

2019 Computer Applications Olympiad

Final Round – Afternoon Session

(13:30 – 17:30 PM)

Afternoon Session: Scenario

The year 2019 marks the 50th anniversary of the SACOT Student Games. Athletes from schools around the country compete in a range of different athletic events. The event is held over two consecutive days. The heats and quarter-finals for each event would take place on the first day and the semi-finals and finals for each event would take place on the second day.

The data contained in the spreadsheet and database were obtained from the last set of results of the first day.

Afternoon Session: Word processing

As this is a special occasion, a multi-page edition of the programme is being planned for the Finals (i.e. the second day of competition). It will contain more than just the event programme - it should include images of previous winners, short snippets on some of the previous games, congratulatory messages from the mayor/president, athletes in the running for the Victor and Victrix Ludorum, etc., etc.

The planned programme document has to be presented to the organising committee. The draft document must include:

- an appropriate cover page;
- the timetable for the 1st hour of the competition (note that all events need to take place on the same day so you will need to determine the start time and end time for the day);
- any possible field and track clashes,
- the names of athletes in the running for the Victor and Victrix Ludorum; and
- the planning for the commemorative part, i.e. snippets of information, messages, images, etc.

The details for the programme, event clashes and Victor and Victrix Ludorum must be obtained from the data provided or answers to questions in the spreadsheet and database sections of this competition.

Afternoon Session: Spreadsheet

You have been given a spreadsheet file called **Athletics Event Data 2019.xlsx**. This file must be used to obtain your answers for the questions that follow. You may add columns or worksheets to the file as needed. Use appropriate names.

The fields in the worksheet called *Athletes* are as follows:

Index	This is a unique field for each record (row). The first 6 digits are the same for the same athlete. The last digit is different for each event that that athlete entered.
Surname	The athlete's surname.
First name	The athlete's first name.
Gender	The athlete's gender.
DOB	The athlete's date of birth.
ID	The athlete's identification number.
Age	The athlete's age as at 1 January 2019.
CAT	The age group the athlete is in, namely Junior, Youth or Sub-youth
Main Event	The event entered for that record.
Code	A code which identifies the gender, age group and event.
Round1	This is the last distance or time obtained by that athlete on the first day of the competition. The times are in seconds and the distances in metres. The code 'DNQ' stands for 'Did Not Qualify' which means the athlete cannot participate in Round 2.
Race#	This field is only used in the Excel part of the competition and is explained below.

The worksheet called *Records* shows the national record for each of the events at the competition.

Question 1

Supply the organisers with a list of the number of entrants per event for the 'Junior' age category. Order your table with events as rows and the columns by gender (Males then Females). 'DNQ' athletes should not be included in your totals. Layout and presentation are left up to you.

Question 2

Create a table similar to the one shown below which shows the best time or distance for each event obtained in Round 1. Times must be given in minutes and seconds (mm:ss) for track events longer than 200 m.

Best performances - Qualifying																
	100m	100m Hurdles	110m Hurdles	1500m	200m	3000m	400m	800m	90m Hurdles	Discus	High Jump	Javelin	Long Jump	Pole Vault	Shot Put	Triple Jump
Junior																
Female	11.5	15.3		04:44.2	23.2	09:02.7	00:58.1	01:59.8		51.3	2.1	56.7	7.2	3.9	11.4	14.9
Male	10.3		15.3	03:43.4	20.4	07:52.6	00:46.2	01:46.8		53.5	2.2	79.8	8.0	5.4	19.9	15.4
Youth																
Female	11.9	13.8		04:15.9	23.8	09:03.8	00:57.4	02:08.6		35.6	2.1	55.5	6.0	3.8	16.8	12.7
Male	10.4		14.4	03:49.3	21.1	04:18.9	00:46.7	01:49.6		52.2	2.2	57.0	7.7	5.1	16.9	15.2
Sub-Youth																
Female	12.0			04:26.4	25.0	10:16.9	00:58.8	02:14.3	13.8	42.2	1.7	44.6	5.7	3.7	15.9	11.2
Male	10.9	13.5		04:08.6	21.6	04:37.1	00:49.6	01:55.1		61.1	1.9	76.2	7.2	4.5	19.2	13.6

Note: The data used in the above table was based on the qualifying times for the competition. You must use the data in the *Round1* field for your table. Change the heading to 'Best performances in Round 1'.

Question 3

The organisers wish to know which 'Junior' track athlete performed the best in Round 1. Use the APE (Athletics Performance Evaluation) table in the file called **VictorVictrix.xlsx** to determine which athlete obtained the highest total points for the following three races; 100 m, 200 m and 400 m. Use the time in the *Round1* field to determine the points earned. Only athletes who ran all three races need be considered.

An example of an APE result from the table would be Clinton Borgstrom (282732-x) who obtains 670 points for the 100 m, 920 points for the 200 m and 650 points for the 400 m. He, therefore, obtains a total of 2 240 points at the end of Round 1 and could be in the running for the Victor Ludorum.

No credit will be given for answers that are just typed in.

