

TEST PLAN

ID	Test	Element Tested	Expected Result	Actual Result
1	<pre>SELECT * FROM TAB WHERE tname IN ('STADIUM', 'TEAM', 'FOOTBALLERS', 'SPONSOR', 'SPONSORSHIP');</pre>	Database tables	5 tables returned	As expected
	<pre>SQL> SELECT * FROM TAB WHERE tname IN ('STADIUM', 'TEAM', 'FOOTBALLERS', 'SPONSOR', 'SPONSORSHIP'); TNAME ----- TABTYPE CLUSTERID FOOTBALLERS TABLE SPONSOR TABLE SPONSORSHIP TABLE TNAME ----- TABTYPE CLUSTERID STADIUM TABLE TEAM TABLE</pre>			
2	<pre>SELECT constraint_name FROM user_constraints WHERE constraint_name IN ('PK_ST_ID', 'PK_TM_ID', 'PK_FT_ID', 'PK_SP_ID', 'PK_SPONSORSHIP');</pre>	All primary keys	5 primary keys returned	As expected
	<pre>SQL> SELECT constraint_name FROM user_constraints WHERE constraint_name IN ('PK_ST_ID', 'PK_TM_ID', 'PK_FT_ID', 'PK_SP_ID', 'PK_SPONSORSHIP'); CONSTRAINT_NAME ----- PK_FT_ID PK_SPONSORSHIP PK_SP_ID PK_ST_ID PK_TM_ID</pre>			
3	<pre>SELECT * FROM user_sequences WHERE sequence_name IN ('SEQ_ST_ID', 'SEQ_TM_ID', 'SEQ_FT_ID', 'SEQ_SP_ID');</pre>	All sequences	4 sequences returned	As expected

```

SQL> SELECT * FROM user_sequences WHERE sequence_name IN ('SEQ_ST_ID', 'SEQ_TM_ID', 'SEQ_FT_ID', 'SEQ_SP_ID');

SEQUENCE_NAME
-----
MIN_VALUE  MAX_VALUE INCREMENT_BY C O CACHE_SIZE LAST_NUMBER S E S S K
-----
SEQ_FT_ID      1 1.0000E+28          1 N N        20          21 N N N N N
SEQ_SP_ID      1 1.0000E+28          1 N N        20          21 N N N N N
SEQ_ST_ID      1 1.0000E+28          1 N N        20          21 N N N N N

SEQUENCE_NAME
-----
MIN_VALUE  MAX_VALUE INCREMENT_BY C O CACHE_SIZE LAST_NUMBER S E S S K
-----
SEQ_TM_ID      1 1.0000E+28          1 N N        20          21 N N N N N

```

4	SELECT * FROM footballers;	Query # a	11 footballers returned	As expected
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```

SQL> SELECT * FROM footballers;

