## Computer Science 110: Review Problems

## Review Problem \#1:

- Create a program that generates and displays 3 random numbers between 70 and 100 at the push of a button.
- Have it so that an image appears if the random number is between 70-79; a different image for $80-89$; and a third image for $90-100$.


## Review Problem \#2:

- Create a small poker program that generates and displays three random numbers between 1 and 3. The player starts with a pot of $\$ 1000$ but there is no betting, each play costs $\$ 100$.
- Have the program check for a three-of-a-kind and a straight and then display an appropriate message.
- A three-of-a-kind pays \$400 and a straight \$200.
- A "Game Over" message is displayed when the pot reaches zero.


## Review Problem \#3:

- Create a program that has the user enter a starting number and end number (both integers).
- The program must check that the starting number is less than the ending number.
- The program displays three calculations at the push of one button: The sum of all the numbers, the product of the even numbers, and a count of the number of negative-odd numbers. The beginning and ending numbers are included in the calculations.
- Each time the button is pushed the totals are reset and recalculated.


## Review Problem \#4:

- Create a Boss Battle with the following rules:
- The player attack is a random number between 5 and 20.
- The player chooses to attack 2-4 times per turn, however:
- If the player choses 2 attacks:
- Probability of critical hit ( $3 x$ the damage) $=30 \%$
- Probability of counter attack $=10 \%$
- If the player choses 3 attacks:
- Probability of critical hit $=20 \%$
- Probability of counter attack $=20 \%$
- If the player choses 4 attacks:
- Probability of critical hit $=10 \%$
- Probability of counter attack $=30 \%$
- The counter attack is a random number between 50-75
- Use a progress bar to display the health of each character.
- Output all attack messages to the user.

