

### CSCI-21 Lab #3 – due 3/2/16

Make sure you have read chapter 2 in the text. Please work in groups of two on this. Write a Java, C or C++ program to implement the following code fragments. Then write flowcharts for Java/C/C++ code fragments, and, by hand, translate them to MIPS assembly language. Put the code into a single program. Use registers to hold the values of a and b, not variables. You may reuse the registers to implement the different control structures, and single-step through the program to run it. Email me the Java/C/C++ source and the MIPS assembly language program. As usual, include both of your names in the subject line and body of the email, and in the notes in the programs. (Note: the book's code for a for() loop doesn't match the real loop logic)

```
int a, b;
a = 0;
b = 0;
while( a < 10 )
{
    b += a;
    a++;
}
```

---

```
a = 0;
b = 0;
do {
    b += a;
    a++;
} while( a < 10 );
```

---

```
b = 0;
for(a = 0; a < 10; a++ )
{
    b += a;
}
```

---

```
a = 0;
b = 0;
if( a <= b )
{
    b = 10;
}
```

---

```
a = 0;
b = 0;
if( a < b )
{
    b = 10;
}
else
{
    a = 20;
}
```