Assignment1

Question one:

Descrpition:

The distance that light travels in one year is called a light year. Given that light travels at a speed of 3108 meters in one second, determine the didtance of a light year. The relevant formula is distance=speedtime.

Source code:

```
#include <stdio.h>
#include <math.h>

int main() {
    //initialize the variable
    long long int speed;
    long long int time;
    long long int distance;

    time = 60 * 60 * 24 * 365; speed = 3 * (int)pow(10, 8);

    distance = time * speed;

    //output the result
    printf("The distance of a light year is %lld meters.",distance)

    return 0;
}
```

Input:

no input

Output:

```
/Users/rico-yang/CLionProjects/Question1/cmake-build-debug/Question1
The distance of a light year is 9460800000000000 meters.
Process finished with exit code 0
```

Question two:

Description:

Write and execute a C program that calculates and displays the elapsed time it to make a 150-mile trip. The equation for computing elapsed time is elapsed time=distance/average speed. Assume the average speed was 65 miles/hour,and use the variable names time,distance, and avgSpeed in your program.

Source code:

```c
#include <stdio.h>
#include <math.h>

int main()
{
    //initialize
    double time;
    int distance = 150;
    int avgSpeed = 65;

    //force the type changing from int to double
    time = (double)distance / avgSpeed;

    printf("The elapsed time will be %.2f hour.", time);

    return 0;
}
```

Input:

no input

Output:

```
/Users/rico-yang/CLionProjects/Question2/cmake-build-debug/Question2
The elapsed time will be 2.31 hour.
Process finished with exit code 0
```

Question three:

Description:

Write a C program that display the following prompt:

Enter the radius of a circle:

After accepting a value for the radius, your program should calculate and display the circumference of the circle.

Source code:

```c
#include <stdio.h>
#include <math.h>

int main()
{
    //initialize the variable
    double radius;
    double circumference;

    const double pi = 3.1415926;
    printf("Enter the radius of a circle:");

    //input
    scanf("%lf",&radius);
    circumference = 2 * pi * radius;

    printf("The circumference of the circle is %.2f",circumference);

    return 0;
}
```

Input:

Radius of a circle : 3

Output:

```
/Users/rico-yang/CLionProjects/Question3/cmake-build-debug/Question3
Enter the radius of a circle:3
The circumference of the circle is 18.85
Process finished with exit code 0
```

Question four:

Description:

Write a C program that display the following prompt:

Enter a temperature in degrees Fahrenheit:

Have your program accept a value entered from keyboard and convert the temperature entered to derees Celsius, using the equation celsius=5.0/9.0(fahrenheit-32.0). Your program should then display the temperature in degrees Celsius,using an appropriate output message.*

Source code:

```c
#include <stdio.h>
#include <math.h>
int main()
{
    //initialize the variable
    double fahrenheit;
    double celsius;

    printf("Enter a temperature in degrees Fahrenheit: ");
    //input
    scanf("%lf", &fahrenheit);

    celsius = 5.0 / 9.0 * ( fahrenheit - 32.0 );
    printf("The degrees Celsius is %.1f celsius.", celsius);
    return 0;
}
```

Input:

Fahrenheit:56

Output:

```
/Users/rico-yang/CLionProjects/Question4/cmake-build-debug/Question4
Enter a temperature in degrees Fahrenheit: 56
The degrees Celsius is 13.3 celsius.
Process finished with exit code 0
```