

Variables, expressions, and data types

Technology, Information Technology



Variables Expressions and Data Types Programming and mathematics share the use of logic and development of algorithms to solve or complete a certain action or solve a problem. Applying mathematics in the program can be done through use of mathematical functions and algorithms like sorting, searching, use of induction in recursive algorithms and lambda calculus. Sorting algorithms are used in sorting arrays in an application or organizing names, and this makes searching for these values easier in a program. Mathematical sort algorithms are used to sort different data types, files or even URL.

Variables in applications are names that provide a program with a named storage that allows programs to manipulate them. Variables have specific types, and this determines the layout of the variable memory and its size. Variables can be local variables, instance variables and static/class variables. Local variables are declared in constructors, blocks or methods and are created once they enter these methods, constructors and blocks. Local variables are destroyed when they exit constructors, blocks or methods. Instance variables are declared in classes but outside of any blocks. Static variables are declared in classes like instance variables but with the keyword static. They are created when a program starts and destroyed when the program exits.

An expression in a program is a collection of variables, operators, constants, values and programming functions that will be interpreted according to rules of the associations that are specific to different programming languages. Expressions are computed to produce results to be stored in a variable. Data types define the kind of values that a variable can store. The values

stored can be integers, characters or strings. Data types in programming include primitive and reference data types. Primitive data types are those that have been predefined by a programming language and are named by a keyword. They include byte, short, integer, long, float, double, Boolean and char. Reference data types are created using defined constructors of a class. Reference variables are declared to a specific type and used in accessing objects. Default values of reference variables are always a null value.

Works Cited

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