COMPUTER APPLICATIONS TECHNOLOGY

GUIDELINES FOR
PRACTICAL ASSESSMENT TASK

GRADE 11

2011

LEARNER INSTRUCTIONS

What is the PAT?

The PAT is a research project in which you will have an opportunity to demonstrate your information management skills. You will also be required to demonstrate your ability to use the applications which you have studied during the year to produce quality outputs in the form of:

- A description of the task
- A set of *quality* questions (See Annexure A)
- Identification of appropriate information sources
- Evaluation of *sources*
- Completion of a questionnaire (See Annexure B)
- Evaluation and sifting of *information*
- Management and analysis of data
- A report on computer security issues
- A presentation which summarises your findings and recommendations

The PAT will be done in three phases. Your teacher will provide you with dates and deadlines for each phase.

The PAT counts 25% of your final mark for CAT, therefore it is vitally important that you strive to produce work of a high standard.

Topic

Your local community has suffered damage or loss because of a lack of *computer security*.

The local community forum decided that it is their duty to create a greater awareness with regard to *computer security*. They decided to launch a campaign regarding computer security issues.

The main question they raised and would like to answer is:

What information and tips will inform the community with regard to computer security?

At a meeting they decided that investigation needs to be done to ensure that they convey the correct information. They brainstormed and noted some questions that could guide the sourcing of data and information needed to inform the community.

They also realized that they need to determine:

- What people in the community know about computer security and the risks involved.
- Community peoples' attitudes and behavior with regard to computer security and risks.
- Computer security risks in the community.

You were chosen as the project manager to drive this project.

The chairperson sent you the work done at the meeting with some notes and suggestions. The work done so far includes the following:

- Suggestions and questions to guide the sourcing of information (*Annexure A*).
- An outline of a questionnaire with notes that could be used to gather information about the community's attitudes and habits, knowledge and awareness with regard to computer security issues (*Annexure B*).

To ensure that the project is a success and meets the objectives as formulated in the main question, the chair person decided to divide the project into three phases.

An overview of the phases and tasks is given on page 4 of this document.

The instructions for the three phases are provided on pages 5–12 of this document.

After each phase you need to submit information and evidence on what you have completed.

The final report should, as a *minimum*, contain the following:

- A short description of what a computer security risk is together with some examples.
- Analysis of the questionnaire.
- General trends or patterns in attitude/behaviour and awareness/knowledge with regard to security issues as identified through the questionnaire.
- Information on security risks (at least two)—precautionary measures, solutions, tips, etc.—that seem to have the highest occurrence in the community (as identified through the questionnaire).
- Some other security risks (at least two) that you regard as important and that the people should be aware including precautionary measures, solutions, tips, etc.
- Supporting information such as (queries and report(s)) from a database regarding security issues or any other relevant issues).
- Tips
- Any other information that will address the problem and answer the main question.

Tasks

The project will need to be done in three phases.

Phase 1

In this phase you will have to:

- Define in your own words exactly what you are required to do.
- Finalise a list of *quality* questions (at least 15) to guide your investigation (*Annexure A*).
- Finalise the questionnaire (*Annexure B*).
- Identify sources to find *quality* information.
    - Use the questionnaire, the Internet and at least *one* other source to find data and information
    - Evaluate *sources* identified
- Administer the questionnaire to at least 15–20 people.
- Gather data and information.

Phase 2

In this phase you will have to:

- Evaluate, summarise and manipulate the *data* and *information* you have found from the Internet, the questionnaire and the other source(s).
- Process the data gathered from the questionnaire and any other data that should be processed using a spreadsheet.
- Create a database with information gathered to answer questions and provide reports.
    - Ideas for database:
        - Security risks
          Security threats, type, effect, link, e.g. for a press release or story, statistics, tips regarding the threat, etc.
        - Viruses
          Name of virus or threat, type, risk category, removal info available, etc.
        - Information on free security software, the URLs for these, etc.
        - Any other relevant database information.
- Look for patterns or trends.
- Plan the report.