          FT_ID FT_NAME                      FT_SURNAME
-----+-----+-----+-----+-----+-----+-----+
          TM_ID FT_    FT_GAMES   FT_GOALS FT_CONTRACT FT_EMAIL
-----+-----+-----+-----+-----+-----+-----+
          FT_COUNTRY                  FT_DOB
-----+-----+-----+-----+-----+-----+-----+
          1 ERLING                      HAALAND
          1 ATT           14        15      27300000 E.HAALAND@IHU.GR
NORWAY
          2 RUBEN                      DIAS
          1 DEF           17        0       13000000 R.DIAS@IHU.GR
PORTUGAL
          FT_ID FT_NAME                      FT_SURNAME
-----+-----+-----+-----+-----+-----+-----+
          TM_ID FT_    FT_GAMES   FT_GOALS FT_CONTRACT FT_EMAIL
-----+-----+-----+-----+-----+-----+-----+
          FT_COUNTRY                  FT_DOB
-----+-----+-----+-----+-----+-----+-----+
          3 MYKHAILO                   MUDRYK
          2 ATT           7         2      5000000 M.MUDRYK@IHU.GR
UKRAINE
          4 ROBERT                     SANCHEZ
          2 GK            14        0       3120000 R.SANCHEZ@IHU.GR
          FT_ID FT_NAME                      FT_SURNAME
-----+-----+-----+-----+-----+-----+-----+
          TM_ID FT_    FT_GAMES   FT_GOALS FT_CONTRACT FT_EMAIL
-----+-----+-----+-----+-----+-----+-----+
          FT_COUNTRY                  FT_DOB
-----+-----+-----+-----+-----+-----+-----+
          SPAIN
          18-NOV-97
          5 KYLIAN                     MBAPPE
          5 ATT           15        16      16200000 K.MBAPPE@IHU.GR
FRANCE
          20-DEC-98
          6 TONI                       KROOS
          FT_ID FT_NAME                      FT_SURNAME
-----+-----+-----+-----+-----+-----+-----+
          TM_ID FT_    FT_GAMES   FT_GOALS FT_CONTRACT FT_EMAIL
-----+-----+-----+-----+-----+-----+-----+
          FT_COUNTRY                  FT_DOB
-----+-----+-----+-----+-----+-----+-----+
          GERMANY
          5 MID            2        0      15600000 T.KROOS@IHU.GR
          04-JAN-90
          ENGLAND
          7 JUDE                      BELLINGHAM
          5 MID           11        3      20800000 J.BELLINGHAM@IHU.GR
          29-JUN-03

```

	FT_ID	FT_NAME		FT_SURNAME	
	TM_ID	FT_	FT_GAMES	FT_GOALS	FT_CONTRACT FT_EMAIL
	FT_COUNTRY			FT_DOB	
BRAZIL	8	DIAS BELLOLI		RAPHINIA	
	6	ATT	9	4	10500000 RAPHINIA@IHU.GR
				14-DEC-96	
SPAIN	9	GONZALEZ LOPEZ		PEDRI	
	6	MID	12	2	12500000 G.PEDRI@IHU.GR
				25-NOV-02	
	FT_ID	FT_NAME		FT_SURNAME	
	TM_ID	FT_	FT_GAMES	FT_GOALS	FT_CONTRACT FT_EMAIL
	FT_COUNTRY			FT_DOB	
GERMANY	10	JOSHUA		KIMMICH	
	7	DEF	9	0	20000000 J.KIMMICH@IHU.GR
				08-FEB-95	
	11	MANUEL		NEUER	
	7	GK	5	0	21000000 M.NEUSER@IHU.GR
	FT_ID	FT_NAME		FT_SURNAME	
	TM_ID	FT_	FT_GAMES	FT_GOALS	FT_CONTRACT FT_EMAIL
	FT_COUNTRY			FT_DOB	
GERMANY				27-MAR-86	

11 rows selected.

5	SELECT tm_name, tm_city, tm_goals FROM team ORDER BY tm_name DESC;	Query # b	3 columns reversed, name, city and goals from team	As expected
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```
SQL> SELECT tm_name, tm_city, tm_goals FROM team ORDER BY tm_name DESC;
```

TM_NAME	TM_CITY	TM_GOALS
REAL MADRID	MADRID	78
PARIS SAINT GERMAIN	PARIS	100
MANCHESTER CITY	MANCHESTER	130
CHELSEA	LONDON	120
BAYERN	MUNICH	99
BARCELONA	BARCELONA	102
ATLETICO MADRID	MADRID	65

7 rows selected.

6	SELECT ft_name, ft_surname, ft_country FROM footballers WHERE ft_country = 'SPAIN';	Query # c.1	2 Spanish players Pedri, Sanchez	As expected
	SQL> SELECT ft_name, ft_surname, ft_country FROM footballers WHERE ft_country = 'SPAIN';			
	FT_NAME FT_SURNAME			

	FT_COUNTRY			

	ROBERT SANCHEZ			
	SPAIN			
	GONZALEZ LOPEZ PEDRI			
	SPAIN			
7	SELECT tm_name FROM team WHERE tm_name LIKE 'BA%';	Query # c.2	2 teams that start with BA, Barcelona, Bayern	As expected
	SQL> SELECT tm_name FROM team WHERE tm_name LIKE 'BA%';			
	TM_NAME			

	BARCELONA			
	BAYERN			
8	SELECT ft_name, ft_surname, ft_country FROM footballers WHERE NOT ft_country = 'GERMANY';	Query # c.3	8 players that are not from Germany	As expected

```

SQL> SELECT ft_name, ft_surname, ft_country FROM footballers WHERE NOT ft_country = 'GERMANY';

FT_NAME          FT_SURNAME
-----
FT_COUNTRY
-----
ERLING           HAALAND
NORWAY

RUBEN            DIAS
PORTUGAL

MYKHAILO        MUDRYK
UKRAINE

FT_NAME          FT_SURNAME
-----
FT_COUNTRY
-----
ROBERT           SANCHEZ
SPAIN

KYLIAN           MBAPPE
FRANCE

JUDE              BELINGHAM
ENGLAND

FT_NAME          FT_SURNAME
-----
FT_COUNTRY
-----
DIAS BELLOLI     RAPHINIA
BRAZIL

GONZALEZ LOPEZ   PEDRI
SPAIN

8 rows selected.

