

Solution Development ‘sub-scenario’

One of the focal areas of the trust is to provide employment opportunities to unemployed community members. Andrea has been appointed as a trainee to assist with the increasing volume of administration. She never did CAT at school, as her school did not offer the subject, but she has attended some of the courses offered by the trust. She has done very well, but does have some gaps in her knowledge with which she needs assistance.

1. Andrea complains that, when she performs a spell check on her documents, it always queries the word ‘colour’ and suggests it should be ‘color’, which she knows is wrong.
Explain why this is happening and how to fix the problem.
1. The language setting of the text is set to ‘English (United States)’. The text needs to be highlighted and the language setting needs to be changed to English (South Africa).
2. The name André Müller needs to be added to a document. What feature of a word processor can be used to add the characters é and ü?
2. You can use ‘Insert Symbol’ to add special characters, or you can use the Alt key together with a code.
3. Andrea performed a find and replace operation in a long *Word* document to replace the word ‘data’ with ‘information’ throughout the document.
However, when she looked at the document she saw that many words were ‘misspelt’. For example, ‘database’ had become ‘informationbase’ and ‘metadata’ had become ‘metainformation’.
Explain what has happened and how to fix this problem.
3. Andrea did not use the *Find whole words only* option, so any occurrence of the word *data* has been replaced by the word *information*. She will need to undo the find and replace action and repeat it by selecting the *Find whole words only* option.
4. Andrea often uses the *Enter* key repeatedly to shift a heading to the top of a page.
Give one reason why this is not a good choice (besides that it takes time) and suggest a more appropriate way of doing this.
4. It will create blank paragraphs and will not ensure that the heading stays at the top of a new page if text is shifted or deleted. The correct solution is to insert a page break to ensure that the heading always appears at the top of a new page.
Alternatively the pagination option *Page break before* can be used.
5. Many of the Trust’s reports (typed in *Word*) are typed in *portrait* format. They often need an Appendix in the same document to be in *landscape* format.
 - 5.1 Explain clearly how portrait format differs from landscape format.
 - 5.1 Portrait and landscape format are the two types of page orientation available. A page in portrait format is ‘taller than it is wide’. Similarly, a page in landscape format is ‘wider than it is tall’.

- 5.2 How could Andrea get the pages of an Appendix to appear in landscape format?
- 5.2 Andrea could add section breaks before and after the Appendix and apply landscape formatting to that section.
6. The trust is very conscious of using simple, 'understandable' English in the training manuals they are drawing up.
- What feature of a word processor could be used to find a simpler 'version' of a word like 'coercion'?
6. Thesaurus.
7. Andrea has seen that there is both a Save and a Save As option in most programs, including *Word* and *Excel*.
- Give two sets of circumstances where she would need to use the *Save As* command, as opposed to the *Save* command – other than renaming the file.
7. Any two of:
- saving the file to another folder, drive or location
 - adding a password to the file
 - saving the file in a different format.
8. Many school children come into the centre to get help with their school projects.
- 8.1 One of the learners said that his teacher says that they must use *footnotes*. Briefly explain what a footnote is and why they are used in research projects.
- 8.1 A footnote is extra text added at the bottom of a page to expand on / give extra information about the main text.
- 8.2 One of the learners complained that it takes a very long time to update the font size of all the headings in a long report.
- Briefly explain why using styles would have made this task much easier and quicker.
- 8.2 By updating the style in only one place, any existing text formatted with that style will be changed in the same way.
- 8.3 One of the learners was editing a report in *Word* when the following message appeared: "Error! Bookmark not defined."
- Briefly explain what the function of a *bookmark* in *Word* is.
- 8.3 A bookmark identifies a location or a selection of text that you name so you can easily locate it again.
- 8.4 One of the learners added an automatic table of contents to a document, but found that one of the headings that she wanted to include was not there.
- Explain what she must do to get this heading included in the table of contents.
- 8.4 Identify the style used to format the existing headings and format the heading that is not included with that same style. The table of contents then needs to be updated.

