Terminal Output:

Master: /Users/jakecousino/Desktop/CIS241/HW1$ $ gcc -o main main.c

Master: /Users/jakecousino/Desktop/CIS241/HW1$ $ ./main

\*\*\* Problem2\_31 \*\*\*

Number Square Cude

0 0 0

1 1 1

2 4 8

3 9 27

4 16 64

5 25 125

6 36 216

7 49 343

8 64 512

9 81 729

10 100 1000

\*\*\* Problem2\_33 \*\*\*

Total Cost for Commute: 106.00

\*\*\* Problem3\_47 \*\*\*

Todays Date: 5 - 23 - 2018

Your Date of Birth entered: 11 - 10 - 1994

Your age: 23

Your Targer Heart Rate: 197

\*\*\* Problem4\_38 \*\*\*

On the first day of Christmas my true love sent to me

a partridge in a pear tree

On the second day of Christmas my true love sent to me

Two turtle doves, and

A partridge in a pear tree

On the third day of Christmas my true love sent to me

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the fourth day of Christmas my true love sent to me

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the fifth day of Christmas my true love sent to me

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the sixth day of Christmas my true love sent to me

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the seventh day of Christmas my true love sent to me

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the eighth day of Christmas my true love sent to me

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the nineth day of Christmas my true love sent to me

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the tenth day of Christmas my true love sent to me

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the eleventh day of Christmas my true love sent to me

Eleven pipers piping

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

On the twelth

day of Christmas my true love sent to me

Twelve drummers drumming

Eleven pipers piping

Ten lords a-leaping

Nine ladies dancing

Eight maids a-milking

Seven swans a-swimming

Six geese a-laying

Five golden rings

Four colly birds

Three French hens

Two turtle doves, and

a partridge in a pear tree

\*\*\* Problem4\_40 \*\*\*

Fair Tax Calculator:

Please enter cost per month for the following categories:

Housing: 859

Food: 400

Clothing: 0

Transportation: 106

Health Care: 0

Education: 0

Vacation: 0

Your estimated Fair tax for all your expenses would be: 313.95

\*\*\* Problem5\_49 \*\*\*

Global Warming Quiz

1. Humans Burn \_\_\_\_\_\_\_\_\_ fuels which can add greenhouse gases.

A. Energy

B. Fossil

C. Carbonic

D. Liquid

b

2. What is the greenhosue effect?

A. Where heat is kept out of the Earth

B. Where heat is kept in the Earth

C. Where more light is let into the Earth

D. Where less light is let into the Earth

b

3. What could one effect of global warming be?

A. More islands forming

B. Sea level rise

C. More volcanic eruptions

D. More Landslides

b

4. What do greenhouse gases do?

A. They cause more heat to be kept out of the Earth.

B. They cause the sun's light to be kept out of the Earth

C. They absorb and hold in heat

D. They cause acid rain.

c

5. Global Warming could cause

A. Forst Fires

B. Glaciers to get smaller

C. Glaciers to get bigger

D. Volcanoes to errupt

b

(5/5) Excellent

Source Code :

#include <stdio.h>

#include <math.h>

#include <time.h>

void Problem2\_31();

void Problem2\_33(double milesDriven, double costPerGal, double avgMPG, double parkingFees, double tollFees);

void Problem3\_40();

void Problem3\_47(int month, int day, int year);

void Problem4\_38();

void Problem4\_40();

void Problem5\_48();

void Problem5\_49();

//Comment and copy source code and outputs

int main()

{

Problem2\_31();

Problem2\_33(1000, 2.88, 30, 10, 0); //avg commute in a month for me.

//Problem3\_40();

Problem3\_47(11, 10, 1994);

Problem4\_38();

Problem4\_40();

Problem5\_49();

return 0;

}

//prints the numbers from 0 to 10 and the squared and cubed values.

void Problem2\_31()

{

printf("\n\n%s\n\n", "\*\*\* Problem2\_31 \*\*\*" );

printf("%s\t", "Number");

printf("%s\t", "Square");

printf("%s\n", "Cubed");

for(int i = 0; i < 11; i++)

{

printf("%d\t", i);

printf("%d\t", (int)pow(i, 2));

printf("%d\n", (int)pow(i, 3));

}

}

//Calculates the cost for driving x anmount of miles at a cost per gallon of gases

