



CAPACITARTE

Es ser líder de tu vida



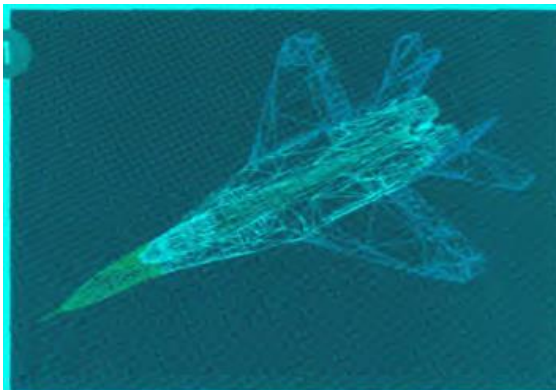
EJERCITACIÓN MÓDULO 4 – Clase 3

1. Graphics Software

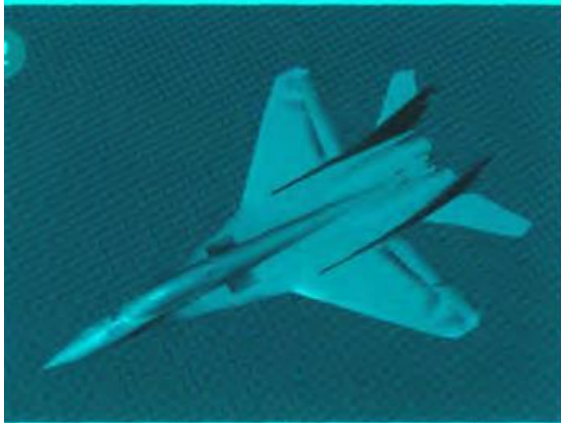
1.1 Match the tasks from the list (1-6) with the most appropriate graphics software for the task (a-f). Give reasons for your choice by using the expressions above.

1. to edit and retouch photos
 2. to create illustrations and drawings for a magazine
 3. to present
 4. to prepare slideshows for training sessions or conferences
 5. to make mechanical designs and architectural plans
 6. to create dynamic simulations and special effects for films, TV, advertisements and games
 7. to analyse geographic data and make maps
-
- a) Computer animation software, e.g. 3-D Studio max
 - b) GIS software, e.g. ArcView
 - c) Presentation Software, e.g. PowerPoint
 - d) A CAD package, e.g. AutoCAD
 - e) Vector graphics software, e.g. Freehand
 - f) A paint and image-editing program, e.g. Photoshop

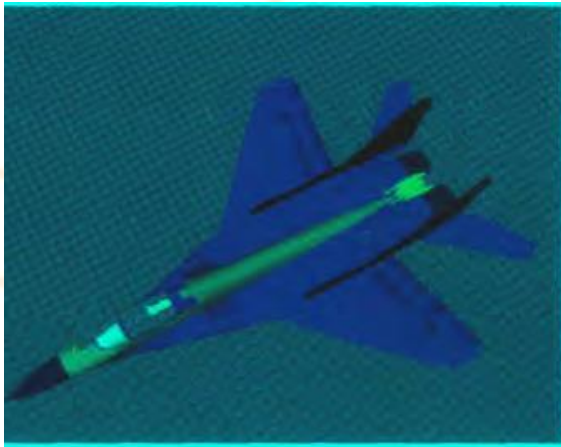
1.2 Look at the images (1-4) which show the stages involved in drawing a plane using computer software. Write a short description of stages 2, 3 and 4 using the expressions given above. The first step is done as an example.



1. This first image shows a **wireframe model**, made using CAD software. A wireframe is a drawing with edges and contour lines.



2. **Solid Modelling**



3. **Texturing the model**



4. **Rendering**

2. Multimedia

- 2.1 Have you ever used streaming audio technology? If so, note down three important features about it.
- 2.2 Describe advantages of using multimedia in a presentation.
- 2.3 Do you like video and computer games? Make a list of pros and cons.

3. Programming

3.1 Read the text again and answer these questions

It is a process of writing a program using a computer language. A program is a set of instructions which a computer uses to do a specific task.

The only language a PC can directly execute is **machine code**, which consists of 1s and 0s. This language is difficult to write, so we use symbolic languages that are easier to understand. For example, **assembly languages** use abbreviations such as ADD, SUB, MPY to represent instructions. The program is then translated into machine code by software called an **assembler**. Machine code and assembly languages are called **low-level languages** because they are closer to the hardware.

