Noun-Verb and Verb-Noun Syntax

KNOWLEDGE OF CADD noun-verb and verb-noun syntax is fundamental to the software recognizing your requests. Verbs describe commands and actions, and nouns describe graphic elements or objects. The correct input sequence ensures that the software understands your request and creates the intended result. The programming languages displayed here require specific commands that are understood by a computer or computer applications.

Objective:

☑ Use noun-verb and verb-noun syntax.

Key Terms:

command
modifier
noun-verb selection
programming language
syntax
syntax of a command
verb-noun selection

Syntax in Computer-Based Applications

In computer science, **syntax** is the spelling and grammar of a programming language. It is the set of rules for symbols and words that are used in programming.

600139

NOUN-VERB AND VERB-NOUN SYNTAX

Typically, there are two ways to use syntax. Most CADD applications allow for a noun-verb or a verb-noun sequence. [NOTE: CAD and CADD are sometimes interchanged when referenced within the industry. In this lesson, the term "CADD" will be used to describe any computer-aided drafting or design software system.]

Noun-verb selection is a syntax sequence of an object (noun) first and an editing command (verb) second. Basically, you first select an object and then give a command to edit the object. CADD recognizes the selection, and you are prompted to the next step. **Verb-noun selection** is a syntax sequence of a command (verb) first and an object (noun) second. This works the same way as above, but in reverse order.

When working with computer applications, it is important to understand programming languages, commands, and modifiers for proper noun and verb syntax.

Programming Languages

Just as in the English language, programmers must word things in a specific order to portray a specific meaning. Being vague is not an option in programming. A **programming language** is a specific, universally known set of symbols, characters, and words that communicate commands to a computer or computer-related application. This language requires a certain order (syntax) of commands to carry out program functions. Proper syntax will also allow you to get the program response you need when designing or utilizing software.

```python
def add5(x):
    return x+5

def dotwrite(ast):
    nodename = getNodename()
    label=symbol.sym_name.get(int(ast[0]),ast[0])
    print '    %s [label="%s' % (nodename, label),
    if isinstance(ast[1], str):
        if ast[1].strip():
            print '= %s"];' % ast[1]
        else:
            print '"]'
    else:
        print '"];'
        children = []
        for n, child in enumerate(ast[1:]):
            children.append(dotwrite(child))
        print '    %s -> {' % nodename,
        for name in children:
            print '%s' % name,
```

FIGURE 1. In syntax, Highlighting and indenting are often used to aid programmers in recognizing elements of source code. Color-coded highlighting is used in this piece of code written in Python. (Photo: Courtesy of Xander89. Source: Wikipedia.)

Architects, engineers, drafters, artists, and others use CADD software to create precision drawings or technical illustrations, including two-dimensional (2D) drawings and three-dimensional (3D) models, by using programming syntax.

CADD software requires you to use specific words (commands) in a correctly formed syntax string. The syntax command structure of verbs and nouns used in design and drafting is very similar across most software and applications.

Commands

A **command** is an instruction issued to the computer to complete a specific task. In design software, this usually refers to a verb (the action) and a noun (the subject of the action).

600139

The **syntax of a command** is the set of rules, and the order of those rules, for a directive to run. This ensures the software understands your intentions. In CADD, syntax is an input command, via direct text or by selecting the desired function under its tab or heading. Syntax is based on a set of programmed instructions that direct how the software performs. Syntax dictates word order (noun-verb or verb-noun), and sometimes, a quantifier that modifies the function. It is similar to learning another language, but this one is specific to software.

CADD applications use a very specific set of verbs, nouns, and modifiers. The specific sequence in which they are input tells the software what to do, where to do it, and in what manner. The software must know what function to perform (the verb). It also needs to know what you want to create or modify (the noun.) For example, "draw" may be the verb and "line" may be the noun. Without the proper syntax, or use of words in a logical order, the computer software does not know which functions to perform.

Modifiers

A **modifier** is a word or symbol that refines the command, including width, depth, length, color, or location. The only way the software understands which function you want to perform is by inputting the nouns, verbs, and modifiers in the correct order. A slightly altered sequence will result in a different outcome than you desire.

Most CADD software prompts you in a specific order, lists its understood commands, and provides a range of modifiers. As a result, an operator can easily follow the steps and input the desired data.