// also adds in parking fees as well as tolls you encounter.

void Problem2\_33(double milesDriven, double costPerGal, double avgMPG, double parkingFees, double tollFees)

{

printf("\n\n%s\n\n", "\*\*\* Problem2\_33 \*\*\*" );

double gallonsofGasUsed = milesDriven / avgMPG;

double costOfGasUsed = gallonsofGasUsed \* costPerGal;

double totalCost = costOfGasUsed + parkingFees + tollFees;

printf("Total Cost for Commute: %.2f\n", totalCost);

}

//Program will run forever and eventually start to print 0 because of

//the size of the nuber exceeds the size of the int data type.

void Problem3\_40()

{

printf("\n\n%s\n\n", "\*\*\* Problem3\_40 \*\*\*" );

int i = 2;

while(1)

{

printf("%d\n", i);

i \*= 2;

}

}

//Calculates your target heart rate for a workout given your birthday.

void Problem3\_47(int month, int day, int year)

{

printf("\n\n%s\n\n", "\*\*\* Problem3\_47 \*\*\*" );

time\_t t = time(NULL);

struct tm tm = \*localtime(&t);

int currentMonth = tm.tm\_mon + 1;

int currentDay = tm.tm\_mday;

int currentYear = tm.tm\_year + 1900;

printf("Todays Date: %d - %d - %d\n", currentMonth, currentDay, currentYear);

printf("Your Date of Birth entered: %d - %d - %d\n", month, day, year);

int age = currentYear - year - 1;

if(currentMonth >= month)

{

if(currentDay >= day) age++;

}

printf("Your age: %d\n", age);

int targetHeartRate = 220 - age;

printf("Your Targer Heart Rate: %d\n", targetHeartRate);

if(currentMonth == month && currentDay == day)

{

printf("%s\n", "Happy Birthday!!");

}

}

//prints the song the first day of christmas.

void Problem4\_38()

{

printf("\n\n%s\n\n", "\*\*\* Problem4\_38 \*\*\*" );

int i;

for(i = 0; i<12; i++)

{

printf("%s", "On the ");

switch(i)

{

case 0:

printf("%s", "first ");

break;

case 1:

printf("%s", "second ");

break;

case 2:

printf("%s", "third ");

break;

case 3:

printf("%s", "fourth ");

break;

case 4:

printf("%s", "fifth ");

break;

case 5:

printf("%s", "sixth ");

break;

case 6:

printf("%s", "seventh ");

break;

case 7:

printf("%s", "eighth ");

break;

case 8:

printf("%s", "nineth ");

break;

case 9:

printf("%s", "tenth ");

break;

case 10:

printf("%s", "eleventh ");

break;

case 11:

printf("%s\n", "twelth");

break;

}

printf("%s\n", "day of Christmas my true love sent to me ");

switch (i)

{

case 0:

printf("%s\n\n", "a partridge in a pear tree");

break;

case 1:

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "A partridge in a pear tree");

break;

case 2:

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 3:

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 4:

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 5:

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 6:

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 7:

printf("%s\n", "Eight maids a-milking");

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 8:

printf("%s\n", "Nine ladies dancing");

printf("%s\n", "Eight maids a-milking");

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 9:

printf("%s\n", "Ten lords a-leaping");

printf("%s\n", "Nine ladies dancing");

printf("%s\n", "Eight maids a-milking");

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 10:

printf("%s\n", "Eleven pipers piping");

printf("%s\n", "Ten lords a-leaping");

printf("%s\n", "Nine ladies dancing");

printf("%s\n", "Eight maids a-milking");

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

case 11:

printf("%s\n", "Twelve drummers drumming");

printf("%s\n", "Eleven pipers piping");

printf("%s\n", "Ten lords a-leaping");

printf("%s\n", "Nine ladies dancing");

printf("%s\n", "Eight maids a-milking");

printf("%s\n", "Seven swans a-swimming");

printf("%s\n", "Six geese a-laying");

printf("%s\n", "Five golden rings");

printf("%s\n", "Four colly birds");

printf("%s\n", "Three French hens");

printf("%s\n", "Two turtle doves, and");

printf("%s\n\n", "a partridge in a pear tree");

break;

}

}

}

//Calculates the fair tax cost for monthly expenses.

