Grade 12. SQL Class Test

Database: BP Challenge 2000.   **Total: 70 marks**

You may open the database in Ms Access and create your SQL statements there. Alternatively you can use SQLBrowser to open and run your SQL statements.

This is a four-table database of students from 4 different schools who entered the BP Challenge. For catering purposes, they had to make known their preference between Halaal, Kosher, Vegeterian and "No Preference". The students could be girls or boys and could be in any grade at their respective schools (grades 8 to 12 inclusive)
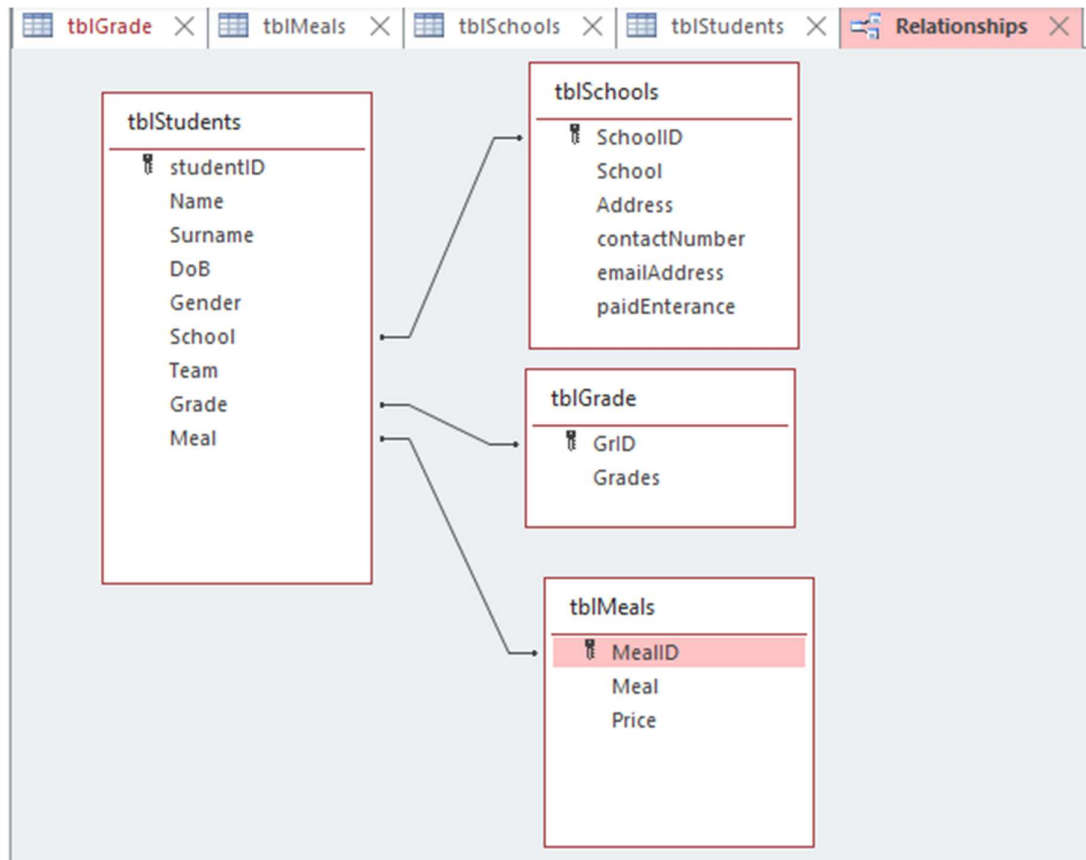

Table Grade

GrID	Grades	Click to Add
1	8	
2	9	
3	10	
4	11	
5	12	
(New)		

Table: Schools

SchoolID	School	Address	contactNumber	emailAddress	paidEnterance
1	North Lake Secondary School	125 Robin Avenue	0122359866	admin@northlake.co.za	Yes
2	Penwith High School	85 Roman Drive	0114568695	admin@penwith.za.org	Yes
3	Ridgedale High School	584 Ridge Road	0118562413	principal@ridgedale.com	No
4	Saint Peter's College	11 Drakensberg Road	0118698536	cat@spc.co.za	Yes
0					

Table: Meals

MealID	Meal	Price	Click to Add
1	Halaal	R 35.00	
2	Kosher	R 31.00	
3	Vegeterian	R 29.00	
4	No Preference	R 30.00	
(New)		R 0.00	

Table: Students (not all students are shown here)

studentID	Name	Surname	DoB	Gender	School	Team	Grade	Meal	Click
1	James	Simpson	17 Jan 1999	M	4	A	1	3	
2	Peter	Hammer	22 Dec 1999	M	2	A	4	4	
3	Barry	Waldron	15 Jun 2000	M	1	A	2	4	
4	Gary	Hamilton	10 May 2000	M	3	A	2	4	
6	Heather	Goldenhersh	16 May 2000	F	2	A	1	2	
7	Mackenzie	Crook	11 Sep 1999	F	1	A	2	1	
8	Lynn	Collins	20 Oct 2002	F	2	A	3	1	
9	Mpho	Ndlovu	08 Feb 2002	M	3	A	4	4	
10	Thandi	Mchunu	14 Jul 2000	F	3	A	4	4	
11	Simphiwe	Mkize	28 Mar 2001	M	4	A	1	4	
12	Ron	Naiker	02 Mar 1998	M	2	A	3	4	
13	Sophie	Vessels	24 Apr 2000	F	1	A	3	4	
15	Hanno	Anderson	23 Nov 2001	M	3	A	4	1	
16	Annemarie	van der Walt	06 Jan 2001	F	2	A	4	1	
17	Gary	Bottrill	30 Jun 1998	M	1	A	1	1	
18	Andraya	Richardson	04 Aug 2001	F	4	A	4	2	
19	Stephan	van Tonder	12 Mar 2001	M	1	A	1	2	
20	Frank	Letsholo	26 Sep 1998	M	4	A	3	2	
21	Marc	Simpson	30 Jan 1996	M	2	B	3	1	
22	Amy	White	25 Nov 1997	F	1	B	3	1	
23	James	Clark	14 May 1999	M	1	B	2	1	

Section One

Open a new Ms Word document. Write your name inside the document and save it using your name and grade and "SQL class test". Use this document to for your answers for section one and section two.

