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Department of Computing

ISYS114: Introduction to Database Design and Management

ISYS114 2018 – ASSIGNMENT TWO WORTH 20%

The assignment includes the following components

ONLINE SUBMISSION WORTH 10%

IN-CLASS QUIZ WORTH 10%

ONLINE SUBMISSION DUE: 5PM FRIDAY 19 OCTOBER 2018

IN-CLASS QUIZ DUE: DURING WEEK 11 IN YOUR SCHEDULED WORKSHOP

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Case Background

RUSSIA was chosen to host the Football World Cup 2018. Russians wanted to make it the best organised world cup ever. They intended to avoid any reason to cause national shame. Therefore, they hired 'you' to be the RUSSIA2018 database administrator to look after their data. As a part of your role, you need to do the following tasks...Good Luck

Task 1 (4 marks)

Create the following tables based on the tables given below. You need to decide the right order to create these tables.

Please note that the description of each table is for your understanding and not to be used in SQL table creation.

TABLE NAME: STADIUM		
COLUMN-NAME	DATATYPE	DESCRIPTION
STADIUMID [PK]	CHAR(3)	A unique ID for each stadium
STADIUMNAME	VARCHAR(30)	The name of the stadium
STADIUMCITY	VARCHAR(20)	The city of the stadium
CAPACITY	INT	The maximum capacity of the stadium
OPENYEAR	YEAR	The year the stadium was opened

TABLE NAME: FAN		
COLUMN-NAME	DATATYPE	DESCRIPTION
FANID [PK]	CHAR(9)	A unique ID for each fan
FANNAME	VARCHAR(25)	The name of the fan
FANNATIONALITY	VARCHAR(30)	The nationality of the fan
FANCATEGORY	CHAR(7)	The category of the fan

TABLE NAME: MATCHES		
COLUMN-NAME	DATATYPE	DESCRIPTION
MATCHID [PK]	CHAR(5)	A unique ID for each match
FIRSTTEAM [FK]	CHAR(4)	The ID of the first team in a match
SECONDTEAM [FK]	CHAR(4)	The ID of the second team in a match
MATCHDATE	DATE	The date of playing a match
KICKOFF	TIME	The starting time of a match
STADIUMID [FK]	CHAR(3)	The ID of the stadium to play a match

TABLE NAME: TEAM		
COLUMN-NAME	DATATYPE	DESCRIPTION
TEAMID [PK]	CHAR(4)	A unique ID for each team
COUNTRY	VARCHAR(20)	The country of the team
CONTINENT	VARCHAR(15)	The continent of the team
FIFARANK	TINYINT	FIFA rank to the team
TEAMGROUP	CHAR(1)	The group a team plays in
MANAGER	VARCHAR(20)	The name of the manager of the team
NICKNAME	VARCHAR(25)	The nickname of the team

TABLE NAME: TICKET (will be provided to you)		
COLUMN-NAME	DATATYPE	DESCRIPTION
TICKETID [PK]	CHAR(15)	A unique ID for each ticket
BLOCKNO	CHAR(4)	The number of the block
ROWNO	CHAR(4)	The location of the row
SEATNO	CHAR(4)	The location of the seat
PRICE	SMALLINT	The price of the ticket
MATCHID [FK]	CHAR(5)	The ID of the match of the ticket
FANID [FK]	CHAR(9)	The ID of the fan who purchased the ticket

Task 2 (4 marks)

Populate the tables with values given below. Please insert the data in CAPITAL letters. Note that the fields STADIUMID, FANID or MATCHID (i.e. S01, F001 or M01) has zero in it and not letter 'O'

STADIUM TABLE				
STADIUMID	STADIUMNAME	STADIUMCITY	CAPACITY	OPENYEAR
S01	LUZHNIKI STADIUM	MOSCOW	80000	1956
S02	SAINT PETERSBURG STADIUM	SAINT PETERSBURG	67000	2017
S03	FISHT STADIUM	SOCHI	48000	2013
S04	KAZAN ARENA	KAZAN	45000	2013
S05	SAMARA ARENA	SAMARA	45000	2018
S06	SPARTAK STADIUM	MOSCOW	42000	2014

