# **Review for the Final Exam**

CS 16: Solving Problems with Computers I Lecture #18

> Ziad Matni Dept. of Computer Science, UCSB





Essential

Copying and Pasting from Stack Overflow The internet will make those bad words go away



**O'REILLY**\*

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# FINAL IS COMING!

- Material: *Everything*!
- Homework, Labs, Lectures, Textbook
- Tuesday, 6/12 in this classroom
- Starts at 4:00pm \*\*SHARP\*\*
- Duration: **3 hours long**
- BRING YOUR UCSB IDs PLEASE! Arrive 10-15 minutes early
- Closed book: no calculators, no phones, no computers
- Only 1 sheet SINGLE-SIDED of written notes
  - Must be no bigger than 8.5" x 11"
  - You have to turn it in with the exam
- You will write your answers on the exam sheet itself.



## SAMPLE PROBLEMS

What is the output of this C++ code?
int x[3];
x[0] = 2;
x[x[0]] = 3;
x[x[2] - 2] = x[0] + x[2];
cout << x[0] << ", ";
cout << x[1] << ", ";
cout << x[2] << endl;</pre>

#### What is the output of this C++ code?

```
int y[2][4] = {{1,2,3,4}, {10,20,30,40}};
for (int n = 0; n < 1; n++)
    for (int m = 0; m < 2; m++)
        y[n][m] = y[n+1][m+1] + m;
cout << y[0][2];</pre>
```

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2, 5, 3

3



What is the output of this C++ code?

### What is the output of this C++ code?

```
vector<int> v;
v.push_back(5); 100,20,5,3
v.push_back(20);
v.push_back(v[0]*v[1]);
for (int k = v.size() - 1; k >= 0; k--)
    cout << v[k] << ",";
cout << v.size() << endl;</pre>
```

```
Show all the outputs of this C++ code:
            int *p1, *p2;
            p1 = new int;
            p2 = new int;
            *p1 = 10;
            *p2 = 20;
                                              10
20
            cout << *p1 << endl;</pre>
            cout << *p2 << endl;</pre>
            *p1 = *p2;
            *p2 = 30;
            p1 = p2;
                                              60
            cout << (*p1 + *p2) << endl;</pre>
```

### What is the output of this code?

```
int f(int a, int b)
{
    if (a <= b)
        return a;
    return (a + f(a - 1, b + 1));
}
int main()
{
    cout << f(6, 2) << endl;
    return 0;
}</pre>
```

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15

```
What is the output of this code?
                                                      15
void f(int a, int b, int &something)
ί
   if (a <= b)
      something += a;
   else
      something += (a + f(a - 1, b + 1));
   cout << something << endl;</pre>
}
int main()
{
  f(6, 2, 0);
   return 0;
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```

```
Write a function definition for SumOf() that will take an integer, num,
and return the sum of all its digits. For example,
SumOf(124) will return 1+2+4 = 7.
Do not do any integer → string or string → integer conversions.
int SumOf(int num)
{
    int sum = 0;
    while (num > 0)
```

sum += num % 10;

num /= 10;

return sum;

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Write a function definition for CheckIt() that will take a string, str, and return a Boolean to see if its ending is either ".com" or ".edu". For example, CheckIt("ucsb.edu") will return true, as would CheckIt("google.com"), but CheckIt("fbi.gov") would return false.

```
bool CheckIt(string str)
```

```
{
    string last = str.substr(str.size()-4, 4);
    if ((last == ".edu") || (last == ".com"))
        return true;
    else return false;
}
```

## YOUR TO-DOs

Finish Lab10 by Friday!

Study for your final exam!!!

Visit Prof's and TAs' office hours if you need help!
 Prof. Matni Monday hours are the same next week!
 TAs Hours this week AND on Monday next week!

