**DAILY ASSESSMENT FORMAT**

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| **Course:** | C++ Tutorials - Solo Learn | **USN:** | **4AL16EC030** |
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| **FORENOON SESSION DETAILS** |
| ***Image Section***   What is C++? C++ is a special-purpose programming language developed by **Bjarne Stroustrup** at Bell Labs circa 1980. C++ language is very similar to C language, and it is so compatible with C that it can run 99% of C programs without changing any source of code though C++ is an object-oriented programming language, so it is safer and well-structured programming language than C. C++ Program Before starting the abcd of C++ language, you need to learn how to write, compile and run the first C++ program.  To write the first C++ program, open the C++ console and write the following code:   1. #include <iostream.h> 2. #include<conio.h> 3. void main() { 4. clrscr(); 5. cout << "Welcome to C++ Programming."; 6. getch(); 7. }   **#include<iostream.h>** includes the **standard input output** library functions. It provides **cin** and **cout** methods for reading from input and writing to output respectively.  **#include <conio.h>** includes the **console input output** library functions. The getch() function is defined in conio.h file.  **void main()** The **main() function is the entry point of every program** in C++ language. The void keyword specifies that it returns no value. C++ Basic Input/Output C++ I/O operation is using the stream concept. Stream is the sequence of bytes or flow of data. It makes the performance fast.  If bytes flow from main memory to device like printer, display screen, or a network connection, etc, this is called as **output operation.**  If bytes flow from device like printer, display screen, or a network connection, etc to main memory, this is called as **input operation.** Standard output stream (cout) The **cout** is a predefined object of **ostream** class. It is connected with the standard output device, which is usually a display screen. The cout is used in conjunction with stream insertion operator (<<) to display the output on a console  Let's see the simple example of standard output stream (cout):  #include <iostream>  using namespace std;  int main( ) {   char ary[] = "Welcome to C++ tutorial";     cout << "Value of ary is: " << ary << endl;  }  Output:  Value of ary is: Welcome to C++ tutorial C++ Variable A variable is a name of memory location. It is used to store data. Its value can be changed and it can be reused many times.  It is a way to represent memory location through symbol so that it can be easily identified.  The example of declaring variable is given below:   1. int x; 2. float y; 3. char z;   Here, x, y, z are variables and int, float, char are data types.  We can also provide values while declaring the variables as given below:   1. int x=5,b=10;  //declaring 2 variable of integer type 2. float f=30.8; 3. char c='A';  C++ Operators An operator is simply a symbol that is used to perform operations. There can be many types of operations like arithmetic, logical, bitwise etc.  There are following types of operators to perform different types of operations in C language.   * Arithmetic Operators * Relational Operators * Logical Operators * Bitwise Operators * Assignment Operator * Unary operator * Ternary or Conditional Operator * Misc Operator  Precedence of Operators in C++ The precedence of operator species that which operator will be evaluated first and next. The associativity specifies the operators direction to be evaluated, it may be left to right or right to left. C++ Identifiers C++ identifiers in a program are used to refer to the name of the variables, functions, arrays, or other user-defined data types created by the programmer. They are the basic requirement of any language. Every language has its own rules for naming the identifiers.  In short, we can say that the C++ identifiers represent the essential elements in a program which are given below:   * **Constants** * **Variables** * **Functions** * **Labels** * **Defined data types**   **Some naming rules are common in both C and C++. They are as follows:**   * Only alphabetic characters, digits, and underscores are allowed. * The identifier name cannot start with a digit, i.e., the first letter should be alphabetical. After the first letter, we can use letters, digits, or underscores. * In C++, uppercase and lowercase letters are distinct. Therefore, we can say that C++ identifiers are case-sensitive. * A declared keyword cannot be used as a variable name.  C++ if-else In C++ programming, if statement is used to test the condition. There are various types of if statements in C++.   * if statement * if-else statement * nested if statement * if-else-if ladder  C++ If Example #include <iostream>  using namespace std;    int main () {     int num = 10;              if (num % 2 == 0)              {                  cout<<"It is even number";              }     return 0;  } C++ IF-else Statement The C++ if-else statement also tests the condition. It executes if block if condition is true otherwise else block is executed. C++ If-else Example #include <iostream>  using namespace std;  int main () {     int num = 11;              if (num % 2 == 0)              {                  cout<<"It is even number";              }              else              {                  cout<<"It is odd number";              }     return 0;  } C++ For Loop The C++ for loop is used to iterate a part of the program several times. If the number of iteration is fixed, it is recommended to use for loop than while or do-while loops. C++ For Loop Example #include <iostream>  using namespace std;  int main() {           for(int i=1;i<=10;i++){              cout<<i <<"\n";            }      } C++ While loop In C++, while loop is used to iterate a part of the program several times. If the number of iteration is not fixed, it is recommended to use while loop than for loop. C++ While Loop Example Let's see a simple example of while loop to print table of 1.  #include <iostream>  using namespace std;  int main() {   int i=1;           while(i<=10)         {              cout<<i <<"\n";              i++;            }      } C++ Do-While Loop The C++ do-while loop is used to iterate a part of the program several times. If the number of iteration is not fixed and you must have to execute the loop at least once, it is recommended to use do-while loop. C++ do-while Loop Example Let's see a simple example of C++ do-while loop to print the table of 1.  #include <iostream>  using namespace std;  int main() {       int i = 1;            do{                cout<<i<<"\n";                i++;            } while (i <= 10) ;  } C++ Comments The C++ comments are statements that are not executed by the compiler. The comments in C++ programming can be used to provide explanation of the code, variable, method or class. By the help of comments, you can hide the program code also.  There are two types of comments in C++.   * Single Line comment * Multi Line comment  C++ Single Line Comment The single line comment starts with // (double slash). C++ Multi Line Comment The C++ multi line comment is used to comment multiple lines of code. It is surrounded by slash and asterisk (/∗ ..... ∗/). Let's see an example of multi line comment in C++. |