1.1) Use this 4 table database to explain the benefits and process of normalization. In your answer include the roles of the primary and foreign keys. Explain, with examples for the database, how normalization avoids anomalies.
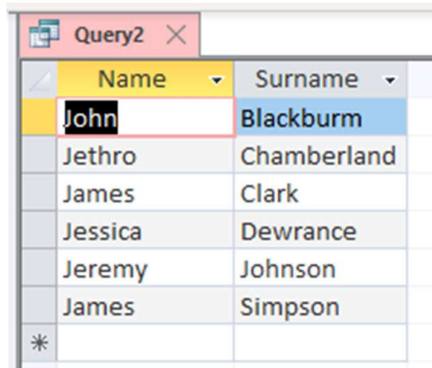
(10)

Section Two

Write SQL statements for the following questions. Copy and paste your SQL statement into your Ms. Word document with your NAME in the file.

In some cases, a screenshot is provided. If this is the case, then the screenshot is part of the question.

2.1) Did Martin Sebethoma enter the competition?

2.2) Find all the students who have a first name that starts with "J"

2.3) Find all the students who have a first name that starts with "J" but this time, list them alphabetically by their last name.

Name	Surname
John	Blackburm
Jethro	Chamberland
James	Clark
Jessica	Dewrance
Jeremy	Johnson
James	Simpson

2.4) Find all the students who have a birthday in May.

2.5) Look for any students who were born in 1995 or earlier.

2.6) Ensure that all students who enter the competition have a date of birth.

2.7) We need a list of students, sorted by their surname, with their ages in years (fractions of a year allowed but not compulsory)

2.8) Similar to the question above. We need a list of students, sorted by their surname, with their ages in years – no fractions of a year. Just in whole years.

2.9) We need a list of students, sorted from youngest to oldest, with their ages in years – no fractions of a year. Just in whole years. (sample only is shown below)

Name	Surname	Age
Lynn	Collins	
Mpho	Ndlovu	18
Hanno	Anderson	19
Christina	Delton	19
Stephan	van Tonder	19
Andraya	Richardson	19
Jethro	Chamberland	19
Aimee	Wellworth	19
Simphiwe	Mkize	19
Annemarie	van der Walt	19
Gary	Hamilton	20
Sophie	Vessels	20

2.10) We need only the name and surname of the oldest student in the competition.

2.11) Using today's date determine the average age of all the students using their date of birth. Here we don't want whole years only – we would like the average age rounded to two decimal places. Name the column appropriately.

Average age
20.65

2.12) Make a list of female students only.

2.13) We need the number of students who are in the A team of any school. (only the number). Name the column appropriately.

A team
19

2.14) We need the average price of the meals on offer. Name the column appropriately,

Ave Price
R31.25

2.15) Determine the number of students in each grade from all the different schools. (note the order)

Grade Count
10
12
8
8

2.16) Make a list of all students (name and surname) who attend North Lake Secondary School.

Name	Surname
Barry	Waldron
Mackenzie	Crook
Sophie	Vessels
Gary	Bottrill
Stephan	van Tonder
Amy	White
James	Clark
Andrew	Hardwick
John	Blackburm
Jessica	Dewrance

2.17) Make a list of all students who are vegeterian. (yes, ignore the spelling error)

Name	Surname
James	Simpson
Christina	Delton
John	Blackburm
Jeremy	Johnson
Fran	Langeveld

2.18) Are there any vegetarian students at North Lake Secondary School?

Name	Surname	School
John	Blackburm	North Lake Secondary School

2.19) List all the students, name and surname, who are in grade 9 from any school.

Name	Surname	Grades
Barry	Waldron	9
Gary	Hamilton	9
Mackenzie	Crook	9
James	Clark	9
Andrew	Hardwick	9
Kirsty	Lark	9
Christina	Delton	9
Jeremy	Johnson	9

2.20) List all the students, name and surname, who are not in grade 9. (sample only, shown below)

Name	Surname	Grades
James	Simpson	8
Peter	Hammer	11
Heather	Goldenhersh	8
Lynn	Collins	10
Mpho	Ndlovu	11
Thandi	Mchunu	11
Simphiwe	Mkize	8
Ron	Naiker	10
Sophie	Vessels	10
Hanno	Anderson	11
Annemarie	van der Walt	11

2.21) Write a SQL statement to find the oldest student in grade 9.

Name	Surname
Jeremy	Johnson

2.22) Lynn Collins is unable to provide proof of her date of birth before the deadline. Therefore she must be deleted from the student table

2.23) Lynn Collins finds her ID document. Despite missing the deadline the school decides to re-instate her back into the team. Her details are as follows

- Lynn Collins
- Date of birth 02 February 2000
- Gender: Female
- She attends Penwith High School
- She is in the A team
- She is in grade 10
- Her meal preference is Halaal

2.24) After Lynn Collins is added back to the A-team, the captain of the B team makes a fuss saying that it was not fair. For this reason, Lynn Collins is moved into the B team for missing the deadline. Write a SQL statement to update her details.

(60)

Total: 70 marks