



# Computer Applications Olympiad



A project of the Computer Society of South Africa, sponsored by The CoZa Cares Foundation.

## FIRST ROUND QUESTION PAPER 2013:

### INSTRUCTIONS TO THE CANDIDATES

1. All answers must be typed or pasted on the answer sheet provided in the document AnswerSheet.
2. You may do the questions in any order, but you have to make sure the answers are placed correctly on the answer sheet.
3. The files you need to answer the questions have been provided to your school on CD. Ask your teacher/invigator where to find them.
4. The paper must be completed under "examination conditions". No communication with other contestants (oral, electronic or any form) is permitted.
5. You may use the application of your choice and convert the data as it suits you.
6. You have one hour (60 min.) to complete this paper. After one hour you may be given time to print your answer sheet, but no additions or alterations to the answers are allowed.
7. All marking is done from hard copy, i.e. from the printed answer sheet.
8. Each correct answer counts one mark.
9. You need to store your files where you found them and where your teacher can access them in case the judges want to see how you obtained the answer. Do not delete any of the files. Do not attempt to modify any files after the end of the contest.

**A:** When someone copies the work of another, that fact can be hidden by cleverly changing words and sentences. However our investigator suspects that the plagiarist has not bothered to change any of the formatting, and asks you to check on the formatting and other information in the original document. Use the word processing document "*Roberts Birds*"

1. Name the font style of this document.
2. How wide is the only table in this document?
3. What is the size of the top margin of a page?
4. Name the text wrapping format of the first image in the document.
5. What is the exact size of the first image in the document?
6. Only one bookmark has been created in the document. What is its name?
7. Name the paragraph Style applied to the document.
8. How many birds are listed in the long list near the end of the document?

**B:** You are in the hot seat at the Bird Information Centre and have to answer some reasonable (and some unreasonable) questions from the public, using the information in the spreadsheet "*Birds*"

Note: It is most likely that extra columns of calculations or worksheets will be created in order to answer questions 3 to 9. These columns or worksheets must not be deleted but kept as part of the spreadsheet so that the judges can look at them later. These files may not be modified after the contest has ended.

1. Some of the birds in the database are recorded as being part of a split species. How many are there?
2. How many birds are recorded as having a Genus name, Family name and Order name all beginning with the letter A?
3. How many birds are recorded having the letter "i" but not the letter "u" in their scientific name? Save your working column or worksheet as Q3.

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4. What is the BirdID of the bird with the longest scientific name, i.e. most characters in the name? Save your working column or worksheet as Q4.
5. The "BirdOrder" value for some of the records is greater than the "RobertsNo" value for that record. How many records are there like this? Save your working column or worksheet as Q5.
6. In the column "RobertsNo", 51, 82 and 98 are the first three values for which there is NOT a bird with that value as a "RobertsNo". Write down the next two values for which there is NOT a bird with that value as a "RobertsNo". Save your working column or worksheet as Q6.
7. The column NOS records the number of sightings of that species by a bird-watching club. What was the total number of sightings for all bird species which contain the word "hawk" anywhere in the common name? Save your working column or worksheet as Q7.
8. The column DTOLS contains the date and time that the bird was last sighted by a member of the bird-watching club. How many pairs of sightings are within 5 minutes of each other, e.g. 16h00 and 16h05 on the same day? Save your working column or worksheet as Q8.
9. How many birds were last sighted over a weekend, i.e. on a Saturday or Sunday? Save your working column or worksheet as Q9.

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**C:** You are still working at the Bird Information Centre, but your boss wants to test if you are ready for promotion. He instructs you to answer his questions using only the information in the Database called "*Birds*" which contains the names of most of the birds found in Southern Africa. The database contains more up-to-date information, therefore do not use the data from the previous question.

The database consists of four tables namely:

- Bird-Name
- Class-Genus
- Class-Family
- Class-Order

Every bird belongs to a single Genus; each Genus belongs to a single Family; each Family belongs to a single Order.

For example: The bird with a scientific name of *Struthio camelus* shows the following information in the database tables:

- CommonName: Common Ostrich
- GenusName : Struthio
- FamilyName : Struthionidae
- OrderName : Struthioniformes

Using the database provided, answer the following questions:

1. How many birds are there in the database?
2. How many unique families are there in the database?
3. What is the common name for the bird whose scientific name is *Pandion haliaetus*?
4. What family does the Crane belong to?
5. How many birds belong to the family Coliidae?
6. How many Vultures are there in the database?
7. What is the common name of the only bird found in the order Trogoniformes?
8. What is the GenusID for the genus *Centropus*?

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