Text your knowledge – Chapter4

Problem-solving methodology

1   **What are the benefits of collaborative problem solving?**
    It enables people to work together in teams, and allows for many ideas to be put forward and enables creative solutions to be found.

2   **List three characteristics of a group formed to solve a problem**
    It is important that the group have a common purpose and that all the relevant parties be involved in developing the ideas. At the same time, it is important that membership of the group be voluntary.
    Once the group is formed, it is important to get the process right. Everyone must have equal access to the relevant information and the each member of the team should be respectful of the contributions and viewpoints of others. Finally, the goals should be achievable and the project needs to be time-limited. It is important, too, that the participants are accountable for what is accomplished.

3   **What is a virtual team?**
    A virtual team is a group of people working collaboratively to solve a problem. The people working on this project are not located in the same physical space.

4   **Describe the technology that has enabled people who live apart to work in a team environment.**
    Internet access, bandwidth, a computer.

5. **What are the requirements for a virtual team to operate?**
    A virtual team of people can be based in many locations and through the use of networks, people can share files and communicate with other members of the team. Therefore the requirements of a virtual team are a computer, a network, bandwidth and email access.

6. **Why might some people feel uncomfortable about working in virtual teams?**
    People no longer need to work in the same location in order to work as a team. This means that some people feel uneasy to work with people who are not physically accessible in the same building.

7. **What is groupware?**
    Groupware software provides a medium for groups of people to work together and share information.

8. **Describe the recipient routing processing where email is used to review a document.**
    Allows users to review a document and send it via email to everyone else on the routing slip list. Once the document has passed through to all recipients on the list, it is sent back to the original sender.

Analysis of a Problem
List and describe the activities that are involved in the analysis of an information problem.
1. Define the type of organization
2. Describe how the organization works
3. Define the problem
4. Consider the format of the solution
5. Define the benefits to the organization in redesigning the website.

Design of a Solution
1. **List the input data requirements for a website that plans to sell pharmaceuticals online.**
    Name of pharmaceutical products, cost of each product, information about each product, a picture of each product,.

2. **List and briefly describe the properties that need to be considered when designing navigation.**
    Once organisation of a website is planned thoroughly, the **navigation** paths need to be planned. The following need to be considered when designing navigation:
    Accessibility - Given there are many different versions of internet browsers, and different versions of plug-ins, it is advisable to avoid using special effects created in software like Flash, Java, or JavaScript as the only navigation method. The website needs to be accessible to all visitors, and this is especially true of navigation techniques.
    Meaningful
    The labels of icons used for navigation should be meaningful and the links need to be clear.
    Understandable
    If images are going to be used for navigation instead of words, then these images need to be commonly used and understood universally.
    Consistent
    To ensure that the website remains consistent and has a similar feel about it on all its associated pages, navigation should appear on every page of the website.

3. **What is included in a mock-up diagram?**
    A mock-up diagram is drawn up in a software package with headings in place, and spaces left for the text that needs to be inserted.

4. **What elements are included on a storyboard?**
    Storyboards show general screen designs, the placement of graphics and describe actions and links to other pages. The main part of a storyboard is the drawing of what the site should look like.
    •   the title/heading
    •   page file name
    •   the client's name
    •   the designer's name
    •   the page number

- the background colour code/image file name
- screen dimensions
- the purpose/description
- a list of required image file names and their memory size
- a list of the required link file names.

5. **What is the difference between a storyboard and a layout diagram?**
A storyboard is a tool used to design the features of each individual page. A layout diagram provides a visual representation of how the final designed product should look.

6. **What is the purpose in using a site map when creating a large website?**
A sitemap is a graphic representation of how each page of the website links together. It gives the designer an overall picture of how large the website will be and how each page is linked.

7 **Draw a site map for your school's Internet pages.**
Students need to research this question.

8. **Why does particular attention need to be given to naming files?**
Working with WebPages generally means that there will be many files to work with. Filenames should be unique and meaningful so that files can easily be located.

9. **What information should be included on the index page of a website?**
- **Contact email address**
- **date of last modification to the website**
- **author or company name and contact details**

10 **What is the difference between formats and conventions?**
To **format** information means to create and/or change the appearance of a document by altering features such as fonts, margins, spacing, columns, tables, graphics, borders, page numbers, headers and footers. Formatting looks at the presentation of the layout and its suitability.
Conventions are simply formal ways of displaying information. They are rules that people follow when creating information products. An example of a convention is the way envelopes are addressed before mailing.