FAN TABLE			
FANID	FANNAME	FANNATIONALITY	FANCATEGORY
F001	MONICA JONES	AMERICAN	SILVER
F002	DMITRIY VLADIMIR	RUSSIAN	GOLD
F003	ELLEN SMITH	AUSTRALIAN	SILVER
F004	MR. BEAN	BRITISH	GOLD
F005	IGOR MIKHAIL	RUSSIAN	BRONZE
F006	ALBERTO HERNANDEZ	BRAZILIAN	SILVER
F007	NATALIA PAKLINA	RUSSIAN	BRONZE
F008	NANCY AJRAM	LEBANESE	SILVER
F009	JIE CHEN	CHINESE	GOLD
F010	MAX CAMERON	AMERICAN	SILVER

MATCHES TABLE					
MATCHID	FIRSTTEAM	SECONDTEAM	MATCHDATE	KICKOFF	STADIUMID
M01	T9	T17	2018-06-14	15:00:00	S01
M02	T5	T29	2018-06-14	16:00:00	S02
M03	T10	T19	2018-06-16	18:00:00	S03
M04	T10	T16	2018-06-19	20:00:00	S02
M05	T1	T15	2018-06-19	20:00:00	S04
M06	T2	T4	2019-06-20	15:00:00	S06
M07	T11	T19	2018-07-15	20:00:00	S01
M08	T15	T19	2018-07-15	16:00:00	S02

TEAM TABLE (will be provided to you)						
TEAMID	COUNTRY	CONTINENT	FIFARANK	TEAMGROUP	MANAGER	NICKNAME
T1	ARGENTINA	SOUTH AMERICA	5	D	JORGE SAMPAOLI	WHITE AND SKY BLUES
T10	AUSTRALIA	OCEANS	36	C	BERT VAN MARWIJK	SOCCEROOS
T11	BELGIUM	EUROPE	3	G	ROBERTO MARTÍNEZ	RED DEVILS
T12	BRAZIL	SOUTH AMERICA	2	E	TITE	THE SELECTION
T13	COLOMBIA	SOUTH AMERICA	16	H	JOSE PEKERMANN	THE COFFEE GROWERS
T14	COSTA RICA	SOUTH AMERICA	23	E		LOS TICOS
T15	CROATIA	EUROPE	20	D	ZLATKO DALIC	THE BLAZERS
T16	DENMARK	EUROPE	12	C	AGE HAREIDE	DANISH DYNAMITE
T17	EGYPT	AFRICA	45	A	HECTOR CUPER	PHARAOHS
T18	ENGLAND	EUROPE	13	G	GARETH SOUTHGATE	THREE LIONS
T19	FRANCE	EUROPE	7	C	DIDIER DESCHAMPS	THE BLUES
T2	GERMANY	EUROPE	1	F	JOACHIM LOW	
T20	ICELAND	EUROPE	22	D	HEIMIR HALLGRIMSSON	OUR BOYS
T21	IRAN	ASIA	37	B	CARLOS QUEIROZ	TEAM MELLI
T22	JAPAN	ASIA	61	H	VAHID HALILHODZIC	BLUE SAMURAI
T23	MEXICO	SOUTH AMERICA	15	F	JUAN CARLOS OSORIO	EL TRICOLOR
T24	MOROCCO	AFRICA	41	B	HERVE RENARD	ATLAS LIONS
T25	NIGERIA	AFRICA	48	D	GERNOT ROHR	SUPER EAGLES
T26	PANAMA	SOUTH AMERICA	55	G	HERNAN DARIO GOMEZ	THE RED TIDE
T27	PERU	SOUTH AMERICA	11	C	RICARDO GARECA	LOS INCAS
T28	POLAND	EUROPE	8	H	ADAM NAWALKA	THE POLISH EAGLES
T29	PORTUGAL	EUROPE	4	B	FERNANDO SANTOS	TEAM OF THE CASTLES
T3	RUSSIA	ASIA	70	A	STANISLAV CHERCHESOV	SBORNAYA (TEAM)

