```
// hw 2.1  C program to add square of n terms.

# include <stdio.h>
int main ()
{
	int i,n,sum=0;
	printf("Enter the number upto which the sum of squares is to be calculated\n");
	scanf("%d",&n);

	for (i=1;i<=n,i++)
	{
		sum += i*i;
	}
	printf("The sum of squares of numbers upto n is = %d\n",sum);
return 0;
}

….....
// hw 2.2
//Develop a C program named Hawaiian Tourism Board Average Temperature
// where the user can enter up to 10 days of temperature and the program computes
// and displays the average temperature in those 10 days.

#include <stdio.h>
int main ()
{
	int i;
	double avg,temp=0,sum;
	printf("Please enter temperature of 10 days");
	printf(" and press enter key each time\n");

	for (i=1;i<=10;i++)			// for while loop while(i<=10) is used and i=0 is defined
before and i++ used inside loop
	{

		scanf ("%lf",&temp);

		sum += temp;

	}

	avg = sum/10;
	printf("The average temperature of 10 days is %.2f\n",avg);
return 0;
}
```

….....
/* homework 2.3 project #2 in textbook page 231

Write a program that calculates the user's body mass index (BMI) and categorizes it as underweight, normal, overweight, or obese, based on the following table from the United States Centers for Disease Control:

BMI	Weight Status
Below 18.5	Underweight
18.5–24.9	Normal
25.0–29.9	Overweight
30.0 and above	Obese

To calculate BMI based on weight in pounds (wt_lb) and height in inches (ht_in), use this formula (rounded to tenths):

BMI = (703 * wt_lb) / (ht_in*ht_in)

Prompt the user to enter weight in pounds and height in inches.
*/

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

int main ()
{
	float ht_in,wt_lb;
	float BMI1,BMI;

	printf("Enter the value of your weight in pounds\n");
	scanf ("%f",&wt_lb);
	printf("Enter the value of your height in inches\n");
	scanf ("%f",&ht_in);

	BMI1 = (703 * wt_lb) / (ht_in * ht_in) ;
	BMI  = roundf (BMI1 * 10)/10;                                   // roundf (1.23456 * 10)/10
= 1.200000 (rounded bmi)
                                                                    // roundf (1.23456 * 100)/100 =
1.230000


	printf("The value of your BMI is %f\n",BMI1);
	printf("Rounded value of  BMI is %f\n",BMI);
	printf("Rounded value of  BMI is %.1f\n",BMI);

	if (BMI <= 18.5)
		printf("Your weight status is: underweight\n");
	else if (BMI > 18.5 && BMI <= 24.9)
```

```
                printf("Your weight staus is: Normal\n");
        else if (BMI >= 25.0 && BMI <= 29.9 )
                printf("Your weight status is: Overweight\n");
        else
                printf("Your weight status is: Obese\n");

return 0;
}
```

….....

```
/* hw 2.4
Develop a C program that lets the user
to enter many values and displays the number
as EVEN number or ODD number as the value is entered
and display total EVEN numbers and total ODD numbers.
*/

#include <stdio.h>

void main()

{
        int n,x,rem,even,odd;                   // n is the number of values entered

        int  i;                 // i is the count. i goes from 0 to n

        printf("How many values you want to enter? \n");
        scanf ("%d", &n);
        printf("************************************\n");

        i    = 0;
      even = 0;
      odd  = 0;


      // if we use while loop we need      i++; inside the  loop
      // if we use for   loop we dont need i++; inside the loop



      //while (i < n)
      for (i = 0; i < n; i++)

      {  //i++;
                printf("Enter an integer \n");
                scanf("%d", &x);

                rem = x % 2 ;
```

```
            if (rem == 0) {
            printf("%d is an EVEN integer\n", x);
            even += 1; }
            else {
            printf("%d is an ODD  integer\n", x);
            odd ++; }

    }
      printf("total number of even integers is %d\n", even);        // total number is outside the loop
      printf("total number of odd  integers is %d\n", odd );



            printf("************************************\n");
  }
```

….....