High-level languages, however, are closer to human languages; they use forms resembling English, which makes programming easier. The program is translated into machine code by a software called **a compiler**. Some examples are:

- **FORTRAN** was developed by IBM in 1954 and is still used for scientific and engineering applications.
- **COBOL** (Common Business Oriented Language) was developed in 1959 and is mainly used for business applications.
- **BASIC** was developed in the 1960s and was widely used in microcomputer programming because it was easy to learn. Visual BASUC is a modern version of the old BASIC language, used to build graphical elements such as buttons and windows in Windows programs.
- **PASCAL** was created in 1971, it is used in universities to teach the fundamentals of programming.
- **C** was developed in the 1980s at AT&T. It is used to write system software, graphics and commercial applications. **C++** is a version of C which incorporates object-oriented programming: the programmer concentrates on particular

things (e.g. a graphic or a table) and gives each object functions which can be altered without changing the entire program. For example, to add new graphics format, the programmer needs to rework just the graphics object. This makes programs easier to modify.

- **Java** was designed by Sun in 1995 to run on the Web. **Java** Applets provide animation and interactive features on web pages.

As explained above, programs written in high-level languages must be translated into machine code by a **compiler** or an **interpreter**. A compiler translates the source code into **object code** – that is, it converts the entire program into machine code in one go. On the other hand, an interpreter translated the source code line by line as the program is running.

It is important not to confuse programming languages with **mark up languages**, used to create web documents. Markup languages use instructions, known as **markup tags**, to format and link text files. Some examples include:

- **HTML**, which allows us to describe how information will be displayed on web pages.
- **XML**, which stands for Extensible Markup Language. While HTML uses pre-defined tags, XML enables us to define our own tags; it is not limited by a fixed set of tags.
- **VoiceXML**, which makes Web content accessible via voice and phone. VoiceXML is used to create voice applications that run on the phone, whereas HTML is used to create visual applications (e.g. web pages).

1. Do computers understand human languages? Why/Why not?
2. What is the function of an assembler?
3. Why did software developers design high-level languages?
4. Which language is used to teach programming techniques?
5. What's the difference between a compiler and an interpreter?
6. Why are HTML and Voice XML called markup languages?

4. Steps in writing a program

4.1 Put these programming steps into the correct order using the information given above

1. _____

2. _____

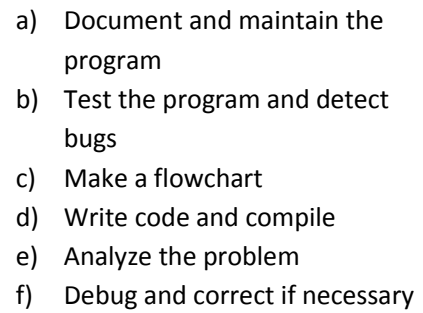
3. _____

4. _____

Does it work?

No. 5. _____

Yes. 6. _____

- 
- a) Document and maintain the program
 - b) Test the program and detect bugs
 - c) Make a flowchart
 - d) Write code and compile
 - e) Analyze the problem
 - f) Debug and correct if necessary

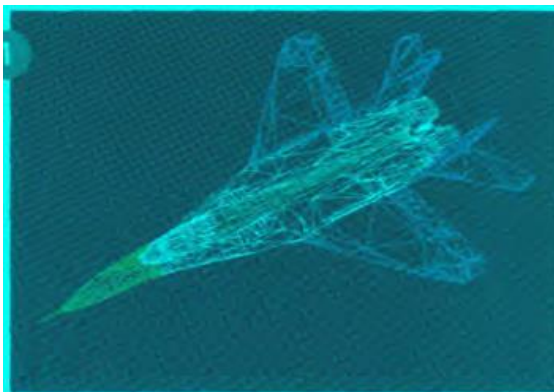
RESPUESTAS

1. Graphics Software

1.1 Match the tasks from the list (1-6) with the most appropriate graphics software for the task (a-f). Give reasons for your choice by using the expressions above.