8.5 Some of the learners who come into the centre have worked on older versions of the office suite than the one used at the centre. One of the best ways to explore a new version of software is to look at the tooltips. One of the tutors at the centre also suggested they always 'right-click' when they are 'stuck' and if that does not help, they can try F1.

8.5.1 Briefly explain what tooltips are and how they can be accessed.

8.5.1 A tooltip is a hint or information that pops up when resting the cursor/mouse on an icon or object.

8.5.2 Explain why 'right-clicking' can assist users when they need help.

8.5.2 Right-clicking with a mouse generally brings up a pop-up menu with options related to the current activity.

8.5.3 Why would 'F1' be of assistance to users when they need help?

8.5.3 Pressing the F1 (function) key usually opens the Help file for the program you are working in.

8.6 A number of the Matric learners who use the centre need to draw up a CV for their Life Orientation project, but they are not sure where to start.

Explain why making use of a template would help in this regard, by explaining what the function of a template is.

8.6 A template is a document that contains the basic layout and sections needed for a particular type of document. You can load the template and then customise the document to suit your particular needs.

8.7 One of the learners who often visits the centre has a reading problem and frequently swaps letters when typing specific words. For example, he often misspells *guard* as *gaurd*.

What feature of a word processor could he use to change the misspelt words as he types them?

8.7 Autocorrect

8.8 One of the learners has created a family budget as part of a school task. He set up a table in *Word* showing the monthly income and expenses. He now wants to perform some calculations on these figures.

Give two reasons, in terms of the use of formulas, why it would have been better to perform this task in a spreadsheet program like *Excel*.

8.8 Any two of:

- There is a wider range of functions available.
- The results of calculations are automatically updated as the data changes.
- It is easier to reference the individual cells and ranges in a spreadsheet formula.

9. A *PowerPoint* presentation of the financial status of the centre needs to be presented to the sponsors. A chart from a spreadsheet has been inserted into the presentation, but every time the data in the spreadsheet is changed, the chart has to be redrawn and re-inserted into the presentation.

Briefly explain how this problem can be solved.

9. Paste the chart as a linked object which retains a link to the original data, so that, if this data changes (and hence the chart), it will automatically be updated in the presentation.
10. One of the learners was experimenting with a spreadsheet and the use of formulas. An extract of this spreadsheet is shown below:

	B2		fx =A1+A2		
	A	B	C	D	E
1	12				
2	23	35			
3	16				
4					
5					

- 10.1 Write down the resulting formula (not the answer), if the formula in cell B2 was copied to cell B3.

10.1 =A2+A3

- 10.2 The function =SUM(A1:A3) was added to cell A4. Instead of giving the expected answer of 51, it gave an answer of 52.

Explain why this may have occurred by referring to the difference between formatting and rounding in a spreadsheet.

- 10.2 If you format cells with no decimals, the way the figures appear in the spreadsheet is altered, but this does not change the actual value stored in the spreadsheet. For example, 16.4 would be displayed as 16. Rounding actually alters the values stored in the spreadsheet. The numbers in cells A1:A3 may have decimals that are not being displayed, but they are being included when these cells are added.

11. One of the tutors was helping a teacher who came to the centre for help with using a spreadsheet for her marks. The teacher set up this spreadsheet to convert the learners' marks for a test out of 25 to a percentage:

	B2		fx =A2/25*100		
	A	B	C	D	E
1	Mark / Punt	%			
2	20	8000.0%			
3	16	6400.0%			
4	15	6000.0%			
5	19	7600.0%			
6	18	7200.0%			
7	21	8400.0%			
8	24	9600.0%			
9	25	10000.0%			

Explain why the incorrect answers are being produced in column B.