```

9	SELECT ft_name, ft_surname, ft_dob FROM footballers WHERE TO_CHAR(ft_dob,'MM') BETWEEN '03' AND '11';	Query # c.4	6 players born between March and November	As expected
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```

SQL> SELECT ft_name, ft_surname, ft_dob FROM footballers WHERE TO_CHAR(ft_dob,'MM') BETWEEN '03' AND '11'

FT_NAME          FT_SURNAME          FT_DOB
-----
ERLING           HAALAND           21-JUL-00
RUBEN             DIAS              14-MAY-97
ROBERT           SANCHEZ          18-NOV-97
JUDE              BELINGHAM        29-JUN-03
GONZALEZ LOPEZ   PEDRI            25-NOV-02
MANUEL            NEUER            27-MAR-86

6 rows selected.

```

10	SELECT t.tm_name, s.st_name, s.st_review FROM stadium s, team t WHERE s.st_id = t.st_id;	Query # d.1	2 joined tables stadium and team	As expected
SQL> SELECT t.tm_name, s.st_name, s.st_review FROM stadium s, team t WHERE s.st_id = t.st_id;				
	TM_NAME	ST_NAME	ST REVIEW	
	-----	-----	-----	
	MANCHESTER CITY	ETIHAD STADIUM	4	
	CHELSEA	STAMFORD BRIDGE	4	
	PARIS SAINT GERMAIN	PARC DE PRINCES	3	
	ATLETICO MADRID	WANDA METROPOLITANO	4	
	REAL MADRID	SANTIAGO BERNABEU	5	
	BARCELONA	CAMP NOU	4	
	BAYERN	ALIANZ ARENA	5	
	7 rows selected.			
11	SELECT f.ft_name, f.ft_surname, t.tm_name, s.st_name FROM stadium s JOIN team t ON s.st_id = t.st_id JOIN footballers f ON f.tm_id = t.tm_id;	Query # d.2	3 joined tables stadium, team and footballers	As expected

```

SQL> SELECT f.ft_name, f.ft_surname, t.tm_name, s.st_name FROM stadium s JOIN team t ON s.st_id = t.st_id JOIN footballers f ON f.tm_id = t.tm_id

FT_NAME          FT_SURNAME
-----          -----
TM_NAME          ST_NAME
-----          -----
ERLING          HAALAND
MANCHESTER CITY ETIHAD STADIUM
RUBEN           DIAS
MANCHESTER CITY ETIHAD STADIUM
MYKHAILO        MUDRYK
CHELSEA          STAMFORD BRIDGE

FT_NAME          FT_SURNAME
-----          -----
TM_NAME          ST_NAME
-----          -----
ROBERT          SANCHEZ
CHELSEA          STAMFORD BRIDGE
KYLIAN          MBAPPE
REAL MADRID    SANTIAGO BERNABEU
TONI            KROOS
REAL MADRID    SANTIAGO BERNABEU

FT_NAME          FT_SURNAME
-----          -----
TM_NAME          ST_NAME
-----          -----
JUDE             BELMINGHAM
REAL MADRID    SANTIAGO BERNABEU
DIAS BELLOLI    RAPHINIA
BARCELONA       CAMP NOU
GONZALEZ LOPEZ  PEDRI
BARCELONA       CAMP NOU

