CS120 Lab 10 Section 4

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Quiz for Week 9 Answers

(3 pts) Perform the following base conversions:

0010 1110 binary to decimal

- $1_3\ 1_2\ 0_1\ 1_0$

$= 1*2^3 + 1*2^2 + 0*2^1 + 1*2^0$
$= 8 + 4 + 0 + 1$
$= (13)_{10}$

- $0_7\ 0_6\ 1_5\ 0_4\ 1_3\ 1_2\ 1_1\ 0_0$

$= 0*2^7 + 0*2^6 + 1*2^5 + 0*2^4 + 1*2^3 + 1*2^2 + 1*2^1 + 0*2^0$
$= 0 + 0 + 32 + 0 + 8 + 4 + 2 + 0$
$= (46)_{10}$

Quiz for Week 9 Answers (continued)

38 decimal to binary

- $(25)_{10}$

$25/2 = 12 + 1 — 1_0$
$12/2 = 6 + 1 — 1_1$
$6/2 = 3 + 0 — 0_2$
$3/2 = 1 + 1 — 1_3$
$1/2 = 0 + 1 — 1_4$
$(1\ 1011)_2$

- $(38)_{10}$

$38/2 = 19 + 0 —0_0$
$19/2 = 9 + 1 —1_1$
$9/2 = 4 + 1 —1_2$
$4/2 = 2 + 0 —0_3$
$2/2 = 1 + 0 —0_4$
$1/2 = 0 + 1 —1_5$
$(10\ 0110)_2$

Quiz for Week 9 Answers (continued)

A3 Hex to decimal

- $(E_2\ 4_1\ 2_0)_{16}$

$= E*16^2 + 4*16^1 + 2*16^0$
$= 14*256 + 4*16 + 2_0$
$= 3584 + 64 + 2$
$= 3650$

- $(A_1\ 3_0)_{16}$

$= A*16^1 + 3*16^0$
$= 10*16 + 3*1$
$= (163)_{10}$

Quiz for Week 9 Answers (continued)

(2 pts) Write the statements necessary to initialize the array declared below to ascending even numbers starting at 0. That is, a[0] should be 0, a[1] should be 2, a[2] should be 4, etc. . .

```
int a[ 850 ];
```

```
for (int i = 0; i < 850; ++i) {
    a[i] = i * 2;
}
```

```
for (int i = 0; i <= 849; ++i) {
    a[i] = i * 2;
}
```

```
int j = 0;
for (int i = 0; i <= 849; ++i) {
    a[i] = j;
    j += 2;
}
```

Function Call Process

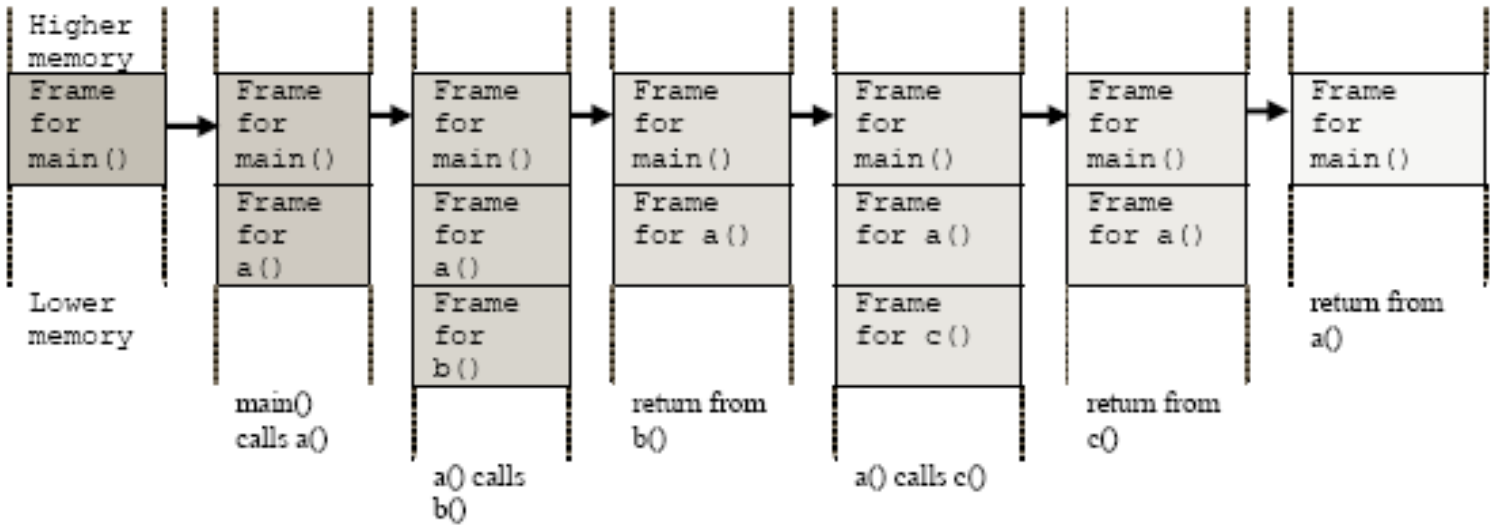
```
#include <stdio.h>

int b();
int c();

int a() {
    b();
    c();
    return 0;
}
int b() { return 0; }
int c() { return 0; }

int main() {
    a();
    return 0;
}
```

