

Assignment & Initialization

Assignment :- A basic operation for changing the binding of a value to the data object.

Languages like C, Lisp and many more

Assignment also returns a value, which is a data object containing a copy of the value assigned.

In Pascal

Assignment ($:=$) : $integer_1, \times integer_2 \rightarrow Void$

Value of $integer_2$ is copied in $integer_1$.

In C,

Assignment ($=$) : $integer_1, \times integer_2 \rightarrow integer_3$

With this action : Set the value contained in data object $integer_1$, to be a copy of the value contained in the data object $integer_2$, and also create and return a new data object $integer_3$, containing a copy of new value of $integer_2$.

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Two Concepts through which we can define assignment

L-Value: Location for an object

R-Value: Content at that location.

Using L-value and R-value gives a more concise way to describe expression semantics.

Eg In case of Integer :-

$$A = B$$

In this copying the value of variable B to variable A.

** i.e assign to the lvalue of A the r-value of B

In Case of Pointer

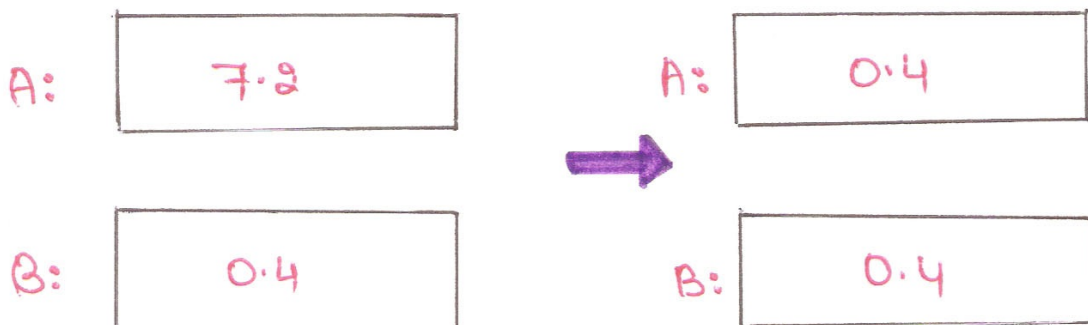
$$A = B$$

In this A & B are pointers variables. If B is a pointer then B's r-value is the l-value of some other data object. This assignment then means,

"Make the r-value of A refers to the same data object as the r-value of B"

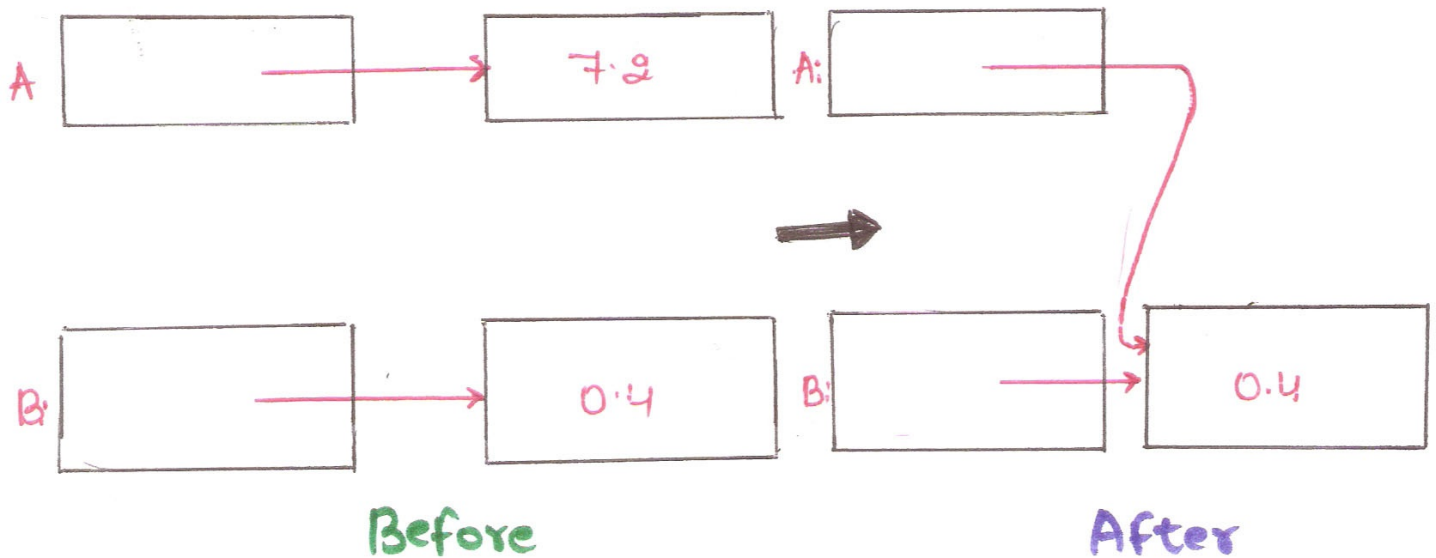
Thus, the assignment $A = B$ means "Assign a copy of the pointer stored in variable B to variable A".

Numeric Assignment



Copy Value : (Pascal)

$A := B$



Pointer Assignment
In C

Two Views of Assignment:-

Copy Pointer : (SNOBOL)

$A = B$ (Ptr to value of variable B
Assigned to variable A)

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