

Computer Science & Engineering 150A

Problem Solving Using Computers – Laboratory

Lecture 05 – Loops

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- General format

```
while ( check condition )  
{  
    executable1;  
    executable2;  
    change variable in conditional statement  
}
```

- Must make a change in conditional variable within the loop!
- Compile `sam3.c` and run.

- General format

```
do {
    executable1;
    executable2;
    change variable in conditional statement
} while ( check condition );
```
- Must make a change in conditional variable within the loop!

- General format

```
for ( x = 0; x < maxValue; x++)  
{  
    executable1;  
    executable2;  
}
```

- Should NOT make a change in conditional variable!
- Compile `sample6.c` and run.

- 1 Write a program that will find the smallest, largest, and average values in a collection of N numbers. The number N will be given to the program by the user. Also compute and display the range of values in the data collection (the minimum and maximum numbers entered), and the standard deviation of the data collection. To compute the standard deviation, accumulate the sum of the squares of the data values (`sum_squares`) in the main loop. After loop exit, use the formula

$$\text{standarddeviation} = \sqrt{\frac{\text{sum_squares}}{N} - \text{average}^2}$$