Phase 3

In this phase you will have to:

- Interpret data and information, combine and remix the information to show your understanding and to answer the main question.
- Type up the report making use of good word processing techniques.
- Prepare a presentation, based on the report, to present to the community forum.

General

- For each phase you are expected to hand in your *own, original* work.
- Consult with your classmates and your teacher to ensure that your PAT is of a high standard.

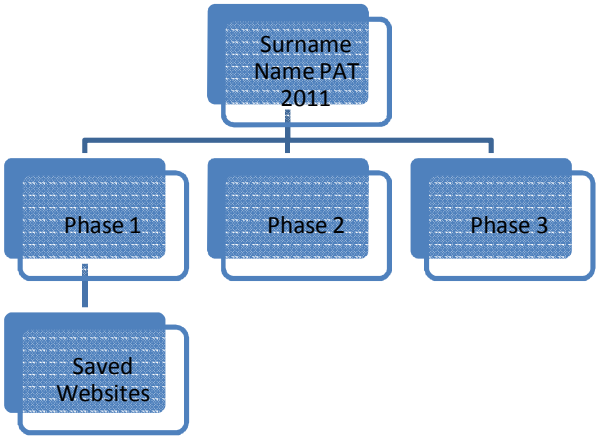
Instructions for Phase 1

This phase of the PAT consists of the following parts:

- Determine what needs to be done – get complete clarity.
- Create a list of *quality* questions to identify the information you will need for the project.
- Complete the questionnaire.
- Identify sources where the information could be found and gather the data and information.
- Evaluate the websites that you intend to use.

Define the *task*

1. Create a suitable file structure like the one below to save your work. It is your responsibility to ensure that you keep a backup copy of all your work.



2. Create word processing document for phase 1 in which to record your work in this phase. Give the document a sensible file name such as *Phase 1 Working Document*. Save it in the Phase 1 folder.

3. To be sure that you understand why you are doing this investigation, you should be able to define what you are required to do in your own words. This is called the task definition. Use the following questions to help you write your own task definition:

   - **Why** are you doing the investigation?
   - **What** are the main tasks that you need to carry out?
   - **How** will you go about it?
   - **What** information do you need?
   - **Where** will you find the information you need?
   - **Who** is the information for?
   - **How** must your information be presented?
   - **When** must the **task** be completed?

Ask questions that will guide your investigation

4. Read the main question that the community forum wants to answer. This should guide you to identify *quality* questions that will help you to find the information that you need.

5. Use the suggested questions provided (*Annexure A*) and evaluate these questions to determine the ones you could use. Keep in mind that you will also need data and information that would be appropriate to

- process using a spreadsheet
- capture and manipulate using a database—perform queries and generate reports.

6. Brainstorm some headings (at least four) which you can use to organise your information. The questions provided could help you to identify some headings (See chairperson's notes in *Annexure A*).

7. Add questions of your own to complete *your* list of questions (at least 15).

8. Evaluate the *quality* of the questions. Check for different types of questions or questions that show different levels of thinking, e.g. questions that will

   ①provide facts (who, when, where, what, how many, etc.)

   ②direct enquiry, examination, investigation (why, how, etc.)

   ③support predictions or help with adjustments (what if, if, etc.)

   ④support judgement or help to critique, review or find meaning (would it be better if, what recommendation, what would be best, etc.)

9. Discuss your headings and questions with your teacher or classmates.

10. Make your *own final* selection of headings (at least four) and questions (at least 15) which *you* will use to complete the project.

11. Check your final list against the task definition and the main question that has to be answered to make sure that you stay focused on the problem and the task.

Complete the questionnaire

12. Use the outline of the questionnaire with the notes provided (*Annexure B*) to complete the questionnaire.

13. The questions in the questionnaire should provide you with the information that you need specifically from the people in your community and will not find in other sources, e.g.