FT_NAME          FT_SURNAME
-----          -----
TM_NAME          ST_NAME
-----          -----
JOSHUA          KIMMICH
BAYERN          ALIANZ ARENA
MANUEL          NEUER
BAYERN          ALIANZ ARENA

```

11 rows selected.

12	<pre> SELECT f.ft_name, f.ft_surname, t.tm_name, sp.sp_name, sf.sp_fee FROM footballers f JOIN team t ON f.tm_id = t.tm_id JOIN sponsorship sf ON sf.tm_id = t.tm_id JOIN sponsor sp ON sp.sp_id = sf.sp_id; </pre>	Query # d.3	4 joined tables footballers, team, sponsorship and sponsor	As expected
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```

SQL> SELECT f.ft_name, f.ft_surname, t.tm_name, sp.sp_name, sf.sp_fee FROM footballers f JOIN team t ON f.tm_id = t.tm_id JOIN sponsorship sf ON sf.tm_id = t.tm_id JOIN sponsor sp ON sp.sp_id = sf.sp_id;

FT_NAME          FT_SURNAME
-----          -----
TM_NAME          SP_NAME           SP_FEE
-----          -----
ERLING          HAALAND           1000000000
MANCHESTER CITY ETIHAD
RUBEN           DIAS              1000000000
MANCHESTER CITY ETIHAD
MYKHAILO        MUDRYK            400000000
CHELSEA          NIKE
FT_NAME          FT_SURNAME
-----          -----
TM_NAME          SP_NAME           SP_FEE
-----          -----
ROBERT          SANCHEZ           400000000
CHELSEA          NIKE
KYLIAN          MBAPPE             1700000000
REAL MADRID    ADIDAS
TONI            KROOS              1700000000
REAL MADRID    ADIDAS
FT_NAME          FT_SURNAME
-----          -----
TM_NAME          SP_NAME           SP_FEE
-----          -----
JUDE            BELINGHAM          1700000000
REAL MADRID    ADIDAS
DIAS BELLOLI    RAPHINIA           900000000
BARCELONA       SPOTIFY
DIAS BELLOLI    RAPHINIA           460000000
BARCELONA       NIKE
FT_NAME          FT_SURNAME
-----          -----
TM_NAME          SP_NAME           SP_FEE
-----          -----
GONZALEZ LOPEZ PEDRI              900000000
BARCELONA       SPOTIFY
GONZALEZ LOPEZ PEDRI              460000000
BARCELONA       NIKE
JOSHUA          KIMMICH             500000000
BAYERN          AUDI
FT_NAME          FT_SURNAME
-----          -----
TM_NAME          SP_NAME           SP_FEE
-----          -----
JOSHUA          KIMMICH             900000000
BAYERN          ADIDAS
MANUEL          NEUER              500000000
BAYERN          AUDI
MANUEL          NEUER              900000000
BAYERN          ADIDAS

```

15 rows selected.

13	SELECT ft_name, ft_surname FROM footballers WHERE ft_surname LIKE 'K%S';	Query # e.1	1 footballer that begins with k and ends with s Kroos	As expected
SQL> SELECT ft_name, ft_surname FROM footballers WHERE ft_surname LIKE 'K%S';				

14	<pre>SELECT tm_name, COUNT(ft_id) FROM team t JOIN footballers f ON t.tm_id = f.tm_id GROUP BY t.tm_name;</pre>	Query # e.2	All teams have 2 players except of Real madrid with 3	As expected												
	<pre>SQL> SELECT tm_name, COUNT(ft_id) FROM team t JOIN footballers f ON t.tm_id = f.tm_id GROUP BY t.tm_name;</pre> <table> <thead> <tr> <th>TM_NAME</th> <th>COUNT(FT_ID)</th> </tr> </thead> <tbody> <tr> <td>MANCHESTER CITY</td> <td>2</td> </tr> <tr> <td>CHELSEA</td> <td>2</td> </tr> <tr> <td>REAL MADRID</td> <td>3</td> </tr> <tr> <td>BARCELONA</td> <td>2</td> </tr> <tr> <td>BAVERN</td> <td>2</td> </tr> </tbody> </table>	TM_NAME	COUNT(FT_ID)	MANCHESTER CITY	2	CHELSEA	2	REAL MADRID	3	BARCELONA	2	BAVERN	2			
TM_NAME	COUNT(FT_ID)															
MANCHESTER CITY	2															
CHELSEA	2															
REAL MADRID	3															
BARCELONA	2															
BAVERN	2															
15	<pre>SELECT ft_name, ft_surname, ft_contract FROM footballers WHERE ft_contract IN (SELECT MAX(ft_contract) FROM footballers);</pre>	Query # e.3	Haaland has the highest contract 27300000	As expected												
	<pre>SQL> SELECT ft_name, ft_surname, ft_contract FROM footballers WHERE ft_contract IN (SELECT MAX(ft_contract) FROM footballers);</pre> <table> <thead> <tr> <th>FT_NAME</th> <th>FT_SURNAM</th> <th>FT_CONTRACT</th> </tr> </thead> <tbody> <tr> <td>ERLING</td> <td>HAALAND</td> <td>27300000</td> </tr> </tbody> </table>	FT_NAME	FT_SURNAM	FT_CONTRACT	ERLING	HAALAND	27300000									
FT_NAME	FT_SURNAM	FT_CONTRACT														
ERLING	HAALAND	27300000														
16	<pre>SELECT COUNT(st_id) FROM stadium WHERE st_review < 2;</pre>	Query # e.4	Only one stadium has review <2	As expected												
	<pre>SQL> SELECT COUNT(st_id) FROM stadium WHERE st_review < 2;</pre> <table> <thead> <tr> <th>COUNT(ST_ID)</th> </tr> </thead> <tbody> <tr> <td>1</td> </tr> </tbody> </table>	COUNT(ST_ID)	1													
COUNT(ST_ID)																
1																
17	<pre>SELECT ft_surname, ft_name, ft_id, tm_name FROM footballers f, team t WHERE f.tm_id = t.tm_id ORDER BY ft_surname,ft_name;</pre>	Query # e.5	All footballers in ascending order by surname and name	As expected												

```

SQL> SELECT ft_surname, ft_name, ft_id, tm_name FROM footballers f, team t WHERE f.tm_id = t.tm_id ORDER BY ft_surname,ft_name;