- 1) to edit and retouch photos *A paint and image-editing program, e.g. Photoshop*
- 2) to create illustrations and drawings for a magazine *Vector graphics software, e.g. Freehand*
- 3) to present, to prepare slideshows for training sessions or conferences *Presentation Software, e.g. PowerPoint*
- 4) to make mechanical designs and architectural plans *A CAD package, e.g. AutoCAD*
- 5) to create dynamic simulations and special effects for films, TV, advertisements and games *Computer animation software, e.g. 3-D Studio max*
- 6) to analyse geographic data and make maps *GIS software, e.g. ArcView*

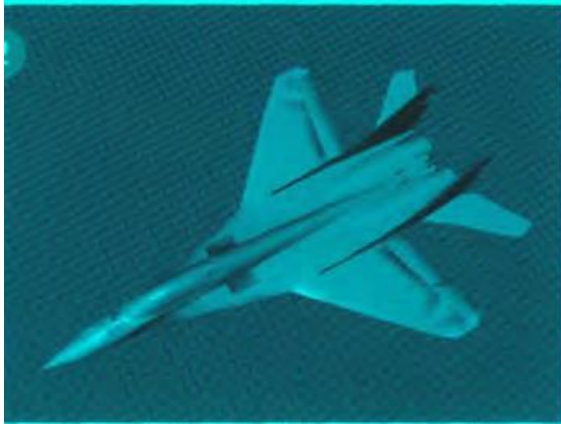
1.2 Look at the images (1-4) which show the stages involved in drawing a plane using computer software. Write a short description of stages 2, 3 and 4 using the expressions given above. The first step is done as an example.



1.

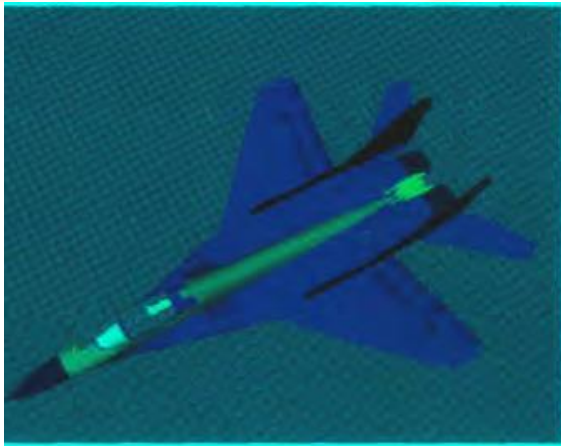
Wireframe model

This first image shows a wireframe model, made using CAD software. A wireframe is a drawing with edges and contour lines.



2. Solid Modelling

In this second stage, the designer has used solid modeling, which creates a three-dimensional representation of the solid parts of the object; now the aeroplane looks solid, with volume.



3. Texturing the model

The third stage is called texturing the model, which means adding paint and colour to the different areas. The designer has used dark blue and yellow.



4. Rendering

Finally, the design is rendered to make the plane look realistic. Rendering techniques include shading, light sources and reflections. The sky background adds realism to the picture. As a finishing touch, the designer might use animation to make the plane move.

2. Multimedia

2.4 Have you ever used streaming audio technology? If so, note down three important features about it.

2.5 Describe advantages of using multimedia in a presentation.

2.6 Do you like video and computer games? Make a list of pros and cons.

Possible answers

1. Yes, I have. I use the Encarta Encyclopedia.
It is interactive; there are thousands of articles with hyperlinks to other articles. It include photographs and maps, sound files and videoclips. It has a built-in atlas and dictionary.
2. In a multimedia presentation, the audience is not only informed but also emotionally involved; the message is more memorable.
3. Pros: video and computer games are amusing; they imply mental challenge; you can play online and interact with other people.

Cons: they show violence; they are addictive and create dependence; they may have negative effects on children.

3. Programming

3.1 Read the text again and answer these questions

1) Do computers understand human languages? Why/Why not?

No, computers don't understand human languages because the processor operates only on machine code.

2) Which language is used to teach programming techniques?

An assembler is a special program which converts a program written in a low-level language into machine code.

3) What's the difference between a compiler and an interpreter?

A compiler translates the source code into object code (machine code) in one go. However, an interpreter translates the source code line by line, as the program is running.

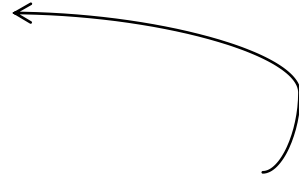
4) Why are HTML and Voice XML called markup languages?

Because they use instructions called markup tags to format and link text files.

4. Steps in writing a program

4.1 Put these programming steps into the correct order using the information given above

1. Analyze the problem
2. Make a flowchart
3. Write code and compile
4. Test the program and detect bugs



Does it work? No. 5. Debug and correct if necessary

Yes. 6. Document and maintain the program