    - data that you could process to determine *their* behaviour or attitudes
    - what *they* know and have experienced with regard to computer security issues

14. Remember that questions with only one answer or questions where people can choose an answer from a list are often easier to process.

Gather information and data

15. Choose at least *four* headings with relevant questions from your final list.

    - For *each* heading complete a table like the one below.
    - Start *each* heading on a new page of your word processing document.
    - You must have *at least* 15–20 questions in total.
    - Indicate the type or level of thinking for each question to show that you have thought about the *quality* of your questions.
    - For each question, write down a possible source where you are likely to find the information for that question.
    - You should use the questionnaire, the *Internet* and at least *one* other source.

Heading: _____

No.	Question	Type/ Level	Possible source
1			
2			
3			
4			
5			
…			

FIGURE 1: EXAMPLE OF QUESTION AND SOURCE TABLE

16. Hand the questionnaire to at least 15–20 people.
17. Collect the questionnaires after they have been completed and file them in a safe place.
18. Save a copy of each website that you intend to use in the *Saved Websites folder.*
19. Gather all other information and data you will need to complete the project. Save electronic copies of the information and data where possible.
20. Evaluate the ***sources*** that you intend to use. For *each source*, complete a table like the one below to indicate that you have considered the trustworthiness of the *source*:
    - Complete a column for *each* website (you should use at least three).
    - Complete a column for other source(s) (at least one).

Source information	What to look for?	Example of response	Website1	Website2	Website 3	Other Source
Title of *source*, e.g. Website/Other source	*Website title or Title of article in magazine or title of book*					
URL/Name of source	*Web address or magazine name or publisher of book*					
Author and/or publisher of website/other source	*Author name and/or Publisher name (website)*					
Up-to-date?	*Website: Date updated? Other: Date of publication*	*Provide date or indicate not available*				
Any bias? (Type of website or printed material)	*E.g. Is it a commercial site/-print that tries to convince you to buy specific security software?*	*Yes No*				
Target audience	*Who is the website or printed material intended for?* *How difficult is the text?*	*Difficult to read/understand (for techies or specialists)* *Easy to read/understand (for general public)*				
Organisation of content (websites only)	*Did you come across any broken links?*	*No One or two More*				
Design (website only)	*Is it easy to navigate and find information?*	*Yes Some difficulty No*				
Trustworthy?	***Evaluate above criteria*** *Would you be able to use the source?*	*Yes No*				

You will need this information again in phase 2 when you evaluate the *information* provided in the the source

You will need at least three trustworthy websites and one other trustworthy source for

FIGURE 2: EXAMPLE OF *SOURCE* EVALUATION TABLE

Note: If any of the sources are not trustworthy you may need to find more sources for Phase 2

Hand-in for Phase 1

Once you have completed phase one of the project:

1. Submit your entire PAT folder to your teacher. The following should be in your Phase 1 folder:

   A *single* document typed in a word processor with

   - Your task description
   - A table (see example above) for each of the headings you chose
   - A table (see example above) for each website and other resource that you intend to use
   - The completed questionnaire

2. Copies of websites you intend to use; saved in the appropriate folder.

3. You must also hand in a file or plastic sleeve containing your completed questionnaires as well as any other evidence which could not be saved electronically.

4. Your teacher will give you the date on which to submit your phase 1 for assessment.

Instructions for Phase 2

There following are parts to this *phase*.

- Evaluate and summarise all information found from *trustworthy* sources.
- Plan the report
- Use information found and gathered and create a database with relevant information that could be queried and provide reports.
- Analyse the survey results in a spreadsheet

Engage with and use information and data

1. Evaluate the *quality* of the information you found in the *sources* that you identified as trustworthy in phase 1. For *each source* (e.g. website, article in magazine, etc.) complete a table like the one below to indicate that you examined the *quality* and *usefulness* of the ***information*** *provided in the source (content* of the sources that you are now going to use*)*.
(*Some information can be copied from the table in phase 1 as it is repeated for completeness*)

   Note: You may not copy and paste any information from the websites or other source into your phase 2 document. If you do, you will not earn any marks for this section of the task.

