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okay everyone so now we are learning the introduction to c programming

if we talk about the c programming c is the basics

and this is the language which is required by all other language

now if you talk about the introduction here

c was developed by the dennis ritchie so the name of person who

developed the c programming was denis ritchie

and where he developed he has developed into the

bell laboratories which was into the usa in 1972.

if you talk about the c c is the combination of two programming

languages the first is the

bcpl bcpl stands for basic combined programming language

and second language is b so out of these two languages one is the

bcpl which is basic combined programming language and second one is the

b the c was derived so this is the c

programming so we can say that c was developed from two languages called bcpl and b we know that there are multiple types of languages just like we are having the first type which is the hll called high level languages the other type is low level language we should understand very important thing we know that there are two things whenever we are working on a machine then there is a machine just like our computer and there is a user that means me or you who are working on the system so if we talk about the high level language these are the languages which are purely into the english language and if we talk about the low level language they are into the machine readable form so we can say that this is the machine language this machine language is further into two forms one is the binary we know that we are dealing with zero and ones this zero and ones are called the binary and second thing is called the assembly language just like many of the times we have seen that we used to write s and then afterward we used to write in the bracket one comma two so if we are writing some types of commands just like scan disk or maybe disk cleanup these commands are into the assembly language means they are not the purely english but they are some of the assembly so they all comes under the machine language so low level language contain machine languages which is the binary or assembly high level language is purely english but if you talk about the c programming language c programming comes in between high level and the low level which is called the middle level language so here we can say that the c programming is the middle level language which is having

both the properties of high level language as well as the low level language that means you can work with the code properly it is very readable code as well as this code is the machine friendly so you are having the assembly language also integrated into the c programming so c is the middle level language which work between the high level as well as low level so c programming combines the features of high level as well as lower level languages the second thing which is popular about the c programming language is that c is the structured programming language to understand the structure programming

Introduction to C Programming

- Developed by Dennis Ritchi at Bell Laboratories USA in 1972
- Developed from two languages BCPL and B
- **Middle Level Language**
Combines features of High Level and Low Level Languages
- **Structured Programming**

Diagram:

```

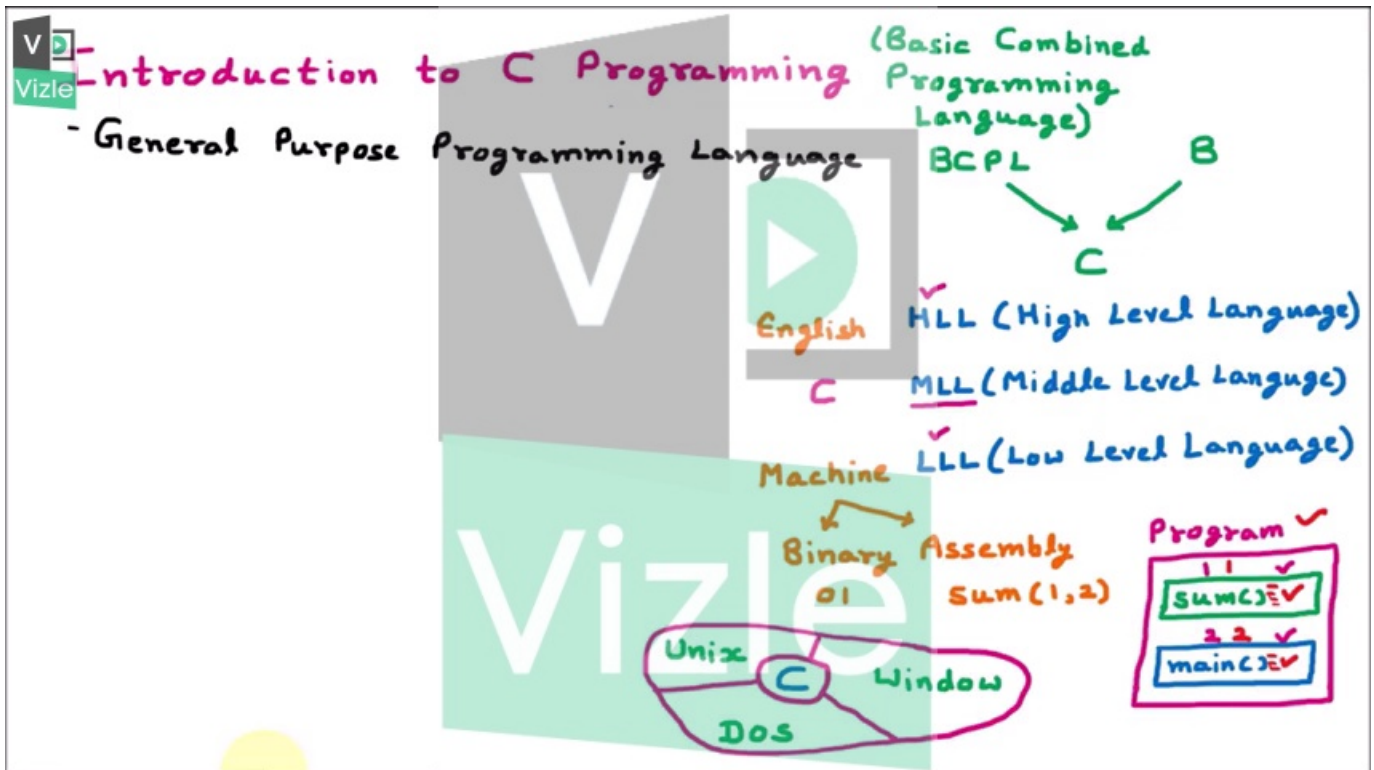
    graph TD
      BCPL["(Basic Combined Programming Language) BCPL"] --> C
      B --> C
      C --> HLL["HLL (High Level Language)"]
      C --> MLL["MLL (Middle Level Language)"]
      C --> LLL["LLL (Low Level Language)"]
      C --> Machine
      Machine --> Binary
      Machine --> Assembly["Assembly Sum(1,2)"]
  
