CS 31  
Report: Project 1

1. Unusual, nonsensical, incorrect answers
   1. **Nonsensical**: Input that -1 sections were being offered and technically the program should have returned that this value is not possible, but it still went on to ask me the number of sections happening on ground (I entered 1) and the number of sections happening online (I entered 2), and calculated the percentage of onground classes as 33%.
   2. **Nonsensical**: Input that 0 sections were being offered and technically the program should have returned that as no sections are being offered there are no onground or online section yet it still went on to ask me the number of sections happening on ground (I entered 9) and the number of sections happening online (I entered 7), and calculated the percentage of onground classes as 63.4%.
   3. **Unusual/Incorrect**: When I enter the value of number of sections as 77, the program asks me the number happening onground (I enter 90) and the number happening online (I enter 80). Now, technically the answer should just be that “Looks like some of these values don’t make sense,” but the program continues to run and gives me the output as “ 47.1% of the math sections occurred on-ground. Looks like some of these values don't make sense.” The program returns a value of 47.1%, because it’s not using the value of total number of sections being offered, but only adding the number of sections onground and online while also claiming that the some of the values don’t make sense. Thus a more efficient program would be if it applied the if statement before the calculation, in which case if the total does not equal the sum of onground and online the program terminates and using total instead of (onground+online) in the calculation of percentage.
   4. **Nonsensical**: When I enter the value of number of sections as 3, the program asks me the number happening on-ground (I enter -4) and the number happening on-line (I enter -8). Now, technically the answer should just be that “Looks like some of these values don’t make sense,” but the program continues to run and gives me the output as “ 33.3% of the math sections occurred on-ground. Looks like some of these values don't make sense.” This does not make sense.
2. logic\_error.cpp

The errors I introduced in this code were:

1. **(Line 22) Changed the data type of the variable “percentage” from double to int**: thus, the program gives erroneous values as it “cuts-off” or rounds down the decimal. Therefore, even if the percentage is like 39.99999%, the program renders a value of 39%.
2. **(Line 22) Removed the brackets around the denominator addition in percentage formula**: now to percentage formula is not calculating 100\*onground/(onground+online) but instead it’s calculating 100\*(onground/onground)+online. Thus, it gives us wrong answers for our input.
3. **(Line 22) Changed 100 to 10 in the percentage formula:** Thus, the percentage is being calculated as 10\*(onground/onground)+ online, giving me incorrect answers.
4. compile\_error.cpp

The errors I introduced in this code were:

1. **(Line 13) Used undeclared identifier “Cout”**: C++ is a case sensitive language. Thus, the compiler doesn’t recognize “Cout” as it doesn’t equate it with “cout”.
2. **(Line 19) Removed “;” from the end** **of the line**
3. **(Line 16, 30) Did not declare the variable “total”**: Didn’t declare the variable “total” using a data type
4. **(Line 20) Added extra space between extraction operator**: The computer couldn’t recognise the character