**CS31 Project2 Report**

**Yuxuan Xia (605733348)**

**Question 1: A brief description of notable obstacles you overcame.**

To calculate the tax, there are a lot of specific requirements and different cases. I found it difficult to consider all possible situations. However, I overcame this by using a sketch to help me organize my logic and type the code afterward.

Also, I used “cin” and found that the program could not output ideal values if I input a name with empty space. To fix this error, I used “getline” instead.

**Question 2: A list of the test data that could be used to thoroughly test your program, along with the reason for each test.**

The taxable income must not be negative (Yuxuan Xia, -3, nurse, 0)

This is to test whether the program output a correct value if the taxable income is negative.

The number of children must not be negative (Yuxuan Xia, 1000, lab technician, -2)

This is to test whether the program output a correct value if the number of children is negative

Yuxuan Xia would pay $0.00 (Yuxuan Xia, 1000, engineer, 10)

This is to test whether the program output a correct value if the input is valid and the tax should be zero.

Yuxuan Xia would pay $600.00 (Yuxuan Xia, 20000, lab technician, 1)

This is to test whether the program output a correct value if the input is valid, the income is less than $55000, and the occupation is neither a nurse nor a teacher.

Yuxuan Xia would pay $1328.40 (Yuxuan Xia, 43210.12, nurse, 2)

This is to test whether the program output a correct value if the input is valid, the income is less than $55000, and the occupation is a nurse or a teacher.

Yuxuan Xia would pay $2930.25 (Yuxuan Xia, 65432.1, bus driver, 0)

This is to test whether the program output a correct value if the input is valid, the income is more than $55000 but less than $125000, and the occupation is neither a nurse nor a teacher.

Yuxuan Xia would pay $2877.16 (Yuxuan Xia, 76543.21, teacher, 2)

This is to test whether the program output a correct value if the input is valid, the income is more than $55000 but less than $125000, and the occupation is a nurse or a teacher.

Yuxuan Xia would pay $8103.57 (Yuxuan Xia, 135791.11, bus driver, 3)

This is to test whether the program output a correct value if the input is valid, and the income is more than $125000, and the occupation is neither a nurse nor a teacher.

Yuxuan Xia would pay $6703.57 (Yuxuan Xia, 135791.11, nurse, 3)

This is to test whether the program output a correct value if the input is valid, and the income is more than $125000, and the occupation is a nurse or a teacher.