```

English
Machine
Binary
Assembly
Sum(1,2)

i am taking one example here let us suppose that we are making a c program we know that the c program is having the main function so let us suppose that here we are having one block which is of main we are assing that we are having one more function available let us suppose that this function is for making the s of two nbers so here this block is for s now we can see that the program is c is very readable so here is the main function which is executing the main files now here it is the s s is a function who is only dedicated to the s of two nbers so everything is properly moduled module means this is the first module this is the second module module or the block whenever we are having separate separate coding areas for separate separate work they are called the modules or the functions so these are called the different different functions or the structure

so here in the c programming we provide the proper structure that this one is the main program this one is the function for making the s this one is a function for making a subtraction so program is divided into small small areas which is called the modules and this modules make the c programming is a structured programming so we can say that c is a structured programming language because it contain small modules or blocks which are called functions for the better understanding we can take that let us suppose that this is our c program in the c program we are having complete code we know that let us suppose that there are 10 lines of the code now out of these 10 lines first 10 lines we have made inside a function which is called s and afterwards the again 5 lines we have made into the main so here these are the two areas the first area and the second area of the code that means if somebody is coming to our code and we want to read that code you can easily see that the first lines these are for the s and other lines which are for the main so complete program is not made into a sequence here program is divided into small small blocks so that it is more readable and more understandable so these modules are the blocks which we have made in the program these are called the functions just like main is a function similarly there are multiple functions which we can define and whenever a programming language contains functions that is called the structured programming language

next thing about the c programming is that
c programming run with various operating system just like window unix dos and
many more but out of all the operating system
if we see then see here more close to the unix operating system
what is the meaning of close the close means if somebody is very near
to some person when we talk about the c programming c
programming was first designed for the unix
that's why it is more close if we are talking about the c it can run better in
the unix all the code of c match with the unix even the unix was designed into
the c programming so the code which was made behind the unix operating system is
the c so that's why c is more close to the unix but c can run on any of the
printing system it can be dos window unix or any other
so if we asse that this is our c programming language
it can work on the window unix
and dos if we talk about the next feature of the
c programming then c is called the general purpose programming language
if we talk about the general purpose that means it is going to solve the
general life things let us suppose that we need a calculator for solving our
daily problems and this calculator we can design with the help of c
programming let us suppose that we want a small
program with the help of that we want some thing