```

FT_SURNAME	FT_NAME	FT_ID
TM_NAME		
BELINGHAM	JUDE	7
REAL MADRID		
DIAS	RUBEN	2
MANCHESTER CITY		
HAALAND	ERLING	1
MANCHESTER CITY		
FT_SURNAME	FT_NAME	FT_ID
TM_NAME		
KIMMICH	JOSHUA	10
BAVARIAN		
KROOS	TONI	6
REAL MADRID		
MBAPPE	KYLIAN	5
REAL MADRID		
FT_SURNAME	FT_NAME	FT_ID
TM_NAME		
MUDRYK	MYKHAILO	3
CHELSEA		
NEUER	MANUEL	11
BAVARIAN		
PEDRI	GONZALEZ LOPEZ	9
BARCELONA		
FT_SURNAME	FT_NAME	FT_ID
TM_NAME		
RAPHINIA	DIAS BELLOLI	8
BARCELONA		
SANCHEZ	ROBERT	4
CHELSEA		

11 rows selected.

18	SELECT ft_surname, ft_name, tm_name, ft_goals FROM footballers f JOIN team t ON f.tm_id = t.tm_id WHERE ft_goals = (SELECT MAX(ft_goals) FROM footballers);	Query # e.6	Mbappe first scorer with 16 goals	As expected
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```

