

Multiple Decisions – The switch Statement

On some occasions in programming it is necessary to make decisions from a large number of possible options. Although the if..else if combination will handle any decision, under certain circumstances, the switch statement may handle it in a simpler manner.

Example

if else statement	switch equivalent
<pre>if(age == 16) { printf("You can get your license."); } else if (age == 15) { printf("You can get your license next year."); } else if (age == 14) { printf("You can get your license in 2 years."); } else if (age == 13) { printf("You can get your license in 3 years."); } else { printf("You aren't thinking about a license yet."); }</pre>	<pre>switch(age) { case 16: printf("You can get your license."); break; case 15: printf("You can get your license next year."); break; case 14: printf("You can get your license in 2 years."); break; case 13: printf("You can get your license in 3 years."); break; default: printf("You aren't thinking about a license yet."); }</pre>

Special Notes

- Each of the 'cases' in the switch statement contains a break, which exits the switch when a match has been found. These are important; try to remove them and watch what happens.
- The switch can be used with integer or char data types. You can NOT use a float or a string in a switch statement.
- The default should always be used. It is like a 'catch-all' that ensures that at least something will be matched in going through the switch.

Exercises:

1. Write a program that prompts for an integer to be entered between 1 and 12 to represent a month. Use a switch statement to display the word for the month corresponding to that number. Don't forget the default case!
2. Write a program that allows an integer to be entered that is between 1 and 1000. If the number is outside this range, output an error message. If the number is correctly in the range, convert it to words. For example, 822 would be displayed as Eight Hundred and twenty two. This will get somewhat long and messy looking!