Searc

TUTORIALS LIBRARY • # HOME When we consider a C++ program, it can be defined as a collection of objects that communicate via invoking each other's methods. Let us now briefly look

the behaviors/states that object of its type support.

- into what do class, object, methods and instant variables mean. Object - Objects have states and behaviors. Example: A dog has states - color, name, breed as well as behaviors - wagging, barking, eating. An object is an instance of a class.
 - Methods A method is basically a behavior. A class can contain many methods. It is in methods where the logics are written, data is manipulated and all the actions are executed. Instant Variables - Each object has its unique set of instant variables.

Class - A class can be defined as a template/blueprint that describes

- An object's state is created by the values assigned to these instant variables. C++ Program Structure:
- Let us look at a simple code that would print the words Hello World. #include <iostream> using namespace std;

```
int main()
  cout << "Hello World"; // prints Hello World
  return 0;
Let us look various parts of the above program:
     The C++ language defines several headers, which contain information
```

that is either necessary or useful to your program. For this program, the

The line using namespace std; tells the compiler to use the std

The line int main() is the main function where program execution

The next line cout << "This is my first C++ program."; causes the</p> message "This is my first C++ program" to be displayed on the screen.

namespace. Namespaces are a relatively recent addition to C++.

The next line // main() is where program execution begins. is a single-line comment available in C++. Single-line comments begin with

begins.

the steps given below:

file.

\$ g++ hello.cpp \$./a.out Hello World

entity.

x = y;y = y+1;add(x, y);

return 0;

y = y+1;add(x, y);

(0 to 9).

myname50

asm

auto

bool

break

case

catch

char

class

const

delete

double

dynamic_cast

Trigraphs:

Trigraph

??=

??/

??'

??(

??)

??!

??<

??>

purpose.

do

const_cast

is the same as

x = y; y = y+1; add(x, y);

C++ Identifiers:

containing file hello.cpp.

check Makefile Tutorial 7.

// and stop at the end of the line.

header <iostream> is needed.

// main() is where program execution begins.

The next line return 0; terminates main() function and causes it to return the value 0 to the calling process. Compile & Execute C++ Program:

Let's look at how to save the file, compile and run the program. Please follow

Open a text editor and add the code as above.

line and would generate a.out executable file.

Now, type 'a.out' to run your program.

Type 'g++ hello.cpp ' and press enter to compile your code. If there are no errors in your code the command prompt will take you to the next

Make sure that g++ is in your path and that you are running it in the directory

You will be able to see 'Hello World' printed on the window.

Open a command prompt and go to the directory where you saved the

You can compile C/C++ programs using makefile. For more details, you can

Semicolons & Blocks in C++:

opening and closing braces. For example:

cout << "Hello World"; // prints Hello World

Save the file as: hello.cpp

For example, following are three different statements:

A block is a set of logically connected statements that are surrounded by

In C++, the semicolon is a statement terminator. That is, each individual statement must be ended with a semicolon. It indicates the end of one logical

```
C++ does not recognize the end of the line as a terminator. For this reason, it
does not matter where on a line you put a statement. For example:
x = y;
```

A C++ identifier is a name used to identify a variable, function, class, module, or any other user-defined item. An identifier starts with a letter A to Z or a to z or an underscore (_) followed by zero or more letters, underscores, and digits

C++ does not allow punctuation characters such as @, \$, and % within identifiers. C++ is a case-sensitive programming language. Thus, Manpower

The following list shows the reserved words in C++. These reserved words may

new

operator

private

public

register

return

short

signed

static_cast

struct

switch

Replacement

#

1

]

ı

{

}

All the compilers do not support trigraphs and they are not advised to be used

template

reinterpret_cast

protected

this

throw

true

try

typedef

typeid

union

using

virtual

volatile

wchar_t

while

void

typename

unsigned

```
C++ Keywords:
```

abc

and manpower are two different identifiers in C++.

Here are some examples of acceptable identifiers:

a23b9

else

enum

explicit

export

extern

false

float

for

friend

goto

int

long

mutable

namespace

move_name a_123

retVal

not be used as constant or variable or any other identifier names.

continue if sizeof default inline static

A few characters have an alternative representation, called a trigraph sequence. A trigraph is a three-character sequence that represents a single character and the sequence always starts with two question marks. Trigraphs are expanded anywhere they appear, including within string literals and character literals, in comments, and in preprocessor directives.

Following are most frequently used trigraph sequences:

??-

because of their confusing nature.

Whitespace in C++:

A line containing only whitespace, possibly with a comment, is known as a blank line, and C++ compiler totally ignores it. Whitespace is the term used in C++ to describe blanks, tabs, newline

characters and comments. Whitespace separates one part of a statement from another and enables the compiler to identify where one element in a statement, such as int, ends and the next element begins. Therefore, in the statement, int age;

there must be at least one whitespace character (usually a space) between int and age for the compiler to be able to distinguish them. On the other hand, in the statement fruit = apples + oranges; // Get the total fruit

no whitespace characters are necessary between fruit and =, or between = and apples, although you are free to include some if you wish for readability