Ryan Lopez

HW 1

Part A

1. The compiler converts your source code into machine language while The linker combines the object modules generated by the compile.
2. The “#include <stdio.h>” tells the compiler to “*include”* the **stdio.h** file in the program.
3. Comments are used to make the code more reader friendly.
4. Determine which of the following are valid identifiers.
    a. “Name” : valid identifier

“Address” : valid identifier

    b. “123-45-6789" : invalid, identifiers cannot begin with a number
5. Determine which of the following are valid constants
    a. 0.8E 8 [int]- valid scientific notation
    b. 018CDF [int]- invalid using string within a string
    c. ‘\a’ [char]- invalid using escape sequences
    d. “The professor said, “please don’t cheat in Exam” [string]- invalid the wrong quote was used within the string
6. Write appropriate declarations and assign the given initial values for each group of variables and arrays.

```
double a = -8.2 ,b = 0.005;
```

```
int x = 129, y = 87, z = -22;
char message = “ERROR”
```

7. Output: this will output a compilation error since “xyz” was declared twice
8. Run the program
    a. The program just printed the unicode characters for the values 97 and 98 which are “a” and “b” along with the digits “97” and “98”
    b. The program undefined unicode characters for the values 197 and 198 so there is no specific unicode character at those values along with the digits “-59” and “-58”
    c. The program just printed the unicode characters for the values 197 and 198 which are undefined along with the digits “197” and “198”

Part B

1. Write a C program to print a block F using the hash (#)

```c
/*////////////////////////////////////////////
//   Title:      Q1.c
//   Author:     Ryan L.
//   Description: Answer to Q1 for HW 1
*////////////////////////////////////////////

#include <stdio.h>

int main() {

    // printing the "F" in hashs
    printf("######\n");
    printf("#\n");
    printf("#\n");
    printf("#####\n");
    printf("#\n");
    printf("#\n");
    printf("#\n");

    return 0;

}
```

2. Write a C program that displays the following information by using proper data types (e.g., int, float, string) in your terminal output.

Courses:	ENGR213
Student Name:	Your Name
Student ID:	Your ID
GPA:	3.7

```c
/*////////////////////////////////////////////
//   Title:      Q2.c
//   Author:     Ryan L.
//   Description: Answer to Q2 for HW 1
*////////////////////////////////////////////

#include <stdio.h>

int main() {

    //printing with appropriate tabs and new lines
    printf("Courses:\t\tENGR213\n");
    printf("Student Name:\tRyan Lopez\n");
    printf("Student ID:\t\t922568410\n");
    printf("GPA:\t\t\t3.7\n");

    return 0;

}
```

3. Write a C program to convert specified days into years, weeks and days

Test Data :

Number of days : 1329

Expected Output:

Years: 3

Weeks: 33

Days: 3

```c
/*////////////////////////////////////////////
//   Title:      Q3.c
//   Author:     Ryan L.
//   Description: Answer to Q3 for HW 1
*////////////////////////////////////////////

#include <stdio.h>

int main() {
    // declare variables
    int days, years, weeks;

    // prompt user for input
    printf("Enter the number of days: ");
    scanf("%d", &days);

    // calculate years, weeks, and days (ignoring leap years for simplicity)
    years = days  /  365;
    weeks = ( days % 365 )  /  7;
    days = days - (( years  *  365 ) + ( weeks  *  7 ));

    // print results in appropriate format
    printf("Years: %d\nWeeks: %d\nDays: %d\n", years, weeks, days);

    return 0;
}
```

4. Write a C program that accepts 4 integers a, b, c, d from the user where b, c and d are positive and a is even. If b is greater than c and d is greater than a and if the sum of c and d is greater than the sum of a and b print "Correct values", otherwise print "Wrong values".

Test Data :

Input the second integer: 35

Input the third integer: 15

Input the fourth integer: 46

Expected Output:

Wrong values

```c
/*////////////////////////////////////////////
//   Title:      Q4.c
//   Author:     Ryan L.
//   Description: Answer to Q4 for HW 1
*////////////////////////////////////////////

#include <stdio.h>

int main() {
    // declare variables
    int a, b, c, d;

    // prompt user for input
    printf("Input the first integer: ");
    scanf("%d", &a);
    printf("Input the second integer: ");
    scanf("%d", &b);
    printf("Input the third integer: ");
    scanf("%d", &c);
    printf("Input the fourth integer: ");
    scanf("%d", &d);

    // filter using the given conditions
    // (b > c) && (d > a) && (c + d > a + b)
    if (b > c && d > a && c + d > a + b) {
        printf("Correct values\n");
    } else {
        printf("Wrong values\n");
    }
    return 0;
}
```