Ryan Lopez

LAB 2

Q1:

```c
/*////////////////////////////////////////////
//   Title:         L2_Q1.c
//   Author:        Ryan L.
//   Description:   C program that calculates weekly salary and assumes a limit of
    40 hours per week.
*////////////////////////////////////////////
#include <stdio.h>

int main(){
    // Declare variables (test cases: 10 42 ) (test output: 430)
    int weeklyHours, weeklyLimit, hourlyWage, overtimeHours, weeklySalary;

    // Initialize variables
    weeklyLimit = 40;

        //get input : hourlyWage weeklyHours
    printf("Enter hourly wage: ");
    scanf("%d %d", &hourlyWage, &weeklyHours);

    //calculate weekly salary
    if (weeklyHours <= weeklyLimit) {
        weeklySalary = hourlyWage * weeklyHours;

    } else {
        overtimeHours = weeklyHours - weeklyLimit;
        weeklySalary = (hourlyWage * weeklyLimit) + (overtimeHours * (hourlyWage *
            1.5));
    }
    //print weeklySalary
    printf("weekly salary is: %d", weeklySalary);

    return 0;
}
```

```
/tmp/ZUkqWWdGBc.o
Enter hourly wage: 10 42
weekly salary is: 430
```

Q2:

```c
/*////////////////////////////////////////////
//   Title:         L2_Q2.c
//   Author:        Ryan L.
//   Description:   c program that calculates the tax rate from a given annual salary
*////////////////////////////////////////////
#include <stdio.h>

int main(){
    // Declare variables (test cases: 120000)
    int annulSalary, taxToPay;
    double taxRate;

    // Initialize variables

        //get input: annual salary
    printf("Enter annual salary: ");
    scanf("%d", &annulSalary);

    //calculate taxRate
    if (annulSalary <= 20000) {
        taxRate = 0.10;
    } else if (annulSalary <= 50000) {
        taxRate = 0.20;
    } else {
        taxRate = 0.30;
    }

    //calculate the taxToPay
    taxToPay = annulSalary * taxRate;

    //print all needed info
    printf("Annual salary:\t%d\n", annulSalary);
    printf("Tax rate:\t%.2f\n", taxRate);
    printf("Tax to pay:\t%d\n", taxToPay);
    return 0;
}
```

```
/tmp/YCibqhPfrY.o
Enter annual salary: 120000
Annual salary:  120000
Tax rate:   0.30
Tax to pay: 36000
```

Q3:

```c
/*////////////////////////////////////////////
//   Title:         L2_Q3.c
//   Author:        Ryan L.
//   Description:   C program that prints the lowest of 3 given values
*////////////////////////////////////////////

#include <stdio.h>

int main(){
    // Declare variables (test cases: 7 15 3)
    int n1, n2, n3;

    // Initialize variables

        //get input for 3 nums
    printf(": ");
    scanf("%d %d %d", &n1, &n2, &n3);

    //find and print the smallest of the 3 numbers

    if ((n1<=n2) && (n1<=n3)){
        printf("%d",n1);

    } else if ((n2<=n1) && (n2<=n3)){
        printf("%d",n2);

    } else {
        printf("%d",n3);

    }

    return 0;
}
```

```
/tmp/WLnjhIIs4P.o
: -1 -2 -3
-3
```

Q4:

```c
/*////////////////////////////////////////////
//   Title:         L2_Q4.c
//   Author:        Ryan L.
//   Description:   C program that prints wether a given highway number is to a auxiliary or a primary highway
// as well as prints the primary highway it serves
*////////////////////////////////////////////
#include <stdio.h>

int main(){
    // Declare variables (test case: 90 , 290, 200)
    int highwayNum, primaryNum;

    // Initialize variables

        //get input: highwayNum
    printf(": ");
    scanf("%d",&highwayNum);

    //logic to determine if the highway is a primary or auxiliary highway
    if ((highwayNum < 1) || (highwayNum > 999) || (highwayNum % 100 == 0 )) {
        printf("%d is not a valid interstate highway number", highwayNum);

    } else {
        primaryNum = highwayNum % 100;

        if (highwayNum > 99) {
            printf("I-%d is a auxiliary highway serving I-%d",highwayNum,primaryNum);
            printf("%s",(primaryNum%2 == 0) ? ", going east/west" : ", going north/south" );

        } else {
            printf("I-%d is a primary highway",highwayNum);
            printf("%s",(highwayNum%2 == 0) ? ", going east/west" : ", going north/south" );
        }
    }
    return 0;
}
```

```
/tmp/A8TuSpraxl.o
: 290
I-290 is a auxiliary highway serving I-90, going east/west
```