

1. What are the pros and cons of using unique closing reserved words on compound statements (such as **endif**, **endfor**, and **endwhile**).

Pros: Readability. When one sees an **endif** or **endwhile** in a program written by someone else, it is clear which block is ending. Using braces ({ and }) is less clear; especially when block cover many pages of code and there are several braces in a row. Braces are much harder to read; in particular to know which block is ending. Another pro is that it removed the dangling else issue. For example:

```
if ( <expr1> )
    if ( <expr2> )
        <stmt>
else
    <stmt2>
```

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To which if does the else belong? With the use of endif, there is no issue. For example:

```
if (<expr1>) then
    if (<expr2>)
        <stmt1>
endif
else
    <stmt2>
```

OR

```
if (<expr1>) then
    if (<expr2>)
        <stmt1>
else
    <stmt2>
endif
```

Cons: Writability. The use of these reserved words means that there are more reserved words. More reserved words means less words available to the programmer. It also means more words to learn.

2. In Ada, the choice lists of the **case** construct must be exhaustive so that there can be no unrepresented values in the control expression. In other words, the **others** clause (default case) is required. In Java and C/C++, unrepresented values do not need to be addressed (because the **default** is optional). What are the pros and cons of these two designs?

Pros of Ada's design: Reliability. The programmer must deal with all possible values. This prevents the programmer from inadvertently forgetting to deal with some values. It also increases Readability, especially as it pertains to Reliability. When a programmer is reading code that has a case construct, it is easy to miss the fact that unrepresented values are not dealt with.

Cons of Ada's design: Writability. The programmer may choose to have the program do nothing for unrepresented values. However, this is a very minor con since the default case can do nothing anyway. At least, requiring the programmer to include an empty default case, they must be explicit about the fact that they wish to do nothing for unrepresented values.