11 **List five conventions that are used in web page design.**

Screen Size
Selecting the correct screen size is necessary. Even though the screen that the website is designed on may be quite large, it is important to remember that some users have smaller size screens. The bottom of the index page should contain the recommended screen size for best viewing. The length of a line of text should not be longer than 60 characters (10 or 11 words). This enables monitors with a variety of screen settings to display the text.

The Index Page

The index page of a website should contain important information to users such as:

- a contact email address

- date of last modification to the website

- author or company's name and contact details.

The user should not need to scroll any page more than two average screen lengths. If the page demands more information than two screens it should be divided into several pages.

Use bold and italics sparingly. They are solely for emphasis of important words.

Avoid underlining words: they may be confused with hyperlinks.

Each page in the website should have consistent navigation buttons.

12. Why do most navigation text links change form blue to purple after being accessed?
It is generally accepted practice that the colour of visited links change when a visitor has clicked on it before. An indication of past navigation helps users understand their current location. Knowing where the user has visited previously makes it easier to decide where to go next and frees the user from unintentionally revisiting the same pages over and over again.

Developing a Webpage
1. What is a prototype website?
A prototype website is a small aspect of an entire website. It provided a sample of how the entire website will look and work. It does not contain any of the backend work such as databases that are associated with.

2. List the manipulation techniques that might be required when creating a webpage.
Image compression
Cropping and resizing images,
Copying data from a word-processed document – reformmating it and placing it on a webpage.

Testing and Evaluation
1. Why does testing come before evaluation?
Any problems are found and fixed before the product or solution is released. After a period of time when the product has been used of r awhile, the product is evaluated to ensure that works the way it was intended to.

2. **What atributes of a website should be tested?**
   - the solution works within the scope of expected data and produces the required output
   - wrong or unexpected data is rejected
   - variations in graphics images fit templates, such as pictures fitting a particular space
   - links work correctly
   - fonts, sizes, styles and spacing are appropriate
   - the message is clear. This particular test only applies to a small number of software tools such as desktop publishing, word processing, web page authoring and presentation software. Testing requires the creator of the product to ensure that the message they are conveying is not lost among other parts of the document and that the message is clear and concise.

3. **What are the three key questions that should be asked in the evaluation of a website?**
   - Are the users happy with the product?
   - Does the solution solve the original problem?
   - Are any improvements required?

Managing and Transmitting files

1. **Describe how encryption is used to secure information?**
   Typically, data transmissions are sent in a plain text format so that anyone who intercepts the message can read it. In order to disguise the true contents of a message, it can be encrypted by the use of an algorithm, so that it is a meaningless jumble of characters to anyone who receives it, apart from the intended recipient. This is a type of security software.

2. **What is the purpose of access hierarchy?**
   A Web server can have a number of hierarchies. The hierarchies can be subdivided into a various number of ways such as a "main", "secure" and a "project" hierarchy. In our example, a "main" hierarchy could contain most public on-line information. The "secure" hierarchy could WebPages where information needs to be secured. In this instance, encryption is desirable. Generally a secure website uses "https" rather than "http". When a browser sees a URL beginning with "https" it will attempt to connect to port 443, instead of port 80. It will also expect to negotiate encryption. All pages and data transferred in the hierarchy are sent encrypted. A "project" hierarchy may restricted access to user pages. The restrictions on access are intended to provide a small amount of protection.

3. **How does anti-virus software work?**
   Anti-virus programs work by scanning files for virus signatures (the recognized pattern of activity that a virus follows when it infects a machine) or for virus-like activity. Once detected, a virus may be automatically removed,

or a warning message flashed onto the screen prompting the user for further action.

4. **Describe a backup strategy that you would recommend to a small business.**
Backup plan may include:
- Daily tape backups that are reused each week.
- Separate weekly tape backups that are reused each month
- A monthly tape backup that is kept as a permanent record.

5. **Describe how a Check In/Check Out feature on web authoring software can be used to control file versions.**
In the web authoring software package Dreamweaver, the Check In/Check Out function allows authors to work on their copies of the website and to edit and upload as appropriate. The relevant file is 'checked out' by the editor and cannot be altered by anyone else until it is 'checked' in after editing.