SQL> SELECT ft_surname, ft_name, tm_name, ft_goals FROM footballers f JOIN team t ON f.tm_id = t.tm_id WHERE ft_goals = (SELECT MAX(ft_goals) FROM footballers);

```

FT_SURNAME	FT_NAME	FT_GOALS
TM_NAME		
MBAPPE	KYLIAN	16
REAL MADRID		

19	SELECT tm_city, COUNT(tm_city) "Teams per city" FROM team GROUP BY tm_city;	Query # e.7	1 per city except Madrid with 2 teams	As expected													
<pre>SQL> SELECT tm_city, COUNT(tm_city) "Teams per city" FROM team GROUP BY tm_city;</pre> <table> <thead> <tr> <th>TM_CITY</th> <th>Teams per city</th> </tr> </thead> <tbody> <tr><td>MANCHESTER</td><td>1</td></tr> <tr><td>LONDON</td><td>1</td></tr> <tr><td>PARIS</td><td>1</td></tr> <tr><td>MADRID</td><td>2</td></tr> <tr><td>BARCELONA</td><td>1</td></tr> <tr><td>MUNICH</td><td>1</td></tr> </tbody> </table> <pre>6 rows selected.</pre>				TM_CITY	Teams per city	MANCHESTER	1	LONDON	1	PARIS	1	MADRID	2	BARCELONA	1	MUNICH	1
TM_CITY	Teams per city																
MANCHESTER	1																
LONDON	1																
PARIS	1																
MADRID	2																
BARCELONA	1																
MUNICH	1																
20	SELECT tm_name, (tm_goals - tm_concede) AS goal_diff FROM team WHERE (tm_goals - tm_concede) = (SELECT MIN(tm_goals - tm_concede) FROM team);	Query # e.8	Real madrid has conceded more goals (dif = -6)	As expected													
<pre>SQL> SELECT tm_name, (tm_goals - tm_concede) AS goal_diff FROM team WHERE (tm_goals - tm_concede) = (SELECT MIN(tm_goals - tm_concede) FROM team);</pre> <table> <thead> <tr> <th>TM_NAME</th> <th>GOAL_DIFF</th> </tr> </thead> <tbody> <tr><td>REAL MADRID</td><td>-6</td></tr> </tbody> </table>				TM_NAME	GOAL_DIFF	REAL MADRID	-6										
TM_NAME	GOAL_DIFF																
REAL MADRID	-6																
21	SELECT COUNT(st_id) "No stadiums built 1980-1990" FROM stadium WHERE st_year BETWEEN 1980 AND 1999;	Query # e.9	Only one stadium was built in 1985	As expected													
<pre>SQL> SELECT COUNT(st_id) "No stadiums built 1980-1990" FROM stadium WHERE st_year BETWEEN 1980 AND 1999;</pre> <table> <thead> <tr> <th>No stadiums built 1980-1990</th> </tr> </thead> <tbody> <tr><td>1</td></tr> </tbody> </table>				No stadiums built 1980-1990	1												
No stadiums built 1980-1990																	
1																	
22	SELECT ft_name, ft_surname, ft_dob FROM footballers WHERE ft_dob LIKE '%JUL%';	Query # e.10	Only Haaland was born on July	As expected													
<pre>SQL> SELECT ft_name, ft_surname, ft_dob FROM footballers WHERE ft_dob LIKE '%JUL%';</pre> <table> <thead> <tr> <th>FT_NAME</th> <th>FT_SURNAME</th> <th>FT_DOB</th> </tr> </thead> <tbody> <tr><td>ERLING</td><td>HAALAND</td><td>21-JUL-00</td></tr> </tbody> </table>				FT_NAME	FT_SURNAME	FT_DOB	ERLING	HAALAND	21-JUL-00								
FT_NAME	FT_SURNAME	FT_DOB															
ERLING	HAALAND	21-JUL-00															
23	SELECT COUNT(st_id) FROM stadium WHERE st_id NOT IN (SELECT st_id FROM team);	Query # e.11	1 stadium that do not host a team	As expected													

```
SQL> SELECT COUNT(st_id) FROM stadium WHERE st_id NOT IN (SELECT st_id FROM team);
COUNT(ST_ID)
-----
1
```

24	SELECT tm_name FROM team WHERE tm_name LIKE '%SAINT%';	Query # e.12	Paris Saint Germain	As expected
SQL> SELECT tm_name FROM team WHERE tm_name LIKE '%SAINT%';				
25	SELECT ft_name, ft_surname, ft_contract, ft_goals, ft_country FROM footballers WHERE ft_country = 'BRAZIL' AND (ft_contract = (SELECT MAX(ft_contract) FROM footballers WHERE ft_country = 'BRAZIL')) OR ft_goals = (SELECT MAX(ft_goals) FROM footballers WHERE ft_country = 'BRAZIL'));	Query # e.13	Raphinia most goals or highest contract as Brazilian	As expected
SQL> SELECT ft_name, ft_surname, ft_contract, ft_goals, ft_country FROM footballers WHERE ft_country = 'BRAZIL' AND (ft_contract = (SELECT MAX(ft_contract) FROM footballers WHERE ft_country = 'BRAZIL')) OR ft_goals = (SELECT MAX(ft_goals) FROM footballers WHERE ft_country = 'BRAZIL'));				
26	SELECT ft_name, ft_surname, ft_position, ft_contract FROM footballers WHERE (ft_position, ft_contract) IN (SELECT ft_position, MAX(ft_contract) FROM footballers GROUP BY ft_position);	Query # e.14	Haaland ATT Bellingham MID Kimmich DEF NEUER GK Highest contract per position	As expected

```

SQL> SELECT ft_name, ft_surname, ft_position, ft_contract FROM footballers
  2 WHERE (ft_position, ft_contract) IN (SELECT ft_position, MAX(ft_contract) FROM footballers GROUP BY ft_position);

