# Final Project
# ITS 33000
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Write a C program using the template from Blackboard that will calculate the paycheck for the employees in the employees struct found in the "payrolldata.h" file. It should have arrays made out of structs for federal married taxes, federal state taxes, federal exemptions, and state exemptions. NOTE: The federal married tax table and single tax table are the same structure. You should only make one struct that will be used for both of them. The same goes for federal and state exemption allowances. When searching the tables, if a value is not found in the table, the data from the last row should be returned. The following should be defined as constants at the top of the program:

Social Security Tax = 4.2%
Social Security Maximum = $4,107.69
State Tax Rate = 3.4%
In County Tax Rate = .095%
Out County Tax Rate = .07%

This is the data for the data structs.

Federal Married
```
MINIMUM,MAXIMUM,BASE,PERCENT
0,304,0,0
304,958,0,0.1
958,2958,65.4,0.15
2958,5663,365.4,0.25
5663,8469,1041.65,0.28
8469,14887,1827.33,0.33
14887,100000,3945.27,0.35
```

Federal Single
```
MINIMUM,MAXIMUM,BASE,PERCENT
0,81,0,0,
81,408,0,0.1,
408,1408,32.7,0.15,
1408,3296,182.7,0.25,
3296,6788,654.7,0.28,
6788,14663,1632.46,0.33,
14663,100000,4231.21,0.35
```

Federal
```
EXEMPTIONS,ALLOWANCE_AMOUNT
0,0,
1,142.31,
2,284.62,
3,426.93,
4,569.24,
5,711.55,
6,853.86,
7,996.17,
```

```
8,1138.48,
9,1280.79,
10,1423.1
```

State
EXEMPTIONS,ALLOWANCE_AMOUNT

```
0,0,
1,38.46,
2,76.92,
3,115.38,
4,153.85,
5,192.31,
6,230.77,
7,269.23,
8,307.69,
9,346.15,
10,384.62
```

Payroll Specs:

There are 26 pay periods in a year. Salaried employees are paid 1/26th of their annual salary, pro-rated base upon 80 hours worked. So if a salaried person only works 72 hours, their gross pay will be 72/80 percent of their full pay. Hourly employees are paid time and a half for hours over 80.

The amount of gross pay a person pays tax on is reduced by the number of exemptions they are claiming by looking up the reduction amount in the table for federal and for state. An employee making $1,000 gross pay that is claiming 3 exemptions will only pay tax on $1,000 - $426.93 for federal, and $1,000 - $115.38 for state. The state tax is the tax rate times this amount.

For federal, the taxable amount must be looked up in one of two tables depending if they are married or not. The bracket is determined by finding the row in the table where the taxable amount is greater than or equal to the minimum, but less than the maximum. The tax bracket for a person with $1,500 taxable pay will fall in the 15% bracket if married, and 25% if single.

Federal tax is calculated as the base amount + the percent times the amount over the minimum. A married person with $1,500 taxable pay will pay $65.40 + 0.15 * (1500 - 958).

FICA is social security. It is the tax rate times gross pay, but if the amount is more than 1/26th of the yearly maximum, then the tax is the tax rate times the maximum.

State tax is the percent times the taxable pay found by reducing gross pay by the allowance amount.

County tax is the state taxable pay times the in-county rate if the county code is "L," otherwise it is the out-of-county rate.

Create functions that will search the structs and return back the appropriate data according to the following. calcFedTax and calcStateTax will have to call getFederalAllowances and getStateAllowances to determine the taxable pay.

You must use these functions and pass these values:

getFederalAllowances - Receives exemptions, returns allowance amount.

getStateAllowances - Receives excemptions, returns allowance amount.

getMarriedBase- Receives an amount, returns the base for the bracket it fits in.

getMarriedMinimum - Receives an amount, returns the minimum for the bracket it fits in.

getMarriedPercent - Receives an amount, returns the percent for the bracket it fits in.

getMarriedMinimum - Receives an amount, returns the minimum for the bracket it fits in.

getSingleBase- Receives an amount, returns the base for the bracket it fits in.

getSinglePercent - Receives an amount, returns the percent for the bracket it fits in.

calcGrossPay - Receives hours, rate, and salaried code.

calcFedTax - Receives marital status, gross pay and exemptions.

calcStateTax - Receives gross pay and exemptions.

calcFICA - Receives gross pay.

calcCountyTax - Receives gross pay, exemptions, and county.

