

CS120 Lab 10 Section 6

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Quiz for Week 9 **Answers**

(3 pts) Perform the following base conversions:

0010 1110 binary to decimal

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

$$= 1*2^3 + 1*2^2 + 0*2^1 + 1*2^0$$

$$= 8 + 4 + 0 + 1$$

$$= (13)_{10}$$

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

$$= 0*2^7 + 0*2^6 + 1*2^5 + 0*2^4 + 1*2^3 + 1*2^2 + 1*2^1 + 0*2^0$$

$$= 0 + 0 + 32 + 0 + 8 + 4 + 2 + 0$$

$$= (46)_{10}$$

Quiz for Week 9 Answers (continued)

38 decimal to binary

► $(25)_{10}$

$$25/2 = 12 + 1 \text{ — } 1_0$$

$$12/2 = 6 + 1 \text{ — } 1_1$$

$$6/2 = 3 + 0 \text{ — } 0_2$$

$$3/2 = 1 + 1 \text{ — } 1_3$$

$$1/2 = 0 + 1 \text{ — } 1_4$$

$$(1\ 1011)_2$$

► $(38)_{10}$

$$38/2 = 19 + 0 \text{ — } 0_0$$

$$19/2 = 9 + 1 \text{ — } 1_1$$

$$9/2 = 4 + 1 \text{ — } 1_2$$

$$4/2 = 2 + 0 \text{ — } 0_3$$

$$2/2 = 1 + 0 \text{ — } 0_4$$

$$1/2 = 0 + 1 \text{ — } 1_5$$

$$(10\ 0110)_2$$

Quiz for Week 9 **Answers** (continued)

A3 Hex to decimal

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

$$= E \cdot 16^2 + 4 \cdot 16^1 + 2 \cdot 16^0$$

$$= 14 \cdot 256 + 4 \cdot 16 + 2_0$$

$$= 3584 + 64 + 2$$

$$= 3650$$

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

$$= A \cdot 16^1 + 3 \cdot 16^0$$

$$= 10 \cdot 16 + 3 \cdot 1$$

$$= (163)_{10}$$

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>

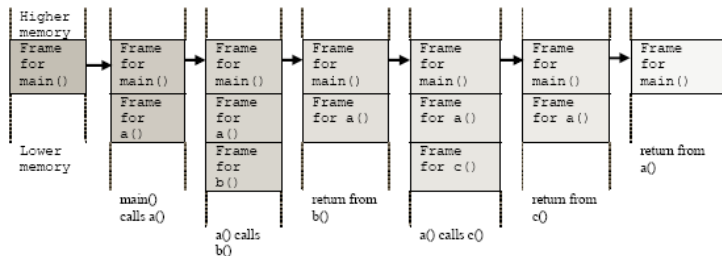
int b();
int c();

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

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

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

Function Call Process

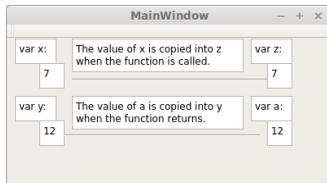


Pass-by-Value

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

```
  y = foo(x);  
}
```

main() & its variables



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

```
  return a;  
}
```

foo() & its variable

Pass-by-Reference

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

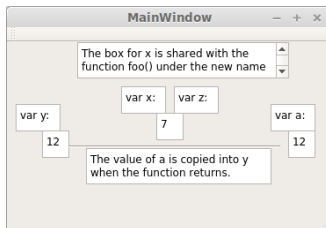
```
  y = foo(x);  
}
```

main() & its variables

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

```
  return a;  
}
```

foo() & its variable



Array: Pass-by-Reference

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

```
    foo(numbers);  
}
```

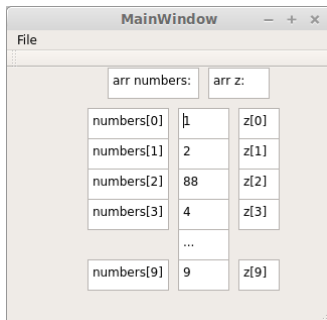
main() & its variables

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

```
    z[ 2 ] = 88;
```

```
}
```

foo() & its variables



arr numbers:		arr z:	
numbers[0]	1	z[0]	
numbers[1]	2	z[1]	
numbers[2]	88	z[2]	
numbers[3]	4	z[3]	
	...		
numbers[9]	9	z[9]	

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: **Lab10Sec6.cpp**
- ▶ **Hard Copy:**
 - ▶ **Source Program:**
 - ▶ **Lab10Sec6.cpp**
 - ▶ **Script Output** of the program