</td><td>Better Rank Home -</td></tr><tr><td>31</td><td>Sat</td><td>17</td><td>RL 1- (4-5) Winner</td><td>:</td><td>RL 2-3Winner</td><td>4</td><td>Better Rank Home -</td></tr><tr><td>4</td><td>1</td><td>Sun</td><td>18</td><td>RL 1- (4-5) Winner</td><td>:</td><td>RL 2-3Winner</td><td>5</td><td>Better Rank Home -</td></tr></table> <div>Deduct 0.5 on each mismatch or mistake for every above-mentioned function.</div>								Play-off First Round								Month	Day	Week	Game No.	Game			City	Time	3	3	Sat	1	RL 4th	:	RL 5th	1	Better Rank Home -	4	Sun	2	RL 4th	:	RL 5th	2	Better Rank Home -	6	Tue	3	RL 4th	:	RL 5th	3	Better Rank Home -	Play-off Semi Final								Month	Day	Week	Game No.	Game			City	Time	3	10	Sat	4	RL 1st	:	RL 4-5Winner	1	Better Rank Home -	5	RL 2nd	:	RL 3rd	1	Better Rank Home -	11	Sun	6	RL 1st	:	RL 4-5Winner	2	Better Rank Home -	7	RL 2nd	:	RL 3rd	2	Better Rank Home -	13	Tue	8	RL 1st	:	RL 4-5Winner	3	Better Rank Home -	9	RL 2nd	:	RL 3rd	3	Better Rank Home -	17	Sat	10	RL 4-5Winner	:	RL 1st	4	Poorer Rank Home -	11	RL 3rd	:	RL 2nd	4	Poorer Rank Home -	18	Sun	12	RL 4-5Winner	:	RL 1st	5	Poorer Rank Home -	13	RL 3rd	:	RL 2nd	5	Poorer Rank Home -	Play-off Final								Month	Day	Week	Game No.	Game			City	Time	3	24	Sat	14	RL 2-3Winner	:	RL 1- (4-5) Winner	1	Poorer Rank Home -	25	Sun	15	RL 2-3Winner	:	RL 1- (4-5) Winner	2	Poorer Rank Home -	29	Thu	16	RL 1- (4-5) Winner	:	RL 2-3Winner	3	Better Rank Home -	31	Sat	17	RL 1- (4-5) Winner	:	RL 2-3Winner	4	Better Rank Home -	4	1	Sun	18	RL 1- (4-5) Winner	:	RL 2-3Winner
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8	<div>Administrator: Function design for Generating Scores of Play-Off</div> <div>Design on object detail functions and event driven connection are completely and friendly.</div> <div><div><div>● Please design a button and automatically generate the playoff match results through the random number according to the rules of the playoff schedule, including: “Play-Off First Round”, “Play-Off Semi Final”, “Play-Off Final”. (5)</div><div>● This function is only for Administrator. (1)</div></div><div>Deduct 1 on each mismatch or mistake for every above-mentioned function.</div></div>							6																																																																																																																																																																																											

Software Design Stage1 Task Descriptions		Max Score	Actual Score
(9)	<p>Function design for Search and Browse “Play-Off” (Table Mode)</p> <p>Design on object detail functions and event driven connection are completely and friendly.</p> <p>Linking to Stage 1 Task (6), user don't need to login to system, they can:</p> <ul style="list-style-type: none"> ● Search and Browse detail information of “Play-Off First Round“ by table mode. ● Search and Browse detail information of Search and Browse “Play-Off Semi Final“ by table mode. ● Search and Browse detail information of Search and Browse “Play-Off Final“ by table mode. ● Show detail information: date, day of the week, time, name of home team and away team, score, place, etc. <p>Deduct 0.5 on each mismatch or mistake for every above-mentioned function.</p>	6	
(10)	<p>Function design for “Play-Off Schedule and Scores” (Graphic Mode)</p> <p>Design UI and object detail functions and event driven connection are completely and friendly.</p> 	10	

Software Design Stage1 Task Descriptions		Max Score	Actual Score
	<p>Refer to above diagram to design:</p> <ul style="list-style-type: none"> ● Click on the First Round button in the first column to list game schedule 1~3 detailed information. ● Click on the semi-final button in the second column to list game schedule 4~13 detailed schedule information. ● Click on the final button of the third column to list game schedule 14~18 detailed schedule information. ● The above contains the design of the user interface and the navigation process. All three must to show: date, day of the week, place, time, name of home team and away team, score. ● Highlight related block and show related information on assigned area are correct. ● User could print out the report or save as a PDF file. <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>		
(11)	<p>Administrator: UI design of “User permissions management and function setting”</p> <p>Design on “User permissions management and function setting” interface and detail function is completely and friendly.</p> <p>Deduct 0.5 on each mismatch or mistake.</p>	2	
(12)	<p>Administrator: Function design of “User permissions management and function setting”</p> <p>Design on object detail functions and event driven connection of “User permissions management and function setting” are completely and friendly, including:</p> <ul style="list-style-type: none"> ● At least 6 kinds of user groups: Guest, Team Administrator, Field Recorder, Record Analyst, General Staff, Administrator. ● At least 3 kinds of data permissions: Read, Edit, Delete. ● Permissions management table to assign. ● Users group management list to assign. <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>	8	
(13)	<p>Administrator: UI and Function design of “Backend management functions and configuration” on Stage 1</p> <p>UI design and object detail functions and event driven connection of “Backend management functions and configuration” are completely and friendly, including:</p> <ul style="list-style-type: none"> ● Personal information management function for different users. (can be more than one). (1) 	8	