FT_NAME          FT_SURNAME      FT_ FT_CONTRACT
-----          -----          --  -----
ERLING           HAALAND         ATT  27300000
JUDE             BELINGHAM       MID  20800000
JOSHUA           KIMMICH        DEF  20000000
MANUEL           NEUER          GK   21000000

```

27	SELECT ft_name, ft_surname, SUBSTR(ft_country,1,2) SUBSTR(ft_name,1,4) SUBSTR(ft_surname,1,4) "Username" FROM footballers;	Query # e.15	Footballers username NoErliHaal, PoRubeDias	As expected
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```

SQL> SELECT ft_name, ft_surname, SUBSTR(ft_country,1,2)||SUBSTR(ft_name,1,4)||SUBSTR(ft_surname,1,4) "Username" FROM footballers;

FT_NAME          FT_SURNAME
-----          -----
Username

ERLING           HAALAND
NOERLIHAAL

RUBEN            DIAS
PORUBEDIAS

MYKHAILO        MUDRYK
UKMYKHMUDR

FT_NAME          FT_SURNAME
-----          -----
Username

ROBERT           SANCHEZ
SPROBESANC

KYLIAN           MBAPPE
FRKYLIMBAP

TONI              KROOS
GETONIKROO

FT_NAME          FT_SURNAME
-----          -----
Username

JUDE              BELINGHAM
ENJUDEBELI

DIAS BELLOLI     RAPHINIA
BRDIASRAP

GONZALEZ LOPEZ   PEDRI
SPGONZPEDR

FT_NAME          FT_SURNAME
-----          -----
Username

JOSHUA           KIMMICH
GEJOSHKIMM

MANUEL           NEUER
GEMANUNEUE

11 rows selected.

```

28	SELECT SUM(ft_contract) AS total_contracts FROM footballers;	Query # e.16	Sum of all contracts 165020000	As expected
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```
SQL> SELECT SUM(ft_contract) AS total_contracts FROM footballers;
TOTAL_CONTRACTS
-----
165020000
```

29	<pre>SELECT sp_name, SUM(sp_fee) FROM sponsor s1, sponsorship s2 WHERE s1.sp_id = s2.sp_id GROUP BY sp_name HAVING SUM(sp_fee) = (SELECT MAX(SUM(sp_fee)) FROM sponsorship GROUP BY sp_id);</pre>	Query # e.17	Adidas spends more money on advertising 2600000000	As expected
30	<pre>SELECT sp_type, SUM(sp_fee) FROM sponsor s1 JOIN sponsorship s2 ON s1.sp_id = s2.sp_id GROUP BY sp_type HAVING SUM(sp_fee) = (SELECT MAX(SUM(sp_fee))) FROM sponsorship s2 JOIN sponsor s1 ON s2.sp_id = s1.sp_id GROUP BY sp_type);</pre>	Query # e.18	Clothing spends more money on advertising 34600000000	As expected
31	<pre>SELECT ft_name, ft_surname, sp_name, max_fee FROM (SELECT s1.sp_id, MAX(sp_fee) AS max_fee FROM sponsor s1 JOIN sponsorship s2 ON s1.sp_id = s2.sp_id GROUP BY s1.sp_id) s3 JOIN sponsor s1 ON s3.sp_id = s1.sp_id JOIN sponsorship s2 ON s1.sp_id = s2.sp_id JOIN team t ON s2.tm_id = t.tm_id JOIN footballers f ON t.tm_id = f.tm_id ORDER BY sp_name;</pre>	Query # e.19	Adidas: Mbappe, Kroos, Belingham Audi: Kimmich, Neuer Etihad: Haaland, Dias Nike: Raphinia, Pedri Spotify: Raphinia, Pedri Footballers with highest sponsors as their teams	Not returned

```

SELECT ft_name, ft_surname,
sp_name, max_fee FROM
(SELECT s1.sp_id, MAX(sp_fee)
AS max_fee FROM sponsor s1
JOIN sponsorship s2 ON
s1.sp_id = s2.sp_id GROUP BY
s1.sp_id) s3 JOIN sponsor s1
ON s3.sp_id = s1.sp_id JOIN
sponsorship s2 ON s1.sp_id =
s2.sp_id AND s2.sp_fee =
s3.max_fee JOIN team t ON
s2.tm_id = t.tm_id JOIN
footballers f ON t.tm_id =
f.tm_id ORDER BY sp_name;

```

Use of AI
 Corrected solution
 Reason for mistake is incorrect application of the theory and inattention

