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# Scoping

## Dart [Lexically Scoped]

The variables in dart are lexically scoped meaning the variables are evaluated based on where they are defined in the code.

The following code snippet and screenshot provide the implementation details

*// dart uses lexical scoping meaning the variables values depends on where they are defined in the code.*

*void* main() {

  int x = 10;

  int y = 10;

*void* innerFunction() {

    int x = 20;

    print("The value of x is $*x* [innerFunction]"); *//it prints 20 as the output;*

*//dart will fetch the nearest declaration and print the value*

  }

*void* innerFunction1() {

*//there is no value of y assigned in this scope but the upper level scope has value of y as 20 so it prints 20*

    print("Lexical Scoping In Dart value of y is $*y* [innerFunction1]");

  }

  innerFunction();

  innerFunction1();

  print("The value of x outside the scope of inner function is $*x*[MAIN]");

  print("The value of y outside ṭhe scope of innerFunction1 is $*y*[MAIN]");

}

A computer screen shot of a black background

Description automatically generated

Figure 1.1 Scoping Snapshot [Dart]

## Haskell [Static Scoped]

The variables are statically scoped and bound to their definitions during compilation.

The following code snippet and screenshot provide the implementation details.

*-- The parameter passing in Haskell uses Lazy Evaluation.*

*-- Haskell evaluates Parameters only when needed.*

lazySquare :: Int -> Int

lazySquare x = x \* x  *-- 'x' is evaluated lazily*

main :: IO ()

main = *do*

  let number = 5

  putStrLn $ "Square in Haskell (Lazy Evaluation): " ++ show (lazySquare number)

A screen shot of a computer

Description automatically generated

Figure 1.2 Scoping Snapshot [Haskell]

# Parameter Passing

## Dart [pass by value]

The primitive data types in Dart show that Dart uses pass-by-value as a parameter passing technique illustrated by the following snippet.

## Haskell [Lazy Evaluation]