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Dynamic
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Programming languages are two types 1. Statically typed programming languages 2. Dynamically typed programming languages statically typed programming languages
========== C,C++,Java are called statically typed programming languages. In statically typed programming langauges, variable declarations are required. every variable is declared with data type (OR) variable is bind with fixed data type. In statically typed programming languages programmers has to declare variables with data types. type is defined before compiling the program Dynamically typed programming languages ========== Python, Java Script, Perl are called dynamically typed programming languages. In dynamically typed programming languages there is no variable declarations. variable is not declared with any type, the type of variable is based on value type. type is not defined before compiling the program. type is defined at runtime (OR) during execution of program.
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Platform Independent
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Programming languages are two types 1. Platform Dependent Programming Language 2. Platform Independent Programming Language What is Platform? Platform is a software which provides development environment and execution environment for softwares or applications Operating System is called platform. Operating System acts as meditor between software and hardware. Platform dependent programming languages ========== In platform dependent programming languages development environment and execution environment must be same C,C++ are called platform dependent programming languages Why C,C++ are called platform dependent languages?
========== 1. C,C++ compilers generates binary code respective to OS (OR) Native code. This native code platform dependent code. 2. In C,C++ data representation changes from one os to another os. data representation is not same. Problem with platform dependent langauges 1. need to develop same application or code for multiple operating systems. 2. increase development cost Platform Independent Programming Languages
========== WORA (Write Once and Run Any Where) CORA (Compile Once and Run Any Where) ==> Python,Java,.Net are called platform independent langauges In platform independent programming languages development environment and execution environment may not be same. How Python achieves platform independent? 1. Python compiler generates bytecode 2. Compiled code of python source code is called byte code (OR) when python program is compiled, python compiler generates byte code 3. Byte code is collection of mnemonics (verbs). 4. Byte code is python virutal machine code. 5. Byte code is platform independent code, this code can be moved from one os to another os 6. PVM stands for Python Virtual Machine. PVM is a software provided by python PVM provides runtime environment for python programs. PVM provides a translator which converts/translates byte code into executable binary code.
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Interpreted
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Translators ========== What is translator? translator is a software, which converts instructions of one language to another langauge. Types of translators ========== 1. Interpreter 2. Compiler Interpreter ========== Interpreter is a translator, which translate and execute instructions line by line Interpreter perform the following operations 1. read 2. verify syntax 3. translate 4. execute if there is an error in one line, interpreter stops translation and execution. test codewithsatishgupta