Source detail and criteria to evaluate *information* in source	**What to look for?**	**Example of response**	**Website1**	**Website2**	**Website3**	**Other Source**
Title of Website/ Other source	*Website title or Title of article in magazine or title of book*					
URL/Name of source	*URL (website) or name of magazine or publisher of book, etc.*					
Authority ***Who is the author?/ Publisher (website)***	*Write name of author and/or publisher* *Is the person a specialist or is the information from a reputable organisation, e.g. university*	*Name* *Yes— motivate* *No—motivate*				
Date Accessed/ Date of publication	*The date that you extracted the information for use(web) or date of publication (other)*	*Write down the date*				
Currency ***Up-to-date or still relevant?***	*Date last updated or date of publication.* *If "old", could it still be relevant?*	*Write date* *Yes* *No*				
Brief summary of information	*Must be done in your **own** words*	*Summary of **relevant** information*				
Accuracy of information	*Can the facts be verified, e.g. are there links to other websites/other sources given that confirm the facts?*	*Yes* *No*				
Objectivity	*Is there any bias?*	*Yes/No*				
Coverage ***Which questions could be answered using this information?***	*How well does it cover the the information that you need?* *Check information against questions and other information needs*	*Heading 2, Q 4* *H3, Q 1* *Use in database* *Process in spreadsheet*				
Useful?	**Evaluate the above** *Would you be able to use the information or some of the information in the source?*	*Yes* *No*				

You will need this information for your list of references

These should be sources identified as trustworthy in phase 1

FIGURE 3: EXAMPLE OF *INFORMATION* EVALUATION TABLE

2. Record all the information you need to create a list of references.

3. Make sure that you have evidence of the source(s) you used.

Plan the report

4. Create a report outline or use a diagram, mind map or storyboard:
   - Indicate which information will be used in the database and what queries and reports will be done.
   - Plan the introduction—provide key words.

- Plan the body—use the headings and questions from phase 1and indicate which information could be organised under each heading.
- Plan the conclusion—provide key words.

Process data and analyse questionnaire results

5. Analyse your questionnaire results in a spreadsheet.

    - Capture the questionnaire results in a suitable format.
    - Make use of suitable formatting to ensure that anybody will be able to easily interpret the results.
        - Make use of formatting features such as colour, borders, word wrap and font styles.
        - Make sure that column and row headings are formatted differently to other data.
    - Make use of formulae and/or functions to answer data questions.
    - Summarise the results.
    - Use a column/bar or line graph or a pie chart in your spreadsheet program:
        - Illustrate a summary of your questionnaire data or results graphically—you should have a least *one* graph, although more would be useful.
        - You should be able to use these graphs in your report and presentation.
        - Apply what you have learned in Mathematics/Mathematical Literacy when creating the graphs.

6. Process and analyse any other information or data that may require the use of a spreadsheet.

7. Save the spreadsheet in your Phase 2 folder. Make sure that you use a meaningful file name such as *Questionnaire Analysis*.

Generate queries and reports

8. Create a database with a meaningful filename and save it in your Phase 2 folder. The information must be relevant to the investigation. See page 4 for additional information.

    - Capture appropriate data and information (at least 15 records) that could be used to answer or support questions.
    - Make use of appropriate fieldnames and data types.
    - Create queries (at least two) and at least one report to provide information or answer questions—you should be able to use the information obtained from these queries and report(s) in your final report and/or presentation.

Hand-in for Phase 2

Once you have completed phase two of the project:

9. Submit your entire PAT folder to your teacher. The following should be in your Phase 2 folder:

    - The completed spreadsheet with the analysis.
    - The completed database with relevant queries and report(s).
    - A *single* document typed in a word processor showing
        - a table (see table above) with summaries of information and notes regarding the *quality* and usefulness of the *information*
        - reference information
        - information for database and what queries and report(s) to expect
        - the planning of the report

10. Your teacher will give you the date on which to submit your phase 2 work for assessment.

Instructions for Phase 3

There following are parts to this phase.

