

Using tables and appendices information as a C++ syntax reference or tool for future code development

Table 2-1 Special Characters

Character	Name	Description
//	Double slash	Marks the beginning of a comment,
•	Pound sign	Marks the beginning of a preprocessor directive.
< >	Opening and closing brackets	Encloses a filename when used with the #include directive.
()	Opening and closing parentheses	Used in naming a function, as in int main()
	Opening and closing braces	Encloses a group of statements, such as the contents of a function.
	Opening and closing quotation marks	Encloses a string of characters, such as a message that is to be printed on the screen.
	Semicolon	Marks the end of a complete programming statement.

Table 2-2 Common Escape Sequences

Escape Sequence	Name	Description
\n	Newline	Causes the cursor to go to the next line for subsequent printing.
\t	Horizontal tab	Causes the cursor to skip over to the next tab stop.
\a	Alarm	Causes the computer to beep.
\b	Backspace	Causes the cursor to back up, or move left one position.
\r	Return	Causes the cursor to go to the beginning of the current line, not the next line.
\\	Backslash	Causes a backslash to be printed.
\'	Single quote	Causes a single quotation mark to be printed.
\"	Double quote	Causes a double quotation mark to be printed.

Table 2-4 The C++ Key Words

and	continue	goto	public	try
and_eq	default	if	register	typedef
asm	delete	inline	reinterpret_cast	typeid
auto	do	int	return	typename
bitand	double	long	short	union
bitor	dynamic_cast	mutable	signed	unsigned
bool	else	namespace	sizeof	using
break	enum	new	static	virtual
case	explicit	not	static_cast	void
catch	export	not_eq	struct	volatile
char	extern	operator	switch	wchar_t
class	false	or	template	while
compl	float	or_eq	this	xor
const	for	private	throw	xor_eq
const_cast	friend	protected	true	

Table 2-6 Integer Data Types, Sizes, and Ranges

Data Type	Size	Range
short	2 bytes	-32,768 to +32,767
unsigned short	2 bytes	0 to +65,535
int	4 bytes	-2,147,483,648 to +2,147,483,647
unsigned int	4 bytes	0 to 4,294,967,295
long	4 bytes	-2,147,483,648 to +2,147,483,647
unsigned long	4 bytes	0 to 4,294,967,295

Table 2-8 Floating Point Data Types on PCs

Data Type	Key Word	Description
Single precision	float	4 bytes. Numbers between $\pm 3.4\text{E}-38$ and $\pm 3.4\text{E}38$
Double precision	double	8 bytes. Numbers between $\pm 1.7\text{E}-308$ and $\pm 1.7\text{E}308$
Long double precision	long double*	8 bytes. Numbers between $\pm 1.7\text{E}-308$ and $\pm 1.7\text{E}308$

Pseudo code (design phase or algorithm development) to writing, testing and debugging source code (implementation phase)Sample in-class programming problems (lecture/lab Week#2)

1. Convert the following pseudo code to C++ code. Be sure to define the appropriate variables.

Store 30 in the *speed* variable.

Store 10 in the *time* variable.

Multiply speed by time and store the result in the *distance* variable.

Display the contents of the *distance* variable.

2. Convert the following pseudo code to C++ code. Be sure to define the appropriate variables.

Store 172.5 in the *force* variable.

Store 27.5 in the *area* variable.

Divide *force* by *area* and store the result in the pressure variable.

Display the contents of the pressure variable.

3. The all new "Tata Nano" two cylinder economy car with an overseas price of \$2500 is slated for the US. After necessary adjustments to meet US Auto safety standards this car will have a base price of around \$8000. Based on the current drive tests this automobile gives around 50 miles per gallon. Assuming the Nano has a 10 gallon tank how many miles can you drive with a full tank of gas? ...

Based on the above scenario write an interactive C++ program that will do the following:

- a. Provide Tata Nano's basic information including miles per gallon and fuel tank size as both a program comment as well as an output to the screen
- b. Ask the user the total miles currently driven
- c. Output to the screen the number of gallons remaining in the tank (rounded figure)
- d. Output to the screen how many more miles can the Nano be driven before another fill-up is needed.