T30	SAUDI ARABIA	ASIA	67	A	BERT VAN MARWIJK	THE GREEN FALCONS
T31	SENEGAL	AFRICA	27	H	ALIOU CISSE	THE LIONS OF TERANGA
T32	SERBIA	EUROPE	34	E	MLADEN KRSTAJIC	THE EAGLES
T4	SOUTH KOREA	ASIA	57	F	SHIN TAE-YONG	ASIAN TIGERS
T5	SPAIN	EUROPE	10	B	JULEN LOPETEGUI	
T6	SWEDEN	EUROPE	24	F	JANNE ANDERSSON	
T7	SWITZERLAND	EUROPE	6	E	VLADIMIR PETKOVIC	THE RED CRUSADERS
T8	TUNISIA	AFRICA	21	G	NABIL MAALOUL	THE EAGLES OF CARTHAGE
T9	URUGUAY	SOUTH AMERICA	14	A	OSCAR TABAREZ	CHARRUAS

TICKET TABLE						
TICKETID	BLOCKNO	ROWNO	SEATNO	PRICE	MATCHID	FANID
Tic1	A112	23	19	150	M01	F001
Tic10	D109	9	20	500	M06	F009
Tic2	B75	45	11	185	M02	F003
Tic3	D109	7	21	200	M02	F005
Tic4	B80	41	8	250	M03	F001
Tic5	E123	23	15	300	M03	F004
Tic6	A266	17	24	375	M05	F002
Tic7	B45	25	11	350	M05	F009
Tic8	F11	23	14	300	M06	F007
Tic9	C233	7	23	750	M08	F001

Task 3 (3 marks)

Write an SQL statement to display match ID for the matches that starts after 16:00. Sort the result by kick-Off in descending order.

Task 4 (3 marks)

Write an SQL statement to display the country and its continent whose FIFA Rank within a range of 2 to 5. Sort the result by FIFA Rank in an ascending order. The country and the continent should be forced to be in lower case.

Task 5 (3 marks)

Write an SQL statement to display ticket ID and block number of the tickets that are either in block 'A' or in block 'B'. Sort the result by block number in an ascending order.

Task 6 (4 marks)

Write an SQL statement to display match ID and kick off time of the matches played at stadium "KAZAN ARENA". Each kick off time should start with the text "starts at".

Task 7 (4 marks)

Write an SQL statement to display the first 3 characters of a country name whose manager is blank (change the alias to "COUNTRY INITIALS"), also display the match date and kick off time. Sort the result by match date in descending order.

[NOTE: manager name is blank means the name is not provided in the database]

Task 8 (3 marks)

Write an SQL statement to display fan ID and fan name for those who've purchased at least one ticket. [JOIN MUST BE USED]

Task 9 (3 marks)

Write an SQL statement to display fan ID and fan name for those who've purchased at least one ticket. [SUB-QUERY MUST BE USED]

Task 10 (4 marks)

Write an SQL statement to display fan categories, the number of tickets in each category the fan bought (change the alias to "NUMBER OF TICKETS PURCHASED") along with the sum of prices (change the alias to 'TOTAL PRICES') in each category the fans paid. Sort the result by total price in an ascending order.

Task 11 (5 marks)

Write an SQL statement to display match ID and the count of tickets sold for each match ONLY if the number of tickets sold of this match is more than 1 and the open year of the stadium on which the match will be played is not 2013.

Task 12 (5 marks)

Write an SQL statement to display the stadium name and the number of matches played in each stadium (change the alias to "NUMBER OF MATCHES"). Display only the top two stadiums where most matches were held. Sort the result by the number of matches played on each stadium in a descending order.

[NOTE: Do Not use a static (fixed) value to determine the largest number of matches]

Task 13 (5 marks)

Write an SQL statement to display team name and its manager if Croatia is one of the teams in any match (either as a first or a second team). Manager's name should be displayed as initialisation of first name followed by a dot and then the last name. The alias of the manager column should be changed to "Manager Initials". For example, if manager's name is David Smith, it will be displayed as D. Smith.

The output of task 13 should look like the following:

COUNTRY	Manager Initials	COUNTRY	Manager Initials
ARGENTINA	J. SAMPAOLI	CROATIA	Z. DALIC
CROATIA	Z. DALIC	FRANCE	D. DESCHAMPS

Task 14 (5 marks)

Create a **view** (named BRONZE) to display fan name, match ID and stadium name in the ticket of matches booked by bronze fans.

Task 15 (5 marks)

Create a **stored procedure** (named FANMATCHES) to display match ID, stadium name, seat number and kick off time for the matches attended by a fan. The name of that fan will be provided as an argument in the created stored procedure.

