16.216: ECE Application Programming
Fall 2011

Lecture 16: Key Questions
October 14, 2011

1. What is the difference between a `while` loop and a `do-while` loop?

2. Show the difference between the outputs of the loops below

```
x = 7;
do {
    printf("%d",x);
    x = x + 1;
} while ( x < 3  );
```

```
x = 7;
while ( x < 3  )
{
    printf("%d",x);
    x = x + 1;
}
```

3. Recall the example for using a while loop with a sentinel value in the grade average
    program (from Wednesday) and show that loop written as a `do-while` loop.

4. Explain the use of a `break` statement with a loop. Show how that statement can be
    used to modify the example above.

5. **Example:** What does each of the following print?

a.
```
int i = 0;
while (i < 30) {
   if ((i % 3) == 0)
       printf("%d\n", i);
   i = i + 2;
}
```

b. *Assume input is: 3 8 -4 -7 0 5 2*
```
do {
   scanf("%d\n",&x);
   printf("x = %d, x/2 = %d\n", x, x/2);
} while ((x > 2) || (x < 0));
```

c. *Assume input is: b c d e f g h*
```
char c = 'a';
while (c != 'h') {
   printf("%c", c);
   scanf("%c", &c);
}
```