Renat Norderhaug

10/3/18

CS 326

CS 326 hmwk #3

1. a) Variables being declaring happens at compile time, the names are assigned with type at the time of program compilation.

b) The range of integers in C++ is predefined and fixed before compile time.

c) The meaning of the key words are fixed and made at the time of designing the language, in our case is C++

d) The address to the local variables is assigned at run time

e) run time binding,The library functions will be stored in the memory at the run time.

f) The referring environment of a function passed as a parameter is a run time binding.

g) The total amount of memory is run time binding, if the object is created the memory will be allocated

2. Yes a language that does dynamic scoping can do type checking at compile because type checking at compile time is to prevent errors at run time by noticing programming errors at compile time. Yes static scoping can do type checking at run time, However, the Static type checking only happens when we have complete type information If information is not present at compile time, type checking at runtime happens.

3. Scheme uses static scoping

(define x 1)  
(define (f x) (g 2))  
 (define (g y) (+ x y))  
 (f 5)

Because it is statically defined, y becomes 2 and x is 1 so the result is 3, however if it were dynamically scoped, it would call x to 5 because the (f 5) function and it would change the result to 7.

4.