Submission File

- Download the file 'Submit_This.txt' provided in your Assignment-2 folder on iLearn. This will be the template for you to insert your SQL statements.
- Rename this file to your StudentID_Name.txt. Example: 12345678_AbrahamSmith.txt
- To achieve each of the tasks described above, you need to answer your tasks by writing queries, run them, check the results, copy and insert the codes at the right place in the template.
- Use the provided SQL code (i.e. TICKET table creation and TEAM records) in the file "Assignment2_TicketTable_TeamRecords.txt" on iLearn as a contribution to your assignment (no need to inset data about 32 teams).

Submission Instructions

- You need to submit this file back on iLearn (Assignment-2 link) after you have inserted all the answers, before the due date.
- Format of the file will be .txt, do not change it to a .sql file.

Assignment-2 In-class Assessment

- In-class assessment will be conducted in week 11 in the workshops you've enrolled in.
- In-class assessment will base on assignment-2 case study with similar queries as the ones in the online submission.
- A Student must physically attend the scheduled workshops to attempt the in-class assessment. A student should get his/her student card to sit the in-class assessment.
- In-class assessment is an individual assessment, so test/exam policy applies.
- Only one attempt is given to each student.

Task	Marking Criteria	Breaking down the mark	Mark
Task 1	Four tables created (4X1)		4
Task 2	Four tables populated correctly (4X1)		4
Task 3	Correct field displayed from the right table	1	3
	Correct condition	1	
	Correct Sorting	1	
Task 4	Correct field displayed from the right table	1	3
	Correct condition	1	
	Right lower case to the displayed fields	1	
Task 5	Correct field displayed from the right table	0.5	3
	Correct condition	2	
	Correct Sorting	0.5	
Task 6	Correct field displayed from the right table	1	4
	Text "starts at" is displayed before kick-off time	1	
	correct condition	2	
Task 7	correct country name, match date and kick-off for blank manager is displayed	1	4
	Only first three character displayed	1	
	Correct condition	1	
	Correct Sorting	1	
Task 8	Correct field displayed from the right table	1	3
	Correct join	2	
Task 9	Correct field displayed from the right table	1	3
	Correct subquery used	2	
Task 10	Correct calculation of the number of tickets	1.5	4
	Correct calculation of sum of prices	1.5	
	Correct Sorting	1	
Task 11	Correct calculation to the count of tickets sold for each match	2	5
	Only more than 1 ticket sold	2	
	Opening year is not 2013	1	
Task 12	Top TWO largest stadiums with played matches	3	5
	Changing alias	1	
	Correct Sorting	1	
Task 13	Correct country name and manager playing with Croatia	3	5
	manager initial is displayed	2	
Task 14	Correct field displayed from the right table	1	5
	Correct condition	2	
	A view is created with the right name	2	
Task 15	Correct stored procedure with the right argument	2	5
	Correct field displayed from the right table	2	
	Correct condition using the argument	1	
PENALTY			
TOTAL			60

FAQs from last semester

1. When you say, display the details (id, name) of conference sessions, what does it mean?
It means you need to print the details from the session table. But instead of every single column, you only must display what's asked in the bracket.
2. Sometimes, you are adding sentences that say, display 'something else' as well. What do we do for that?
Add that to your SELECT too!
3. Can I submit a word document/pdf instead?
No, we're sorry! Please use the template and follow the guidelines
4. Can I make my own data types up? I don't like the ones you've given
No, we're sorry!
5. Can I change the data to lower case! I feel like SQL is screaming at me.
No, we're sorry! Please stick to the case since it is data
6. Can I display extra fields more than request in the task?
Please display the ones that are asked. Nothing extra :)
7. How to create a table with two PK? Or how to create a table with an FK?
Please refer to lectures/workshops!
8. You didn't teach this or that in our lectures. How am I supposed to do this?
90% of the assignment is based on whatever we have done in the lectures or workshops.
You will have to do a bit of research and understand how SQL works. If the assignment doesn't make you think, what's the point?
9. Do we need constraints in create query for PK and FKs?
Yes, you should!
10. What does 'order of execution mean'?
It means you put tables in the order in which you would create and populate them.
11. What is the difference between data types, for example INT, SMALLINT and TINYINT?
Please find more details about MySQL data type in this reference
<https://dev.mysql.com/doc/refman/8.0/en/data-type-overview.html>