to be solved we can design it if you want to design some game

and we want a back-end coding we can design with the help of c programming

even with the help of c programming we can deal with the graphics

so this is a general purpose programming language with solar generally daily

basis problem so that's why it is called general purpose programming language

if we talk about the c then the next thing about the c is that it is also

called system programming language we know that whenever we are dealing

with the programming languages there are terms which are common just like

operating system interpreter compiler network driver editor database programs

these all things we can write from the c code that means if you know the c

programming you can easily make operating system interpreter compiler or

editor anything so we can write 4 for all of them

if we talk about the operating system then we know that we are having the unix

windows so we can design operating system with the help of c programming

interpreter and compiler these both are used to convert high level language into the low level language so interpreter work line by line and compiler work whole at a time so we can design them

network driver we know that there are so many networking elements just like you know that there are the wireless mouse so whenever you connect the wireless mouse automatically that takes the driver so from where that driver comes who write the driver it is the c programming so with the help of c you can write for that editors let us suppose that you are having some text editor maybe notepad so you can design that with the help of c programming database programs whenever you are linking your program with the database now at that time you need some kind of code so that code you can easily provide so it is a system programming language means you can design the system software you can design all types of drivers with the help of c programming

next thing about the c programming language is it contain variety of data types just like integer floating point or character

so if you talk about the data type that means which type of data c programming support so first one is the integer let us suppose that we are having some nber let's say 179 here we can see that it can be positive or negative but there is no decimal value so this is called integer then is the floating point or called float let us suppose that in this nber 179 i am adding one decimal and afterward i am let's say saying 32 now this complete nber is called floating nber any nber which contain decimal values is called the floating then is the character let us suppose that we are having the first character of my name

let us suppose we are having a character so that character we represent with the single quote so this is the character so character string floating point multiple data types are supported with the help of c programming language that means we can work with all such data in our program next thing about the c programming language is that it provide control flow statement to understand the control flow let us suppose we are having a c program inside the c program we are having some lines let us suppose that these are all lines printf scanf or maybe other lines which are present so these are the lines of the programming let us suppose that there is some kind of decision i want that first line should be executed but second line should not be executed so out of first and second line i am making a decision that first line should be executed and second unit is not let's say first is the even nber or not so it is a decision making let us suppose that i am giving you a nber let's say 10 so computer can answer that 10 is an even nber it will not answer that it is not a even nber but let us suppose that i am giving you a 7 computer will answer it is the not even nber it will not say you it is a even nber so out of even or not even only one answer can come so that is called the decision making i am taking one more example here let us suppose that you have made a c program in the c program it is asking a user to enter a nber now user entry nber now c program can answer it is a prime nber or not a

prime nber two answers are there but computer can answer only one
that means it is a prime nber or not a prime nber computer cannot give you
both the answers so here is the decision making and for the decision making we
are having the control statements which are the first one is if else
and second one is switch case let us asse that in the same program
we are having two lines which we want
these lines should be executed let's say multiple nber of times there
should be a loop let us suppose that i want to print my
name thousand times i will not write line of printf thousand
times i will simply apply the looping control structure
so here we will apply the loop if i want to repeat a task n nber of
times then we apply the loop
let us suppose i am taking one more example here
let us suppose i want to display the name of a student
100 times so it is not required to write printf

Introduction to C Programming (Basic Combined Programming Language)

- General Purpose Programming Language
- System Programming Language
 - Write code for OS, Interpreter, Compiler, Network Driver, Editors & Database Programs
- Contain variety of data types like Integer, floating point, Character etc.
 - 179 179.32 'A'
- Provide Control Flow Statement
 - Decision Making: if else, switch case
 - Looping

Language Hierarchy:

- BCPL (Basic Combined Programming Language)
 - English
 - C
 - HLL (High Level Language)
 - MLL (Middle Level Language)
 - LLL (Low Level Language)

Machine Binary Assembly

OS: Unix, C, Window, Dos

Program Examples:

```

Program ✓
1 1 ✓
SUMC)EV
2 2 ✓
mainC)EV
  
```

statement 100 times no we simply apply the looping and in the looping control structure we are having the statements which are for while and do while so with the help of this control flow statements we can control the flow of programming means if you want that there should be some kind of decision then you do the decision

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