11. The formula is correct, but the cells are formatted as percentages and the formula multiplies the result by 100 – the result is then effectively multiplied by 10000 instead of 100. Either the cell formatting must be changed to a Number format, or the Percentage formatting should be retained,

but the formula that is used should be changed (i.e. the formula should not multiply by 100 as is currently the case).

12. One of the more talented learners started to set up a spreadsheet to help his mother with some of the administration of the spaza shop she owns. An extract of this spreadsheet is shown below:

	A	B	C	D	E
1	Cost per unit				R 10.00
2					
3	Name	Quantity purchased	Price	VAT	Total
4	George, Babalwe	10	R 100.00	R 14.00	R 114.00
5	Savuka, Xolani	20	R 0.00	R 0.00	R 0.00
6	Brandt, Tiffany	5	#####	#####	#####
7	Gerber, Chesnee	8	#####	#####	#####

- 12.1 Give all the types of formatting that were used to format cell A1 and the contents of the cell.

12.1 Merging and right alignment.

- 12.2 What formatting was used to format the contents of cell B3?

12.2 (Text) Wrapping, Center, Middle align (centered between top and bottom).

- 12.3 Briefly explain why some of the cells display hash signs (#####) and explain how to solve this problem.

12.3 The results or values are too wide to be displayed in the cell – make the columns wider.

- 12.4 The formula in cell C4 (=B4*E1) is correct.

Clearly explain why incorrect results are produced when the formula is copied to cell C5 as shown, and explain how to solve the problem.

- 12.4 The cell references will change when the formula is copied 'down', so the cell reference for E1 would incorrectly change to E2, etc. This causes the incorrect unit price to be used in the calculations.

The solution is to use an absolute cell reference for cell E1. In other words, the formula would be =B4*\$E\$1 (or =B4*E\$1).

- 12.5 The learner wanted to print the spreadsheet on one page, but in the print preview he saw that the document did not fit onto one page. Explain two ways in which he can try to solve this problem.

- 12.5 Any two of:

- change the margin settings
- use the 'fit to one page' print option
- make the columns narrower and reduce the row heights if possible
- scale the printing down to a percentage so it fits on one page, etc.

13. Consider the following spreadsheet which was used to keep track of the number of parents attending the courses and the amounts they have paid for printing:

	A	B	C	D	E	F	G
1	Cost per page		R 0.85				
2							
3							
4	Course	Surname	Name	Email	Owns a PC	Pages printed	Total Cost
5	1	Babbage	Gerty	GertieB@yahoo.com	Y	10	R 58.50
6	2	Moodley	Thiolan	ThioMoodley@mweb.co.za	N	25	R 71.25
7	2	Somlota	Xola	XolaBabes@gmail.com	Y	0	R 50.00
8	1	Baatjies	Magda		Y	1	R 50.85
9	3	Appel	Willem	Appelator@mailbox.co.za	N	22	R 68.70
10	1	Smit	Ruth	RuthSmit44@webmail.co.za	Y	12	R 60.20
11	2	Smit	Magda		N	18	R 65.30
12	3	Dorp	Magda		N	12	R 60.20
13							R 485.00

- 13.1 Which spreadsheet functions could be used to do each of the following:

(You can just write down the name of the function in each case.)

- 13.1.1 To determine how many people own a PC (see column E).

13.1.1 **CountIF**

- 13.1.2 To determine how many pages were printed by people attending Course 1 (see columns A and F).

13.1.2 **SumIF**

- 13.1.3 To determine the number of people who have an email address listed (column D).

13.1.3 **CountA**

- 13.1.4 To determine the number of people who do not have an email address listed (column D).

13.1.4 **CountBlank**

- 13.1.5 To determine if the @ sign appears in an email address, e.g. cell D5.

13.1.5 **Find**

- 13.1.6 To determine the most popular course (using column A).

13.1.6 **Mode**

13.1.7 To calculate the total cost (column G) of people attending Course 2, who do not own a PC.

13.1.7 Sumifs

13.2 Give two reasons why you think codes (numbers) have been used to identify the courses in column A as opposed to their actual names, for example 'Introduction to internet'?