```

SQL> SELECT ft_name, ft_surname, sp_name, max_fee FROM (SELECT s1.sp_id, MAX(sp_fee) AS max_fee FROM sponsor s1 JOIN sponsorship s2 ON s1.sp_id = s2.sp_id GROUP BY s1.sp_id) s3 JOIN sponsor s1 ON s3.sp_id = s1.sp_id JOIN sponsorship s2 ON s1.sp_id = s2.sp_id AND s2.sp_fee = s3.max_fee JOIN team t ON s2.tm_id = t.tm_id JOIN footballers f ON t.tm_id = f.tm_id ORDER BY sp_name;

FT_NAME          FT_SURNAME
SP_NAME          MAX_FEE
-----
KYLIAN           MBAPPE
ADIDAS          1700000000

TONI              KROOS
ADIDAS          1700000000

JUDE              BELINGHAM
ADIDAS          1700000000

FT_NAME          FT_SURNAME
SP_NAME          MAX_FEE
-----
JOSHUA            KIMMICH
AUDI              500000000

MANUEL            NEUER
AUDI              500000000

ERLING            HAALAND
ETIHAD          1000000000

FT_NAME          FT_SURNAME
SP_NAME          MAX_FEE
-----
RUBEN              DIAS
ETIHAD          1000000000

DIAS BELLOLI      RAPHINIA
NIKE              460000000

GONZALEZ LOPEZ     PEDRI
NIKE              460000000

FT_NAME          FT_SURNAME
SP_NAME          MAX_FEE
-----
DIAS BELLOLI      RAPHINIA
SPOTIFY          900000000

GONZALEZ LOPEZ     PEDRI
SPOTIFY          900000000

11 rows selected.

```

32	SELECT tm_name, sp_type, max_fee FROM (SELECT sp_type, MAX(sp_fee) AS max_fee FROM sponsor s1	Query # e.20	Barcelona Electronics 900000000	Not returned
-----------	---	--------------	---------------------------------	--------------

	<pre>JOIN sponsorship s2 ON s1.sp_id = s2.sp_id WHERE sp_type = 'ELECTRONICS' GROUP BY sp_type) s1 JOIN sponsorship s2 ON s2.sp_fee = s1.max_fee JOIN team t ON s2.tm_id = t.tm_id;</pre>		As the team that gets most from Electronics							
	<pre>SELECT tm_name, s3.sp_type, max_fee FROM (SELECT sp_type, MAX(sp_fee) AS max_fee FROM sponsor s1 JOIN sponsorship s2 ON s1.sp_id = s2.sp_id GROUP BY s1.sp_type) s1 JOIN sponsorship s2 ON s2.sp_fee = s1.max_fee JOIN team t ON s2.tm_id = t.tm_id JOIN sponsor s3 ON s3.sp_id = s2.sp_id WHERE s3.sp_type = 'ELECTRONICS';</pre>		<p>Use of AI Corrected solution Reason for mistake is incorrect application of the theory and inattention</p>							
<pre>SQL> SELECT tm_name, s3.sp_type, max_fee FROM (SELECT sp_type, MAX(sp_fee) AS max_fee FROM sponsor s1 JOIN sponsorship s2 ON s1.sp_id = s2.sp_id GROUP BY s1.sp_type) s1 JOIN sponsorship s2 ON s2.sp_fee = s1.max_fee JOIN team t ON s2.tm_id = t.tm_id JOIN sponsor s3 ON s3.sp_id = s2.sp_id WHERE s3.sp_type = 'ELECTRONICS';</pre> <table border="1"> <thead> <tr> <th>TM_NAME</th> <th>SP_TYPE</th> <th>MAX_FEE</th> </tr> </thead> <tbody> <tr> <td>BARCELONA</td> <td>ELECTRONICS</td> <td>900000000</td> </tr> </tbody> </table>					TM_NAME	SP_TYPE	MAX_FEE	BARCELONA	ELECTRONICS	900000000
TM_NAME	SP_TYPE	MAX_FEE								
BARCELONA	ELECTRONICS	900000000								

** AI assistance was used solely for queries ID 31 and 32. All the remaining solutions of this test plan were constructed without the aid of AI tools