CSC111

Admin

- Assignment 3 to be posted last week
- No pre-lecture work for this week
- No labs this week
- WECS Review Session - Feb 7th 5-6:30 in BWC B150

Midterm Exam 1 Information

- Midterm Examination 1 – In lecture
- Covers material from Lect 1 -> Lect 8
- You are permitted to bring in one (1) sheet of letter-sized or A4 paper (up to 220mmx300mm) with any information.
  - No other books, notes, papers, or electronic devices (including but not limited to phones, calculators, smart watches, computers, tablets) are permitted.
  - It is required that you to hand in the sheet used when you hand in your exam.
- You will have 70 minutes to complete the exam.
- Write your name in pen on the cover page (pencil is ok for your work)
- Bring your UVIC ID -> place on desk

Office hours

- Shayla - Tuesday Feb 8th 09:30-11:20. **ECS242**
- Joe - Tuesday Feb 8th, 14:00 - 15:30 **ECS253**
- Joe - Wednesday Feb 9th - 09:00 - 10:30 **ECS253**
- Hanieh - Wednesday Feb 9th 14:30 - 16:20 **ECS242**

- **Note:** Joe’s office hours on Friday are canceled

Review: Count driven loops

nesting a loop inside of that loop:

```
int outer_count, inner_count;
printf("start:\n");

for(outer_count=0; outer_count <4; outer_count++) {
   printf("%d : ", outer_count);

   for(inner_count=0; inner_count<3; inner_count++) {
        printf("%d", inner_count);
   }// closes inner loop

   printf("!\n");
}// closes outer loop

printf("end\n");
```

Repeats 4 times

Repeats 3 times for every iteration of the outer loop

Practice Questions

Number Conversion

- Convert $(45)_{10}$ to Binary
- Convert $(45)_{10}$ to Hexidecimal
- Convert $(2F)_{16}$ to Decimal

For each row below give the type of the result and the value.

```
int a = 5;
int b = 6;
int c = 500;

double d = 3.0;
```

Expression	Result
a++	6
c/a	100
b/d	2.0
a/b	0
(double) c/a	5.0

What is the result of the following Boolean expressions?

```
int a = 5;
int b = 6;
int c = 500;

double d = 3.0;
```

Expression	Result
(500%5 < 1)	1
(a < b)	1
(--a != 4 && b++ == 6)	0

What is the output of the following code?

```
int d = -4;
int e = 5;
if (d < 0) {
    d *= -1;
}
if (d > 3 && e <= 5) {
    e = e - d--;
} else {
    e = e + d--;
}
printf("e is: %d and d is:%d ", e, d);
```

What is the output of the following code?

```
int d = -4;
int e = 5;
if (d > 0) {
    d *= -1;
}
if (d > 3 || e <= 5) {
    e = e - d--;
} else {
    e = e + d--;
}
printf("e is: %d and d is:%d ", e, d);
```

What is the output of the following code?

```
int h() {
    int a = 3;
    int b = 5;
    printf("%d %d\n", a, b);
    return b;
}
int main(){
    h();
    int a = h();
    printf(”a is: %d ", a);
}
```

What is the output of the following code?

```
void t2(int size){
    for(int i=size; i>0; i--){
        for(int inner = i; inner>0; inner--){
            printf("*");
        }
        printf("\n");
    }
}
int main(){
   t2(5);
   return 0;
}
```

What is the output of the following code?

```
#include <stdio.h>
int main(void){
      int a, b; int count = 0;
      for(a=2; a>0; a--) {
            for(b=1; b<=3; b++) {
                  count++;
            }
      }
      printf( "%d\n", count );
      return 0;

}
```

Write a function that…

- The function should take as an argument the amount of time an object has fallen for after being dropped in seconds.
- The function calculates and returns the distance the object fell, where the formula for distance is: $d = \frac{1}{2} gt^2$
  - where t is the time and g is gravitational acceleration is constant at 9.8 m/s^2.
  - If the time is negative, your function should return -1

Write a function that…

- Design a function called print_number_triangle that will take 1 argument as the size of the triangle. Your function can assume the size argument will not be negative.
- Examples:
  - if the function was called as: print_number_triangle(3); the output would be:

```
  1
 121
12321
```

- if the function was called as: print_number_triangle(5); the output would be:

```
    1
   121
  12321
 1234321
123454321
```