The software uses a string of sequences to input this information—the proper syntax of a command. The series of commands results in a specific action and a graphic result. Modifiers can input specific changes in these commands, such as:

♦ A specific distance, as with the "move" command
♦ A specific color or thickness of a line
♦ An angle or shape of an object

FURTHER EXPLORATION...

ONLINE CONNECTION:
Using Syntax and
Command Input in CADD

Using syntax and command input is essential to understanding CADD drawing basics. The software understands specific nouns and verbs to execute functions. To learn more about syntax and command input, watch the CAD Master's YouTube video, "AutoCAD Drafting Input Methods," at https://www.youtube.com/watch?v=e8FVhMiwEfg.

Once you learn the basics of how to utilize these commands, you can quickly learn how to design and draw in CADD.

600139

SELECT OBJECTS USING SYNTAX

Now that you understand the functions of syntax, including nouns, verbs, and modifers, it is time to put that knowledge to use—first by grasping sequences and then selections.

Sequences

In CADD, noun-verb or verb-noun sequences are used. As established earlier, the syntax of a command tells the software in which sequence the task will be performed. This is important for drawing with CADD.

Whether the software calls for the noun or the verb to be selected first, you must use the appropriate terms and wording. Most software has pull-down menus available under general tabs for this purpose. These pull-down menus can help you learn commands and proper syntax that are recognized by the software.

Common verbs include copy, paste, rotate, move, mirror, and stretch. Once the command verb is input, a series of prompts follow. Prompts may be limited to one or two options (such as for the move command), or there may be several options for more complex actions (such as for the mirror command). For example, with the mirror command, the software may ask if you want to keep or to delete the original object. Regardless, the selection process is always the same—once an object and an action verb are input, any additional modifiers can be entered.

Selections

There are several ways to select objects based on syntax. Two common ways include verb-noun and noun-verb syntax. To use verb-noun syntax, follow this example.

♦ Type in the verb, such as "copy."
♦ Then, the software prompts for the object to copy.
♦ Once an object is selected, the software prompts for the object's new location.

A location can be input by using coordinates or by dragging the object with the cursor.

To use noun-verb syntax, follow this example.

♦ Select the object you want to copy with the cursor.
♦ Once the object is highlighted, the software prompts you for an action. Type "copy," (or select **Copy** from a given list) and press the Enter key.
♦ The software should then prompt for the object's new location. The location can be input using coordinates, or by dragging the object with the cursor.

Summary:

In computer science, syntax is the spelling and grammar of a programming language. It is the set of rules over symbols and words that are used in programming.

600139

Just as in the English language, programmers must word things in a specific order to portray a specific meaning. Being vague is not an option in programming. A programming language is a specific, universally known set of symbols, characters, and words that communicate commands to a computer or computer-related application.

Noun-verb selection is a syntax sequence of an object (noun) first and an editing command (verb) second. Basically, you first select an object and then give a command to edit the object. CADD then recognizes the selection, and you are prompted to the next step. Verb-noun selection is a syntax sequence of a command (verb) first and an object (noun) second. This works the same way as above, but in reverse order.

A modifier is a word or symbol that refines the command, including width, depth, length, color, or location. The only way the software understands which function you want to perform is by inputting the nouns, verbs, and modifiers in the correct order. A slightly altered sequence will result in a different outcome than you desire. Learning the correct sequences and selections for the nouns, verbs, and modifiers aids in drawing and design through CADD software.

Checking Your Knowledge:

1. Describe syntax in terms of computer science.
2. Explain noun-verb selection.
3. Explain verb-noun selection.
4. Describe the relationship between commands and programming language.
5. List common verb commands.

Expanding Your Knowledge:

A great way to learn about how to use syntax and commands in CADD is to follow the steps of a tutorial. Many syntax tutorials are available online that can walk you through the basics and enhance your skills. This allows you to learn and practice at your own speed.

Web Links:

AutoCAD Tutorial
https://www.youtube.com/watch?v=XRjWVyWpbhY

Modifying Commands and Osnaps
http://www.pxleyes.com/ext-tutorial/autocad/6033/Modifying-Commands-and-Osnaps.htm

Drawing and Modifying in CADD
http://www.mycadsite.com/tutorials/level_1/introduction-to-drawing-in-AutoCAD-tutorial-1-2.htm

600139