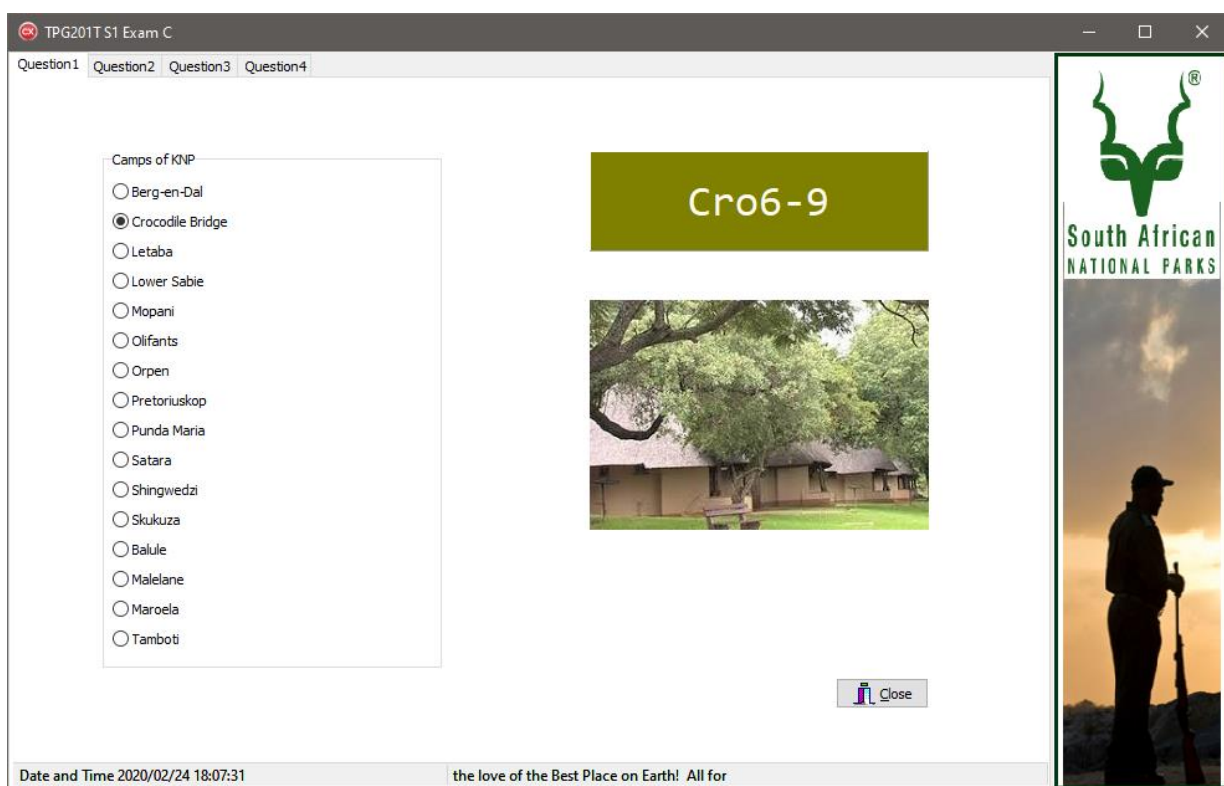


	<h1>TPG201T</h1> <h2>Basic Application Development Technical Programming 2</h2> <h3>Assignment <span style="border: 1px solid black; padding: 2px 10px;">3</span></h3> <h3>S2 2020++</h3>	 <span>C++ Builder</span>
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**UPLOAD TO TEST SLOT E**

**QUESTION 1 – tbsQuestion1**



1.1 Complete the code for the `tbsQuestion1Show` event that will apply the following changes to the components on the first tab sheet. (5)

- Add the text “Camps of KNP” as the heading of the radiogroup
- Set the size of the font of the `pnlCampCode` to 26pt for display purposes.
- Change the colour of the text on the `pnlCampCode` panel to cream.
- Change the colour of the panel to olive
- Change the font type to Consolas

Refer to the sample screenshot on the previous page.

1.2 Dynamically instantiate a `bitmapbutton` named `bttClose` to appear on the bottom left of the panel (as in the sample screenshot) (5)  
Ensure that when the user clicks on the button that the application will close and exit.

- 1.3 Complete the code for the onClick event of the [rdgCamps] radiogroup that will generate an applicable camp code for the selected camp based on the following rules: (11)
- The first three characters of the camp name plus
  - The number of vowels in the name of the camp plus
  - A dash plus
  - The number of consonants (non-vowels) in the camp name (spaces and hyphens – are ignored)

The generated camp code is displayed as part of the pnlCampCode panel's text.