Function Call Process

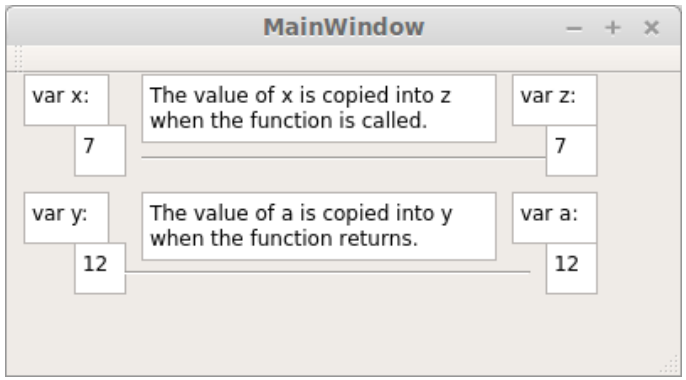


Pass-by-Value

```
int main() {
    int x = 7;
    int y;

    y = foo(x);
}
```

main() & its vars




```
int foo(int z) {
    int a;
    a = z + 5;

    return a;
}
```

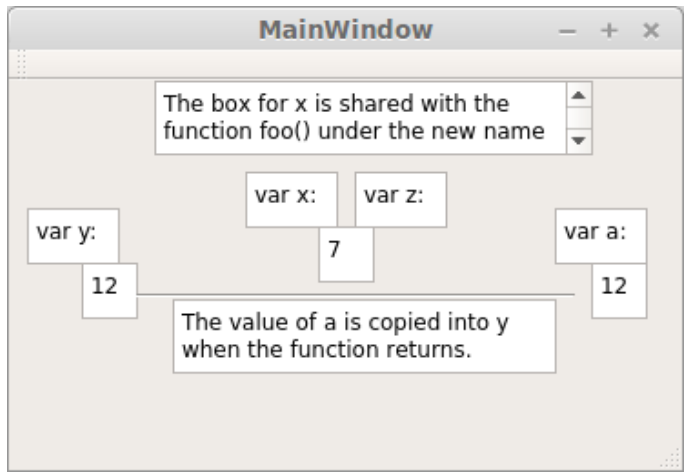
foo() & its vars

Pass-by-Reference

```
int main() {
    int x = 7;
    int y;

    y = foo(x);
}
```

main() & its vars




```
int foo(int &z) {
    int a;
    a = z + 5;

    return a;
}
```

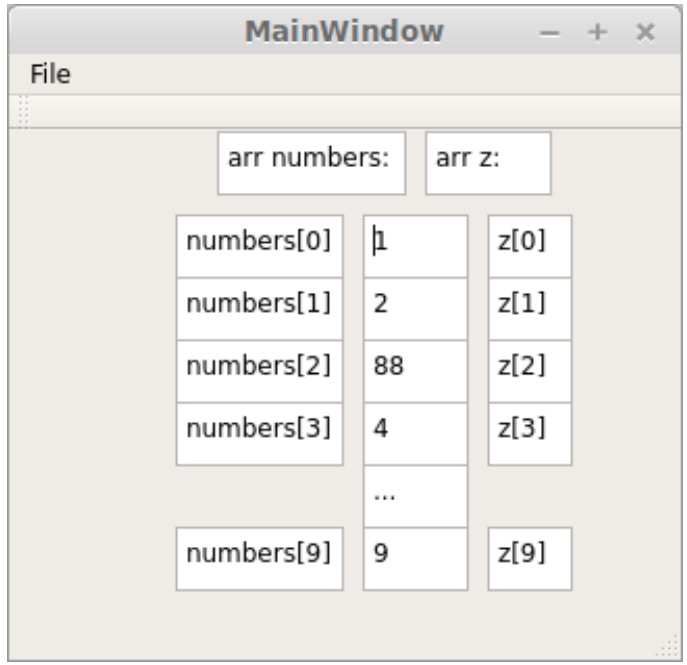
foo() & its vars

Array: Pass-by-Reference

```
int main() {
    int numbers[ 10 ];
    numbers[ 0 ] = 0;
    numbers[ 1 ] = 1;

    foo(numbers);
}
```

main() & its vars




```
int foo(int z[ ]) {

    z[ 2 ] = 88;

}
```

foo() & its vars

Scores of Quiz Week 9 and Lab 8

- Quiz for Week 9 Distribution:

Score	0	1	2	3	4	5	Missed
Section 4 Count (22)	2	2	2	5	3	3	5
Section 6 Count (24)		2	7	3	2	1	9

- Lab 8:

Score	<9	9	10	11	12	13	Missed
Section 4 Count (22)	2		3	1	2	5	9
Section 6 Count (24)		2	2		6	4	10

- Lab 9:
  - Will hand it back during coming lab

Lab 10 Specific Requirements

- cscheckin:
  - Source Programs only: Lab10Sec4.cpp
- Hard Copy:
  - Source Program:
    - Lab10Sec4.cpp
  - Script Output of the program