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INTRODUCTION TO PROGRAMMING ASSIGNMENT

1. Definition of terms;

i)Compiler: it is a program that translates source code in programming language

code that a computer understand and execute.

ii)Source code: it is a human readable computer language containing

instructions and command telling computer what to do.

iii)Object code: is machine readable language that a computer can directly

execute.

iv)Linkers: are programs that help combine object code files into a single

executable program .

2.Using an example that is a program to add to number explain the compilation

process of a C program

* Writing the source code – start by writing source code.
* Preprocessing – compiler performs preprocessing.
* Compilation – compiler translate preprocessed source code into assembly code
* Assembly – takes assembly code converts it into object code.
* Linking – combines any required libraries and resolves external reference.
* Execution - run the executable file to run as specified in source code.

*Example ;*

**#include <stdio.h>**

**int main() {**

**int num1 = 9;**

**int num2 = 7;**

**int sum = num1 + num2;**

**printf("The sum of %d and %d is %d\n", num1, num2, sum);**

**return 0;**

**}**

**4.Difference between compliers and interpreter**

* **Compiler translate entire source code into machine code in a single language while translate and executes source code statement by statement.**
* **Compiler offers more control over memory management while interpreters handle memory management dynamically.**
* **Compilers provide less detailed error messages since they translate entire code at once while interpreters provide better error messages.**
* **Compilers often catch errors during compilation process itself while interpreters detect errors as they interpret and execute each line of code.**
* **Compilers have high execution speed while interpreters are slow.**
* **Compilers are time consuming as code needs to be recompiled after each change while interpreters offer faster development cycle as they allow quick testing and debugging.**
* **Compilers is more memory efficient while interpreters have high memory usage as they keep source code in memory while execution.**
* **Compilers are best suited for statically typed language requiring performance optimization while interpreters are more flexible when it comes to supporting dynamic and scripting languages.**

**5.List all main category of operators available in C programming.**

* **Logical Operators eg && || !**
* **Arithmetic Operators eg + - \* / %**
* **Bitwise Operators. Eg & | ^ ~**
* **Increment and decrement Operators.**
* **Assignment Operators.**
* **Relational Operators.**
* **Cast operators**
* **Size of operators**
* **Member selection Operators**
* **Pointer operator**
* **Comma Operator**
* **Conditional Operator**

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