Software Design Stage1 Task Descriptions		Max Score	Actual Score
	<ul style="list-style-type: none"> ● Administrator could assign users access authority/permission. (2) ● Administrator could manage information of data table of “News”, via designed user interfaces. (4) <p>Notice:</p> <ol style="list-style-type: none"> 1. You must add at least 3 News, data must be recorded into associated data field via designed user interfaces. 2. News attached files provided inside the folder “\ <i>SoftwareDesign1</i>\Data\News File” 3. You can refer information of News file to add News. <ul style="list-style-type: none"> ● Administrator could use all the functions of this system. (1) <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>		
(14)	<p>UI design of “Registration” for various user</p> <p>Design on “Registration“ interfaces and detail functions for various user are completely and friendly. (Can be more than one).</p> <p>Give 1 for one UI, give 2 for more than one UI. Deduct 0.5 on each mismatch or mistake.</p>	2	
(15)	<p>Function design of “Registration” for various user</p> <p>Design on object detail functions and event driven connection of “Registration“ are completely and friendly, including:</p> <ul style="list-style-type: none"> ● Personal information management functions for different users. (can be more than one). (2) ● Verify User’s passwords must use a strong password rule. (2) <ul style="list-style-type: none"> ✧ At least 8 characters. ✧ Uppercase English letter ✧ Lowercase English letter ✧ Numeric ✧ Symbol <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>	4	
(16)	<p>UI design of “System login” for various user</p> <p>Design on “System login“ interface is completely and friendly, including:</p> <ul style="list-style-type: none"> ● System Name ● Logo ● User’s ID and password. <p>Deducted 0.5 on each mismatch or mistake.</p>	1	

Software Design Stage1 Task Descriptions		Max Score	Actual Score
(17)	<p>Function design of “System login” for various user</p> <p>Design on object detail functions and event driven connection of “System login” are completely and friendly, including:</p> <ul style="list-style-type: none"> ● Design user login function. (1) ● Create 2 users for every kind of user permissions except guest and administrator, total is 8 users account. They have different authorization to access related functions after login. (1) ● Save above-mentioned 8 users account as filename “System Login Account.txt”, including: ID, Password, user permissions group. (1) ● User’s passwords must use a strong password rule. (2) ● If the user enters the wrong username or password for more than three times, they need to wait ten seconds before they can login to the system again. While waiting for the next chance to login, a countdown timer will indicate the time remaining for the next attempt. (2) ● In case management disables the user and they enter the correct credentials, an appropriate message will let them know the reason why they cannot log on. (2) <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>	9	
(18)	<p>UI and Function design of “System login log” for various user</p> <ul style="list-style-type: none"> ● The goal of adding this option is to know how long each user is present on the system. This means that we need to keep records when someone enters the system and when they log off. (3) 	6	

Software Design Stage1 Task Descriptions		Max Score	Actual Score																									
	<ul style="list-style-type: none">The system also needs to be able to detect when something out of the ordinary happens and the user does not log off properly (e.g. the system crashes etc.). In those circumstances, the reason for the fault needs to be kept in the database so that the administrator can later review them and take actions to eliminate them. A mockup of the dialogue for this is shown above. (3) <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>																											
(19)	<p>Administrator: Function design of “Management user’s activities log”</p> <p>Design on object detail functions and event driven connection of “Management user’s activities log” are completely and friendly.</p> <p>The list of user’s activities log which consists of the following:</p> <p style="text-align: center;">Time spent on system : 00:19:03 Number of crashes: 1</p> <table><tr><th>Date</th><th>Login time</th><th>Logout time</th><th>Time spent on system</th><th>Unsuccessful logout reason</th></tr><tr><td>02/13/2017</td><td>17:15</td><td>18:45</td><td>1:30</td><td></td></tr><tr><td>02/13/2017</td><td>8:25</td><td>**</td><td>**</td><td>Power outage</td></tr><tr><td>02/12/2017</td><td>8:35</td><td>18:45</td><td>10:10</td><td></td></tr><tr><td>02/11/2017</td><td>8:45</td><td>18:30</td><td>9:45</td><td></td></tr></table> <ul style="list-style-type: none">The columns to be displayed are date and time of logging on and off as well as the total time one has spent on the system.If there is a crash detected, the reason needs to be displayed in the appropriate column. The row that relates to the crash needs to be contrasted with a different background color.The last login to the system which is the one used to get to this form is not displayed on the form.Administrator would be able to delete the log of the selected users. A mockup of the form is drawn above. <p>Deduct 1 on each mismatch or mistake for every above-mentioned function.</p>	Date	Login time	Logout time	Time spent on system	Unsuccessful logout reason	02/13/2017	17:15	18:45	1:30		02/13/2017	8:25	**	**	Power outage	02/12/2017	8:35	18:45	10:10		02/11/2017	8:45	18:30	9:45		6	
Date	Login time	Logout time	Time spent on system	Unsuccessful logout reason																								
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02/12/2017	8:35	18:45	10:10																									
02/11/2017	8:45	18:30	9:45																									
(20)	<p>Each user interface is numbered on caption.</p> <p>Deducted 0.5 on each mismatch or mistake.</p>	1																										

Software Design Stage1 Task Descriptions		Max Score	Actual Score
(21)	Using IIHF 2018 Logo, UI color and style are matched with organizer needs. Deduct 0.5 on each mismatch or mistake.	1	
(22)	Naming of objects on forms and user interfaces all are easy to interpret. Deduct 0.5 on each mismatch or mistake.	1	
(23)	The usability for mouse and keyboard operation, function and navigation button, anti-mistake, navigation hints is good. Deduct 0.5 on each mismatch or mistake.	1	
	Total	100	