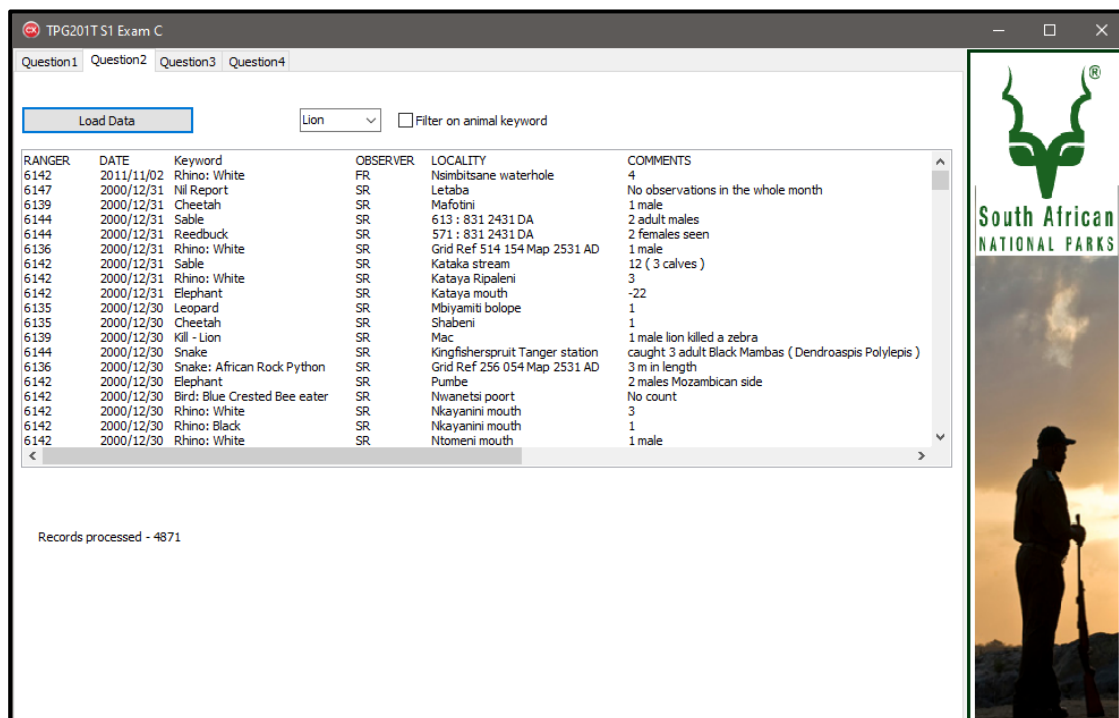
Also display the applicable camp image in the imgCamp image. The image files are stored as jpg files in the AppData folder.

Examples of a camp code and corresponding image file loaded.

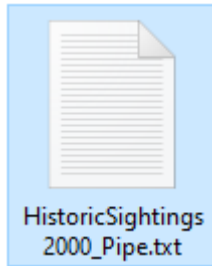


(21)

## QUESTION 2 – tbsQuestion2



- 2.1 Complete the code for the onShow event of the tbsQuestio2 tabsheet that will load the data from the HistoricSightings2000\_Pipe.txt file into the lstRawData TStringlist. (1)



1	RANGER DATE Keyword OBSERVER LOCALITY COMMENTS
2	6142 2011/11/02 Rhino: White FR Nsimbitsane waterhole 4
3	6147 2000/12/31 Nil Report SR Letaba No observations in the whole month
4	6139 2000/12/31 Cheetah SR Mafotini 1 male
5	6144 2000/12/31 Sable SR 613 : 831 2431 DA 2 adult males
6	6144 2000/12/31 Reedbuck SR 571 : 831 2431 DA 2 females seen
7	6136 2000/12/31 Rhino: White SR Grid Ref 514 154 Map 2531 AD 1 male
8	6142 2000/12/31 Sable SR Kataka stream 12 ( 3 calves )
9	6142 2000/12/31 Rhino: White SR Kataya Ripaleni 3
10	6142 2000/12/31 Elephant SR Kataya mouth -22
11	6135 2000/12/30 Leopard SR Mbiyamiti bolope 1
12	6135 2000/12/30 Cheetah SR Shabeni 1
13	6139 2000/12/30 Kill - Lion SR Mac 1 male lion killed a zebra
14	6144 2000/12/30 Snake SR Kingfisherspruit Tanger station caught 3 adult Black Mambas

The textfile contains historical data regarding sightings and observations made by special rangers in the park.  
The fields which are pipe | delimited represent data as indicated by the first row column headings.

The code for the function **getFieldByNr** have been supplied in part.

```
AnsiString getFieldByNr(AnsiString aLine, int fieldNr, char delimiter)
```

This function splits aLine into parts and returns the fieldNr'th field when the delimiter is used.

- 2.2 Add a function named **replaceDelimiter** to the unit file. The function prototype is also provided. This function should receive an AnsiString parameter named aLine and replace all the occurrences of an old delimiter (oldDel) with a new delimiter (newDel) character. (4)

The function returns the string with the delimiters replaced.

This function could be used for example to replace all commas (,) in a string with (\t) tabs.