Check your work with the following output:

| Employee_ID | Gross Pay | Federal | FICA | State | County | Net Pay |
|---|---|---|---|---|---|---|
| 100 | 6537.27 | 1166.90 | 172.52 | 218.34 | 44.95 | 4934.54 |
| 101 | 6097.04 | 1083.49 | 172.52 | 204.68 | 42.14 | 4594.20 |
| 102 | 7370.57 | 1360.38 | 172.52 | 245.37 | 50.52 | 5541.78 |
| 103 | 2186.54 | 185.64 | 91.83 | 70.42 | 19.68 | 1818.97 |
| 104 | 2492.04 | 188.77 | 104.67 | 78.19 | 16.10 | 2104.31 |
| 105 | 2028.15 | 140.54 | 85.18 | 63.73 | 13.12 | 1725.59 |
| 106 | 2581.15 | 404.83 | 108.41 | 85.14 | 17.53 | 1965.24 |
| 107 | 2857.33 | 264.91 | 120.01 | 91.92 | 18.92 | 2361.56 |
| 108 | 3362.46 | 362.03 | 141.22 | 110.40 | 30.85 | 2717.96 |
| 109 | 1874.92 | 117.55 | 78.75 | 58.52 | 16.35 | 1603.76 |
| 111 | 1798.12 | 244.65 | 75.52 | 59.83 | 12.32 | 1405.80 |
| 112 | 1688.30 | 89.56 | 70.91 | 52.17 | 14.58 | 1461.08 |
| 113 | 2796.95 | 255.86 | 117.47 | 89.87 | 25.11 | 2308.65 |
| 114 | 997.51 | 78.43 | 41.90 | 31.30 | 8.75 | 837.14 |
| 115 | 1112.04 | 95.61 | 46.71 | 35.19 | 9.83 | 924.69 |
| 116 | 988.46 | 39.98 | 41.52 | 30.99 | 8.66 | 867.31 |
| 117 | 1215.04 | 5.72 | 51.03 | 33.47 | 9.35 | 1115.47 |
| 118 | 1140.15 | 55.15 | 47.89 | 36.15 | 7.44 | 993.52 |
| 119 | 1869.15 | 159.38 | 78.50 | 60.94 | 17.03 | 1553.31 |
| 120 | 2222.81 | 212.43 | 93.36 | 72.96 | 15.02 | 1829.04 |
| 121 | 1673.54 | 130.04 | 70.29 | 54.29 | 15.17 | 1403.76 |
| 122 | 1922.54 | 124.69 | 80.75 | 60.14 | 12.38 | 1644.58 |
| 123 | 2047.23 | 143.40 | 85.98 | 64.37 | 13.25 | 1740.22 |
| 124 | 1520.28 | 50.47 | 63.85 | 45.15 | 9.30 | 1351.50 |
| 125 | 1226.42 | 134.12 | 51.51 | 40.39 | 8.32 | 992.09 |
| 126 | 875.94 | 0.00 | 36.79 | 23.24 | 4.79 | 811.12 |
| 127 | 957.60 | 51.10 | 40.22 | 28.64 | 5.90 | 831.75 |
| 128 | 917.60 | 0.00 | 38.54 | 23.35 | 6.52 | 849.18 |
| 129 | 923.20 | 0.00 | 38.77 | 23.54 | 6.58 | 854.30 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 130 | 1057.60 | 46.90 | 44.42 | 33.34 | 6.86 | 926.07 |
| 131 | 1171.20 | 29.80 | 49.19 | 34.59 | 9.66 | 1047.96 |
| 132 | 1047.88 | 45.93 | 44.01 | 33.01 | 9.22 | 915.71 |
| 133 | 876.00 | 81.55 | 36.79 | 28.48 | 7.96 | 721.22 |
| 134 | 1118.40 | 96.57 | 46.97 | 35.41 | 9.89 | 929.56 |
| 135 | 963.20 | 0.00 | 40.45 | 26.21 | 5.40 | 891.14 |
| 136 | 848.80 | 26.02 | 35.65 | 26.24 | 5.40 | 755.49 |
| 137 | 967.95 | 52.65 | 40.65 | 28.99 | 5.97 | 839.69 |
| 138 | 1048.00 | 31.71 | 44.02 | 31.71 | 6.53 | 934.04 |
| 139 | 824.00 | 31.61 | 34.61 | 24.09 | 4.96 | 728.73 |
| 140 | 1125.60 | 0.00 | 47.28 | 30.42 | 6.26 | 1041.64 |
| 141 | 1149.60 | 27.64 | 48.28 | 33.86 | 6.97 | 1032.86 |
| 142 | 1141.60 | 41.07 | 47.95 | 34.89 | 7.18 | 1010.51 |
| 143 | 935.20 | 34.66 | 39.28 | 29.18 | 6.01 | 826.07 |
| 144 | 825.60 | 31.77 | 34.68 | 24.15 | 4.97 | 730.04 |
| 145 | 3756.11 | 357.04 | 157.76 | 119.86 | 24.68 | 3096.78 |