13.2 Any two of:

- Quicker to type/enter
- Less likely to have typing errors
- Easier to validate, etc.

13.3 The formula used to calculate the cost of the course for Gerty Babbage is: =50+F5*\$C\$1. Explain in your own words (without referring to specific cells) how the cost of a course is calculated, based on this formula.

13.3 It is R50 plus the cost of printing (the number of pages printed multiplied by the cost per page, which is currently set at 85 cents).

13.4 One of the trust members requested that the information in the spreadsheet be entered into an Access database.

What feature of a database can one use to avoid having to retype all this information?

13.4 Import

14. The information from the spreadsheet in the previous question was imported into a database table and fields for CellNo and Gender were added. An extract of the records stored in the database table is shown below:

Course	Surname	Name	Gender	Email	CellNo	OwnPC	PagesPrinted	TotalCost
3	Appel	Willem	M	Appelator@mailbox.co.za	834712321	N	22	68.70
1	Baatjies	Magda	V		834712321	Y	1	50.85
1	Babbage	Gerty	F	GertieB@yahoomail.com	823456781	Y	10	58.50
2	Smit	Magda	F		831235900	N	18	65.30
2	Moodley	Thiolan	m	ThioMoodley@mweb.co.za	72868712	N	25	71.25
1	Smit	Ruth	F	RuthSmit44@webmail.co.za	726512314	Y	12	60.20
2	Somlota	Xola	F	XolaBabes@gmail.com	731138432	N	0	50.00
3	Dorp	Magda	F	Maggies@bulletmail.com	731138432	N	12	60.20

14.1 Is there a suitable choice for a primary key, based on the data currently stored in the table? Briefly motivate your answer.

14.1 No. A primary key is a field that must contain unique values for every record and may not contain 'blanks'. The only real possibilities in this case are the Email and CellNo fields. The Email field contains unique values, but not every record has a value for this field. The CellNo

field has an entry for each record, but there are duplicate entries. Therefore no field is suitable to function as a primary key.

- 14.2 Sibü complained that the Rand signs disappeared when she tried to type them into the TotalCost field for each record.

Briefly explain why this is happening, and give the best way to solve this problem.

- 14.2 The field is currently formatted in a Number format, so any text (letters) that is added falls away. The best solution would be to format the fields in a Currency format so that the Rand signs are automatically added.

- 14.3 Sibü is also frustrated because the zeroes in front of the cellphone numbers disappeared when she typed them. For example, 0834712321 became 834712321.

Explain why this is happening, and how to solve this problem.

- 14.3 The field has been formatted in a Number format, so the leading zeroes are ignored. The solution is to format the field as a Text field, so that the leading zero is retained.

- 14.4 What would have been the most appropriate data type to use for each of the following fields, based on the data stored in the fields?

14.4.1 PagesPrinted

14.4.1 Number

14.4.2 Email

14.4.2 Hyperlink (or Short Text)

14.4.3 OwnPC

14.4.3 Yes/no

15. It is crucial to try to prevent incorrect or invalid data being entered into a database. Sibü has already found a number of mistakes in the data that has been entered. Fortunately, database software such as Access provides a number of features to help reduce these errors.

- 15.1 What feature of the database could be used to ensure that every cellphone number consists of 10 digits?

15.1 Input mask.

- 15.2 Give two features or controls of the database that Sibü could use to ensure that only an 'M' or an 'F' is entered for the Gender field.

15.2 Validation Rule or a Combo Box (or List Box) control.

- 15.3 What feature of a database can Sibü use to ensure that a value for the Course field is entered for every new record added?

15.3 Setting the Required property of the field to Yes.

16. The following query was created to try to produce an alphabetical list of all the people, sorted first by surname, attending Course 1 or 2 where the total cost is R 100 or more.