- 2.3 Complete the code for the onClick event of the [Load Data] button that will: (6)
- Iterate through the data in the lstRawData TStringList
  - Replace all the pipes (|) with tabs(\t) and
  - Add the item to the redOutput richeditbox for display purposes.
  - Keep track of the number of records that are loaded into the richEditbox.

Take Note: The code to set the tabsettings of the applicable richeditbox has been provided to you.

- 2.4 Write the code for the onClick event of the ckbAnimalKeyword checkbox that will when checked filter the data for display purposes in the redOutput Richeditbox according to the keyword that was selected in the combobox. (12)

Load Data		Lion		<input checked="" type="checkbox"/> Filter on animal keyword	
6139	2000/12/30	Kill - Lion	SR	Mac	1 male lion killed a zebra
6139	2000/12/29	LION	SR	Nwari	1 male
6142	2000/12/29	LION	SR	Shishangaan windmill	1 male 1 female
6142	2000/12/29	LION	SR	2 km west of Nwanetsi	1 male
6142	2000/12/29	LION	SR	Nsimbitsane sisal line	2 males and 4 females
6135	2000/12/28	Lion	SR	Nyamunduke	2 males
6142	2000/12/28	LION	SR	Shishangaan windmill	1 male 1 female
6142	2000/12/28	LION	SR	Lindanda dam	2 males 4 females
6142	2000/12/28	LION	SR	Shinkelengaan oriole	1 male
6155	2000/12/27	LION	FR	Boxahuku	1 male 3 females
6139	2000/12/27	LION	SR	Nwari	1 male
6139	2000/12/27	LION	SR	Nhlowa mouth	2 males
6142	2000/12/27	LION	SR	Nsimbitsane mouth	13
6136	2000/12/25	Lion	SR	Grid Ref 314 845 Map 2531 AD	1 male 1 adult female
6136	2000/12/25	LION	SR	Grid Ref 266 016 Map 2531 AD	1 male and 2 females
6155	2000/12/24	LION	FR	Coetzer windmill	2 females
6135	2000/12/24	Lion	SR	Klein faai	1 male 1 female
6142	2000/12/24	LION	SR	Maraboe	1 male 1 female
6143	2000/12/24	Lion	FR	Sweni spruit	2 males 5 females
6135	2000/12/23	Lion	SR	Pretorious draf	1 male 2 females

Records processed - 953

In the example screenshot the user selected the keyword Lion in the combobox. All the “records” where the word Lion appear within the 3<sup>rd</sup> field (i.e.Keyword) are displayed.

In the example below the user selected Snake as a keyword and all records where the 3<sup>rd</sup> field contain the word snake are listed.

Load Data		Snake		<input checked="" type="checkbox"/> Filter on animal keyword	
6144	2000/12/30	Snake	SR	Kingfisherspruit Tanger station	caught 3 adult Black Mambas ( Dendroaspis Polylepis )
6136	2000/12/30	Snake: African Rock Python	SR	Grid Ref 256 054 Map 2531 AD	3 m in length
6144	2000/12/29	Snake	SR	RV 444: 954 2431 AD Orpen	caught adult female long tainted thread snakegravid wit
6136	2000/12/21	Snake: African Rock Python	SR	Stolsnek house	2,5 m Python eats tame rabbit
6144	2000/12/19	Snake	SR	Kingerfisherspruit Ranger station	caught Delalandis beaked Blind snake
6144	2000/12/09	Snake	SR	Kingerfisherspruit Ranger station	caught an adult Black File snake
6144	2000/12/08	Snake	SR	Kingerfisherspruit Ranger station	caught an adult Cape Walf Snake
6136	2000/12/01	Snake: Boomslang	FR	Stolsnek house	1,3 madult male in aa tree
6136	2000/12/01	Snake: Black Mamba	SR	Grid Ref 305 893 Map 2531 AD	2,3 m long
6136	2000/11/01	Snake: African Rock Python	FR	Grid ref 450 016 map 2531 AD	3,5 m long in a road
6136	2000/10/25	Snake: African Rock Python	FR	Grid Ref 263 965 Map 2531 AD	3 meters in length
6136	2000/10/01	Snake: Moz spitting cobra	SR	Stolsnek house	killed a 0,7m snake at the back door of house
6155	2000/09/28	Snake	FR	Shipudza	1 African Rock Python
6155	2000/09/28	Snake	FR	Shipudza	1 Black Mamba
6155	2000/09/14	Snake	FR	Airport	1 African Rock Python
6155	2000/09/13	Snake	FR	Lambwe	Moz spitting cobra 1 female
6136	2000/08/31	Snake: Black Mamba	SR	Magiti mountain	2,2m (Dendroospin polylepis )
6142	2000/08/26	Snake: African Rock Python	SR	Nkayanini	1
6136	2000/08/22	Snake: Variegated	SR	Stolsnek house	1,0 m ( Philothammus semivariegatus )
6136	2000/08/19	Snake: Black Mamba	FR	Grid Ref 308 944 Map 2531 AD	2,8 in length

Records processed - 37

TOTAL

(23)  
[[44]]



The end