Question 4

NOTE: Due to time constraints, in answering this question you need only consider the 'Junior Female' category.

The 100 m races had heats. There were 4 heats in the 'Junior Female' category. The heat number is given in the field call 'Race#'. You are required to do the following:

- 1) Using the table in the file called **Semi & Final.xlsx** determine, based on the athletes rank amongst all heat results, which of the two semi-final races they will be running in. The selection of semi-finalist can be done in one of two ways:
 - a. Easy: Select the best 16 times (irrespective of heat) to go through to the semi-finals.
 - b. Difficult (worth more): For each of the heats the 1st three finishers (Q) go through to the semi-finals along with the four next best times (q).

A diagram showing the process of selecting athletes for the semi-finals is attached.

- 2) For each of the two semi-final races, lanes are allocated according to time for the heat. The lane numbers are also given in the file called **Semi & Final.xlsx**.
- 3) For each of the four heats from Round 1, print out a result list. Use the time obtained by the athlete in that heat. If they qualified for the semi-final include a 'Q' (qualified because they finished in position 1, 2 or 3) or 'q' (the qualification was based on time – option 1a above, or if you used 1b, the 4 fastest times not in positions 1, 2 or 3) with their result, as well as an indication of which semi-final they will be running in and their lane number.

More credit will be given to solutions which provide the race and lane dynamically.

Afternoon Session: Database

The database, **Athletics Event Data 2019**, contains data captured after the first day (i.e. Round 1).

The database consists of three related tables:

- *Athletes* – stores personal information about each athlete
- *Results*- stores the final results of the first weekend's competition
- *Events* – stores the data about each event

Notes

1. All objects (queries, forms, reports, etc.) that you create must be saved using meaningful names.
2. The results for the track events are given in seconds and those for the field events in metres.
3. For most results, codes have been added to the result which indicate whether the athlete has qualified to take part in Round 2. The codes used are:

- SF1 – Semi-final 1
 - SF2 – Semi-final 2
 - SF3 – Semi-final 3
 - F – Final
 - DNQ – Did not get a good enough time to take part in Round 2
4. All athletes who took part in field events qualified for the finals.
 5. Athletes who took part in track events did not all qualify for a semi-final or final. This is indicated in the *Round2* fields as DNQ (Did Not Qualify).
 6. There are some athletes with no data in both the *Round1* and *Round2* fields. These were track athletes who were disqualified in Round 1 of the competition because they made a false start (which means automatic disqualification). These athletes should not be included in any of the answers to Question 3 below.

The event organisers need your assistance with the following tasks:

Question 1 - Forms

- 1.1. Create a form that can be used to update an athlete's personal information.
- 1.2. Create the same form as described in Question 1.1 but add a drop-down control that uses the athlete's full name to jump directly to the record you need to update.
- 1.3. Create a form where the event name and type (Track or Field) is displayed in the main form. For each event, the names and Round 1 time or distance of the athletes should be displayed in a sub-form.

Question 2 - Queries

- 2.1 Create a query that gives a summary of the entries for Round 2 of the competition. The output of your query should look similar to the example below:

EventCode	Number of Athletes	<>	DNQ	F	SF1	SF2	SF3
JF100m	32		16		8	8	
JF100m Hurdles	15				8	7	
JF1500m	7			7			
JF200m	32		16		8	8	
JF3000m	35		11		8	8	8
JF400m	6			6			
JF800m	17		9	8			
JFDiscus	10			10			
JF1500m	7			7			

Note: The heading '<>' shows the athletes who were disqualified in Round 1.

Question 3 - Reports

- 3.1 Create a report to summarise how many athletes qualified for each event in Round 2. Group the field and track events separately.



The screenshot shows a report titled "Question 3.1" with a table of field events. The table has four columns: Event Type, Event Code, Event Name, and Number of Athletes. The data is as follows:

Event Type	Event Code	Event Name	Number of Athletes
Field	JFDiscus	Discus	10
	JFHigh Jump	High Jump	13
	JFJavelin	Javelin	9
	JFLong Jump	Long Jump	6
	JFPole Vault	Pole Vault	10

Your answer should look similar to the screenshot above but the numbers might not be exactly the same.

- 3.2 The track announcer needs to be given a list of athletes participating in each event. Create a report which asks for the event code and displays the names of all the athletes who are able to participate in Round 2. Athletes with a 'DNQ' code and those who were disqualified in Round 1 should not be displayed.

Extra credit will be given if you are able to modify one of the tables (choose carefully) to indicate lane numbers for the track events. Use the Excel spreadsheet **Semi & Final** to assist you.

- 3.3 The organisers would like a report arranged by event showing the names in alphabetical order of all the athletes who are participating in the event. If the event is a semi-final, arrange the names according to semi-final (1,2 or 3).

Do NOT include the names of the athletes who did not qualify for Round 2 or who were disqualified in Round 1.

The report should display either 'Semi-final 1', 'Semi-final 2', 'Semi-final 3' or 'Final' for each event rather than the codes 'SF1', 'SF2', 'SF3' and 'F'.