**1.)**

//

// main.c

// HW2

//

// Created by Isaiah Hakeem Chennault on 7/27/21.

//

#include <stdlib.h>

#include <stdio.h>

#include <math.h>

**int** main(**int** argc, **const** **char** \* argv[]) {

**double** loanAmount;

**double** interestRatePY;

**int** a;

**double** b;

**double** c;

**double** d;

**double** e;

printf("Enter amount loan $");

scanf("%lf",&loanAmount);

printf("Enter interest rate per year %%");

scanf("%lf",&interestRatePY);

printf("Enter number of payments ");

scanf("d,&a");

d = loanAmount;

b = ((c\*pow(1+c,a))/(pow(1+c,a)-1));

a = interestRatePY/1200;

printf("\n Monthly payment should be %lf\n,b-d\*c");

**for**(**int** i=0;i<24;i++){

printf("=");

printf("\n");

printf("# \t Payment \Principle \t Interest \t Balance\n");

**for**(**int** i=1;i<=a;i++){

**int** t = d\*c ;

**int** e = b-t;

d=d-e;

printf("%d \t $%0.2lf \t $%0.2lf \t $%0.2lf ",i,b,e,t);

**if**(t/10.0<1.0)

printf("\t\t $%0.2lf",d);

printf("\n");

}

**return** 0;

}

}

**2.)**

//

// loanCalcArr.c

// HW2

#include<stdlib.h>

#include<stdio.h>

#include<math.h>

**double** t[100005];

**double** d[100005];

**double** e[100005];

**int** main(**int** argc, **const** **char** \* argv[]) {

**double** amountLoad;

**double** interesrRatepy;

**int** numberPayments;

**char** ch='%';

printf("Enter loan amount $");

scanf("%lf",&amountLoad);

printf("Enter interest rate ");

printf("%c",ch);

scanf("%1f",&interesrRatepy);

printf("Enter number of payments ");

scanf("%d",&numberPayments);

**double** b;

**double** c;

**int** a;

c=interesrRatepy/1200;

a=numberPayments;

b=amountLoad\*((c\*pow(1+c,a))/(pow(1+c,a)-1));

d[0]=amountLoad;

printf("#\Payment \t Principal \t Interest\t Balance \n");

**for**(a=1;a<=numberPayments;a++){

t[a]=d[a-1]\*c;

e[a]=b-t[a];

d[a]=d[a-1]-e[a];

printf("%d \t $%0.21f \t $%0.21f \t $%0.21f \t $%0.21f", a,b,e[a],t[a],d[a]);

printf("\n");

}

**return** 0;

}

**3.)** //

// loanCalcPtr.c

// HW2

//

// Created by Isaiah Hakeem Chennault on 7/29/21.

//

//

// loanCalcstruct.c

// HW2

//

// Created by Isaiah Hakeem Chennault on 7/28/21.

//

#include "loanCalcstruct.h"

#include <stdio.h>

#include<math.h>

**int** main(**int** argc, **const** **char** \* argv[]){

**float** b;

**float** d;

**float** rt;

**float** c;

**int** i;

**int** a;

printf("Enter amount of loan: $ ");

scanf("%f", &d);

printf("Enter Interest rate per year: % ");

scanf("%f", &rt);

printf("Enter number of payments: ");

scanf("%d", &a);

**float** INT[a];

**float** PRI[a];

**float** p[a];

c = rt/1200;

p[0] = d;

**for**(i=1; i<=a; i++)

{

INT[i-1] = p[i-1] \* c;

c = d \* c \* pow(1+c, a)/(pow(1+c, a) - 1);

p[i] = pow(1+c, i)\*d - ((pow(1+c, i)-1)\*b/c);

PRI[i-1] = c - INT[i-1];

}

**float** \*intr = INT, \*prin = PRI, \*bal = p;

c = d \* c \* pow(1+c, a)/(pow(1+c, a) - 1);

printf("\nMonthly payment should be %5.2f", b);

printf("\n AMORTIZATION SCHEDULE \n");

printf("\n#\tPayment\t\tPrincipal\tInterest\tBalance\n");

**for**(i=0; i<a; i++)

{

printf("%d\t$ %5.2f\t$ %5.2f \t$ %5.2f \t$ %5.2f\n" , i+1, b, \*prin++, \*intr++, \*++bal);

}

}

**4.)**

//

// loanCalcstruct.c

// HW2

//

// Created by Isaiah Hakeem Chennault on 7/28/21.

//

#include <stdio.h>

#include<math.h>

**int** main(**int** argc, **const** **char** \* argv[]){

**typedef** **struct** Loan

{

**float** e;

**float** PRI;

**float** INT;

}

loan;

**float** b;

**float** d;

**float** rt;

**float** c;

**int** i;

**int** a;

printf("Enter amount of loan: $ ");

scanf("%f", &d);

printf("Enter Interest rate per year: % ");

scanf("%f", &rt);

printf("Enter number of payments: ");

scanf("%d", &a);

loan ln[a];

c = rt/1200;

ln[0].e = d;

**for**(i=1; i<=a; i++)

{

ln[i-1].INT = ln[i-1].e \* c;

c = d \* c \* pow(1+c, a)/(pow(1+c, a) - 1);

ln[i].e = pow(1+c, i)\*d - ((pow(1+c, i)-1)\*b/c);

ln[i-1].PRI = b - ln[i-1].INT;

}

c = d \* c \* pow(1+c, a)/(pow(1+c, a) - 1);

printf("\nMonthly payment should be %5.2f", b);

printf("\n AMORTIZATION SCHEDULE \n");

printf("\n#\tPayment\t\tPrincipal\tInterest\tBalance\n");

**for**(i=0; i<a; i++)

{

printf("%d\t$ %5.2f\t$ %5.2f \t$ %5.2f \t$ %5.2f\n" , i+1, b, ln[i].PRI, ln[i].INT, ln[i+1].e);

}

}