Field:	Name	Surname	Course	TotalCost
Table:	tblData	tblData	tblData	tblData
Sort:	Ascending	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria or:			1 and 2	
				>R 100

List any four problems you see with this attempt at the query.

16. Any four of:

- The records are going to be sorted by Name first and then by Surname.
- The criteria for the course should read *1 or 2*.
- The Rand sign needs to be omitted from the criteria for the TotalCost.
- The relational operator should be \geq (to include 100).
- The criteria for the TotalCost should appear on the same line as the criteria for the Course.
- The Course field will not be displayed in the query, but this is not necessarily an error.

17. A database report needs to be produced with an alphabetical list of the names of all the people who attended Courses 1, 3, 7 or 10 (a list per course needs to be shown). The total number of people who attended each of these courses and the total number of pages printed (by everyone attending any of these courses) must also be shown.

Explain the process that needs to be followed and clearly indicate *how* and *where* you would add any functions needed to produce the required information.

17. Create and save a query to show the names and surnames of the people who attended Courses 1, 3, 7 or 10.

Create a report based on this query.

In the report, group the records by the Course field and sort the records alphabetically according to the Surname and Name fields.

Add the following Count function in the group header or footer of the Course field to total the number of people attending each of the courses: = COUNT(*)

Add a Sum function using the PagesPrinted field in the report footer to show the total number of pages printed.

18. Andrea wants to create a web page for the Vusani Trust and she is experimenting with HTML tags.

18.1 Briefly explain what HTML is. The meaning of the abbreviation is not required.

18.1 HTML (HyperText Markup Language) is a computer language for creating web pages (that can be displayed in a web browser).

18.2 How can one easily identify an HTML tag in a web page?

18.2 They are enclosed in angled brackets e.g. <h1>.

18.3 Assume you had an opening HTML markup tag of <x>. What would its matching end tag probably look like?

18.3 </x>

- 18.4 What does a web browser do with text that is not included in a markup tag?
- 18.4 It will try to display the text (literally – as it is).
- 18.5 Andrea has typed her first attempt at creating a web page in *Word*.
Explain in what format she would have to save the file so that it can be opened in a web browser?
- 18.5 In a (plain) text document with the file extension *.html*.
- 18.6 What are the <HTML> and </HTML> tags used for?
- 18.6 They are used to indicate where the HTML document begins and ends.
- 18.7 What is the significance or use of the <title> tag?
- 18.7 It is used to indicate the web page title which will appear in the web browser tab when the page is loaded.
- 18.8 What is the effect of adding the <hr /> tag?
- 18.8 It will cause a horizontal line to appear across the screen.
- 18.9 Explain why the following HTML code might cause a problem:
 <i> This is my first web page </i>
- 18.9 The end tags must be placed in the reverse order to the start tags :
 <i> This is my first web page </i>
- 18.10 Andrea does not understand the difference between the
 and <p> tags.
Explain to her what the difference is.
- 18.10 The difference is that the
 tag forces the rest of the sentence to start on a new line. The <p> tag creates a new paragraph and leaves space between the new line and the previous line.
- 18.11 Andrea came across the following HTML example in a textbook:

Explain exactly what this HTML element does by referring to each of the attributes.
- 18.11 It will display an image contained in the file smelly.gif. The image is 42 pixels high and 42 pixels wide. If the image cannot be loaded or displayed, the text 'Bad Smell' will be displayed.
- 18.12 Explain what the function of the following HTML element is:
Visit us!.
- 18.12 It would create a hyperlink on the text 'Visit us!' which would branch to the website <http://www.studyopportunities.co.za>
- 18.13 HTML code can be used to set the *cell padding* in a table.
What is cell padding?
- 18.13 It is the distance in pixels between the cell border in a table and the cell content.
- 18.14 What is the difference between the list tags and ?
- 18.14 is used to number items in a list and is used to add bullets to items in a list.