Computer Programming

With C++

Lab1 (Review)

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General Structure of C++ Program:

```
#include <fileName.h>
void main()
{
    ------
    ------
    ------
}
```

OR

```
#include < fileName.h>
int main()
{
    ------
    ------
    ------
    return 0;
}
```

Header Files

```
#include<iostream.h> //Needed for input & output....etc.

#include<conio.h> //Needed for getch() & clrscr() ....etc.

#include<math.h> //Needed for math functions.

#include <stdio.h> //Needed for gets();
```

Variable Identifier:

A valid identifier is a sequence of one or more letters, digits or underscore characters (_).

Identefier Conditions:

- Neither spaces nor punctuation marks or symbols can be part of an identifier.
- variable identifiers always have to begin with a letter
- Can not begin with a digit or _.
- cannot match any keyword(reserved word) of the C++ language nor your compiler's specific ones.(ex:break, case, catch, char, class).
- Representations for some operators cannot be used as identifiers.(ex:bitand, bitor, compl, not).
- **Very important:** The C++ language is a *"case sensitive"* language. That means that an identifier written in capital letters is not equivalent to another one with the same name but written in small letters.

Variable Declaration:

General Format:

<data type><identifier> [=<optional initialization value>];

Example:

```
int var;
char Letter;
int num=10;
char firstLetter = 'B';
```

Initialization of variables

❑**There are three ways to initialize the variable:**

1-Assignment statement after declaring a variable

Ex: int A,B ;

A= 10 ;

B=16;

2. In declaration statement:

c-like initialization(appending an equal sign followed by the value to which the variable will be initialized)

Syntax:

type identifier = initial_value;

Ex: int A=10 , B=16 ;

3. constructor initialization(enclosing the initial value between parentheses (()))

Syntax:

type identifier (initial_value) ;

Ex : *int* A (10);

Defining a constant:

- You can define constant by tow ways:

1. By #define directive

ex:

```
#define  PI  3.14  // Numerical constant
#define  LE  'A' // Non-numerical constant.
```

2. With the reserved word const

Const <data type> <identifier> = <value>;

ex:

```
const float PI = 3.14;
const char LE = 'A';
```

Input and Output in C++:

Input:

1. Input with **cin>>** // Instruction
2. Input with **gets( )** //Built-in Function

Output:

-Output with **cout<<** // Instruction

* **cin>>** *and* **cout<<** *require* #include<iostream.h> *at the beginning of the program while* **gets()** *require* #include <stdio>

Comments:

- Anything between /* and */ is ignored by the compiler (you can use it for comments in several lines and one line).
- You can use // for comments in one line only, not for comments in several lines…
- Comments don't end with a semicolon (;).

Some Built-in Functions:

- getch();
- clrscr();

* *These functions require* #include<conio.h> *at the beginning of the program.*

Escape sequences:

Escape sequence	*Meaning*
\n	Newline
\t	Horizontal tab (8 spaces)
\r	Carriage return. Position the screen cursor to the beginning of the current line; do not advanced to the next line.
\a	Alert.
\\	Backslash.
\'	Single quote.
\"	Double quote.

how to create new project in visual c++

Focus Please and see how to create new project in visual c++

exercise

Creating a project and adding Source File (.cpp file).•
•Main parts of any C++ program.
•Writing a simple C++ program (cout command).
•Adding Comments.
•Saving a C++ program.
•Opening already saved project (program).
•Printing the code (program).

exercise

code

```
// YourName, ID , YourSection
#include<iostream>
using namespace std;
int main()
{
    cout<< "Welcome to C++ ! \n";
    return 0;
} // end of function main
```