void Problem4\_40()

{

printf("\n\n%s\n\n", "\*\*\* Problem4\_40 \*\*\*" );

float housingCost;

float foodCost;

float clothingCost;

float transportationCost;

float healthCareCost;

float educationCost;

float vacationCost;

printf("%s\n", "Fair Tax Calculator:");

printf("%s\n", "Please enter cost per month for the following categories:");

printf("%s", "Housing: ");

scanf("%f", &housingCost);

printf("%s", "Food: ");

scanf("%f", &foodCost);

printf("%s", "Clothing: ");

scanf("%f", &clothingCost);

printf("%s", "Transportation: ");

scanf("%f", &transportationCost);

printf("%s", "Health Care: ");

scanf("%f", &healthCareCost);

printf("%s", "Education: ");

scanf("%f", &educationCost);

printf("%s", "Vacation: ");

scanf("%f", &vacationCost);

float expenses = (housingCost + foodCost + clothingCost + transportationCost + healthCareCost + educationCost + vacationCost);

float estFairTax = 0.23 \* expenses;

printf("Your estimated Fair tax for all your expenses would be: %0.2f\n", estFairTax);

}

void Problem5\_48()

{

/\* Fiboncci sequence:

\* Using the implementation we have seen in class where we call the Fiboncci

\* function twice on the return where we add the two previous values

\* in the return statement. This is calling the function twice in the end.

\* Using the tail recursion method I found online, it accepts the index of the

\* value of the Fiboncci sequence number we want and returns it that value.

\* The tail recursion method is only called in the return statement and only

\* called once whereas the implementation derived in class calls the function

\* twice.

\*/

}

//Global warming quiz with a web link if 3 or less correct answers.

void Problem5\_49()

{

printf("\n\n%s\n\n", "\*\*\* Problem5\_49 \*\*\*" );

int numberCorrect = 0;

char answer;

printf("%s\n", "Global Warming Quiz");

printf("%s\n","1. Humans Burn \_\_\_\_\_\_\_\_\_ fuels which can add greenhouse gases." );

printf("%s\n","A. Energy");

printf("%s\n","B. Fossil");

printf("%s\n","C. Carbonic");

printf("%s\n","D. Liquid");

scanf(" %c", &answer );

if(answer == 'b' || answer == 'B') numberCorrect++;

printf("%s\n","2. What is the greenhosue effect?" );

printf("%s\n","A. Where heat is kept out of the Earth");

printf("%s\n","B. Where heat is kept in the Earth");

printf("%s\n","C. Where more light is let into the Earth");

printf("%s\n","D. Where less light is let into the Earth");

scanf(" %c", &answer );

if(answer == 'b' || answer == 'B') numberCorrect++;

printf("%s\n","3. What could one effect of global warming be?" );

printf("%s\n","A. More islands forming");

printf("%s\n","B. Sea level rise");

printf("%s\n","C. More volcanic eruptions");

printf("%s\n","D. More Landslides");

scanf(" %c", &answer );

if(answer == 'b' || answer == 'B') numberCorrect++;

printf("%s\n","4. What do greenhouse gases do?" );

printf("%s\n","A. They cause more heat to be kept out of the Earth.");

printf("%s\n","B. They cause the sun's light to be kept out of the Earth");

printf("%s\n","C. They absorb and hold in heat");

printf("%s\n","D. They cause acid rain.");

scanf(" %c", &answer );

if(answer == 'c' || answer == 'C') numberCorrect++;

printf("%s\n","5. Global Warming could cause " );

printf("%s\n","A. Forest Fires");

printf("%s\n","B. Glaciers to get smaller");

printf("%s\n","C. Glaciers to get bigger");

printf("%s\n","D. Volcanoes to errupt");

scanf(" %c", &answer );

if(answer == 'b' || answer == 'B') numberCorrect++;

if(numberCorrect == 5) printf("%s\n", "(5/5) Excellent");

if(numberCorrect == 4) printf("%s\n", "(4/5) VeryGood");

if(numberCorrect < 4)

{

printf("%s\n", "Time to brush up on your knowledge of global warming");

printf("%s\n", "Try looking at the following sites:");

printf("%s\n", "https://www.proprofs.com/quiz-school/topic/global-warming");

}

}