- Interpret data and information, combine and remix the information to show your understanding and to answer the main question.
- Type up the report making use of good word processing techniques. Use your own words.
- Prepare a presentation using a presentation program such as PowerPoint.

Report

1. Create a document in your word processor. Save this document in the Phase 3 folder using a meaningful file name such as *Report Computer Security*.

2. Apply your word processing skills you have learned to produce a *quality* document. Take note of the style guide – see *Annexure C*.

3. Your report must consist of the following

    - A title page

    - A table of contents

    - Use your planning from phase 2 to complete the report. The following outline could be used:
        - Introduction
        - Body
            - Headings from phase 1 and 2 with appropriate and relevant information under each heading as well as supporting evidence such as graphs, tables, data, etc. where appropriate.
            - Interpret and integrate information where necessary.
            - Look at the sequence and flow of the information.
            - The information you give *must* be written in your own words.
            - You will be heavily penalised if you copy and paste large chunks of text directly from the Internet or any other source. Plagiarism is totally unacceptable.
            - Be original and creative.
        - Conclusion
        - List of references.
            - Make use of either the Harvard or APA referencing style.
            - The information you need should be found in the summary documents you created in phase 1 and/or phase 2.

    - You are free to organise the information in any logical and coherent way if you wish.

    - Use of graphics and/or graphs
        - The graphics and/or graphs included must be meaningful and add value to the document.
        - Graphs, tables, data, summaries, etc. must be easy to read and interpret.
        - Provide captions.
        - Graphics obtained from the Internet or other sources must be acknowledged.

    - Use a word processing function to insert page numbers into the footer of the document. Page numbers should not be used on the title page.

Presentation

4. Create a presentation in your presentation program. Save it in your Phase 3 folder making use of a meaningful file name such as Forum *Computer Security*.

5. Your presentation should have at least the following slides
   - A title slide
   - A contents slide
   - Introduction
   - Different slides discussing the different ideas or concepts
   - Questionnaire results
   - Conclusion and recommendations

6. The presentation should be a summary of the report. Large amounts of text are not required. You should not simply copy and paste what you did in the report into the presentation. You will be penalised heavily for doing this.
   - Use hyperlinks to other information should you need to show or discuss more detail.
   - Make sure that your presentation has a consistent appearance.
   - Similar elements on a slide such as headings should be formatted in the same way.
   - Slides should have the same background.
   - The text on each slide must be easy to read when projected onto a screen in a classroom.

7. Add graphics and/or graphs or tables where appropriate.

8. Choose an appropriate transition effect and apply it to all slides except the title slide.

9. Apply appropriate animation to **no more than one** element on each slide.
   - It is not considered good style to animate headings.
   - Remember that the presentation is for the community forum members. Make sure that the animations you choose are appropriate and are not distracting or disturbing.
   - The timing of the presentation must be controlled by the presenter. It should not run automatically.

Hand-in for Phase 3

Once you have completed this part of the project:

10. Submit your entire folder to your teacher—make sure that the spreadsheet, database, report and presentation are saved correctly.

11. Hand in the file containing the completed surveys as well as any other evidence you have collected.

12. Your teacher will give you the date on which to submit your phase 3 work for assessment.

You should have completed and submitted this project before you start your end of year examinations.

Not submitting your PAT will mean that your marks will be incomplete and will affect your results and promotion to the next grade.

Annexure A

Notes from meeting

The community forum made the following decision:

We need to protect the people in our community from suffering loss or damage because of weaknesses in computer security that could be the result of poor knowledge and *don't-care* attitudes regarding computer security threats.

