

Sample of Quiz 1 (theory)

topics

name, scope, binding, control flow, types

1) name scope

This language has static scope. What this program prints?

```
def fun1 ()
    x = 10
    def fun2 (y)
        x = 5
        print (x+y)
    print (x)
    fun2 (3)
```

```
fun1 ()
```

2) Convert the following program into pseudo assembly language.

```
a = 0
do
    a += 1
while a < 10
```

3) stack frame and static link

draw stack frame and static link of the execution of this program.

```
def p1 () :
    x = 10
def p2 (a) :
    print (x)
def p3 (b) :
    p2 (b)
    p3 (2)
p1 ()
```

4) assume the following language is "dynamic" scoping. When run this program, what does it print? (of course, this program looks like C, and C has static scope. However, assume this program is "dynamic scope").

```
int x = 10;

int f() {
    return x;
}

int g() {
    int x = 20;
    return f();
}

main() {
    printf(g());
}
```