After reading the article about South Africa's position regarding cyber crime, this project is prioritised: http://www.news24.com/SciTech/SA-ranks-high-in-cyber-crime-20110327-2

So, what can we do? The forum needs to find information about computer security that it could use to inform the people in the community.

Questions brainstormed by forum members regarding the information they might have to find:

- ? How could one describe *computer security risk?*
- ? What are the types of computer security risks?
- ? What damage could be caused?
- ? How does one minimize the risks?
- ? Do people care about computer security?
- ? How do these risks infiltrate a computer?
- ? What recommendation could we make regarding computer settings?
- ? Why are the people tricked into exposing themselves to security threats?
- ? Do people realise the damage that lack of security could cause?
- ? How are people tricked into exposing themselves or their computer system to security threats?
- ? If people are informed, would they be more cautious or more likely to protect their computers?
- ? How many people make use of security software?
- ? Etc.

Need to group related questions together. Maybe identify headings for the questions?
One could be **Computer Settings to minimize risks**

Some of the questions could be answered using the questionnaire.
Carefully break them down into simple data questions for the questionnaire that will give you the answer to these 'bigger' questions

Here is a link to some information that could help, but you need to find more.

http://www.pcworld.com/article/157106/17_highrisk_security_threats_and_how_to_fix_them

Annexure B

Questionnaire outline

From the decision made and questions that the forum members brainstormed, I have suggested a few questions for the questionnaire. Look at them and see if you could use them

Remember that we need responses that will tell us what they know and how they behave, such as whether they use or update security software

It would be appreciated if you would take the time to complete this survey. The information will be treated confidentially. You do not have to supply your name.

Write your answer in the space provided.

Gender: _____ (M for male, F for female) Age: _____ (In years)

1. Do you know what a computer security risk is? Choose an item.
2. How likely do you think it is that your computer could be exposed? Choose an item.
3. Does your computer have security software installed? Yes/No
4. How often is the security software updated? Choose an item.
5. Have you ever downloaded software offered for free? Yes/No
6. Etc.

The questionnaire needs proper formatting. Use only one page!

People should know exactly what to do and how to complete it

The questionnaire needs to be organized better, e.g. related questions could be grouped—it needs a better format.

I would also suggest that you place the groups under appropriate headings.

It also needs proper formatting

Thank you for completing the questionnaire.

Keep questions simple—avoid double barreled questions—questions that require more than one answer.

Try to use questions with fixed answers.

Use boxes that they can tick or lists from where they can select—think carefully about the range or list of answers that you provide

It could be a good idea to first give the questionnaire to a friend to complete and ask you questions on what is not clear. Then improve it.

Annexure C

Style guide for word processing documents

Title page

- Text should be centred both vertically and horizontally on the page
- Text should be **typed** using a font size of about 20 pt.
- This should be the only page on which you make use of a page border.
- Avoid "arty" borders and backgrounds.
- Do **NOT** use Word Art/Text Art.

Headings

- The font used should be easy to read, e.g. Cambria
- Different levels of headings should be clearly distinguished.
- Font size should vary between 12 to 18 pt.
- Ensure that headings stand out clearly from other text.
- Make use of heading styles from the quick styles gallery (Office 2007/2010) for easy and quick formatting of headings and to ensure that headings are formatted in a consistent way.

Body text

- Use a font that is easy to read and that are the same as the heading font or matches the heading font, e.g. Calibri.
- Font size should not be larger than 12 pt and not smaller than 10 pt.
- Ensure that all body text is formatted in a consistent way. Using styles from the quick styles gallery would help to ensure consistency.
- Body text should be distinguished from headings.
- Body text should be left aligned.

Page layout

- Use word processing functions to add page numbers.
- Make use of page breaks to start new pages.
- Make use of lists where appropriate to support readability.
- Use sufficient white space.
- Tables, charts and other graphics should have appropriate captions.

General formatting and editing

- Keep it simple—this is not an art or design competition—it is the quality of the report and content that matter.
- Spell check your document. Professional documents are error free.