```
/* hw 2.5
```

Assume that you offer programming seminars to companies. Your price per person depends on the number of people the company registers. For example, if the company registers 6 people, then the total amount owed is $480, which is calculated by multiplying the number of registrants by $80.

Number of Registrants	charge criteria
1 – 4	$100 per person
5 – 10	$80 per person
11 or more	$65 per person

```
*/

#include <stdio.h>
int main ()
{

      int n,t;

      printf("Enter number of registrants\n");
      scanf ("%d",&n);

      if (n<=4)
      {
            t = n*100;
            printf("The total amount owed is:$ %d\n",t);
      }
      else if (n>=5 && n<=10)
      {
            t = n*80;
            printf("The total amount owed is:$ %d\n",t);
      }
      else
      {
```

```
                t = n*65;
                printf("The total amount owed is:$ %d\n",t);
        }
return 0;
}
```

….....

```
/*  hw 2.6
bicycle salesperson is offered a choice of wage plans:
(1) a straight salary of $300 per week;
(2) $3.50 per hour for 40 hours plus a 10% commission on sales;
(3) a straight 15% commission on sales with no other salary.
 Develop a C program that takes as input the salesperson's expected weekly sales
 and outputs the wages paid under each plan as well as announcing the best-paying plan.
 */

 #include<stdio.h>


 int main()
 {
        float x,t1,t2,t3,m;

        printf("Enter the expected weekly sales\n");
        scanf ("%f",&x);

        t1 = 300;
        t2 = 3.5*40 + (x/10.0);
        t3 = 15*x/100.0;

        printf("The first  plan gives total amount of $%.2f\n",t1);
        printf("The second plan gives total amount of $%.2f\n",t2);
        printf("The third  plan gives total amount of $%.2f\n",t3);

        if (t1==t2==t3)
                printf("All the plans are same\n");
        else if (t1==t2)
                printf("First and second are same and better than third plan\n");     // e.g. 1600
        else if (t2==t3)
                printf("Second and third plans are same and better than first\n");    // e.g. 2800
        else if (t1==t3)
                printf("First and third plan are same but better plan is second plan\n");      // eg. 2000
first=third=300 but second=340
        else if(t1>=t2 && t1>=t3)
        printf("The best-paying plan is first plan.\n");
        else if(t2>=t1 && t2>=t3)
        printf("The best-paying plan is second plan\n");
        else if (t3>=t1 && t3>=t2)
        printf("The best-paying plan is third plan\n");
```

```
 return 0;
 }
```

….....

```
/* hw 2.7
        Develop a program to implement the Flight classification according to the criteria:
        Flight Code             Classification
        F or A                  First class
        B or Q                  Business class
        Y or S or M             Full Fare Economy
        K or C                  Preferred Economy
        U, J, P or G            Economy class
Implement using switch statements.
*/

#include <stdio.h>
int main ()
{
        char code;

        printf("Please enter the flight code\n");
        scanf ("%c",&code);


        switch(code)
        {
                case'f' :
                case'a' :
                case 'F':
                case 'A':
                        printf("You are in first class\n");
                        break;
                case 'b':
                case 'q':
                case 'B':
                case 'Q':
                        printf("You are in business class\n");
                        break;
                case 'y':
                case 's':
                case 'm':
                case 'Y':
                case 'S':
                case 'M':
                        printf("You are in full fare economy class\n");
                        break;
```

```
                case 'k':
                case 'c':
                case 'K':
                case 'C':
                        printf("You are in preferred economy class\n");
                        break;
                case 'u':
                case 'j':
                case 'p':
                case 'g':
                case 'U':
                case 'J':
                case 'P':
                case 'G':
                        printf("You are in economy class\n");
                        break;

        default :
                        printf("You entered wrong flight code, please enter correct code\n");
                        break;
        }

return 0;
}
```

….....

```
/* hw 2.8
Develop a program that computes the cost of postage on a first class letter
according in the following rate schedule:
44 cents for the first ounce or fraction of an ounce.
15 cents for each additional half ounce, plus $5.00 service charge if the customer desires a special
delivery.
*/

/* example 5.1 ounces with with special delivery
  total = 44 + 4*2*15 + 1*15 + 5;
  for 5.7 ounces with special delivery
  total = 44 + 4*2*15 + 2*15 + 5;
  inputs are ounces and special delivery y or n;
  output is total cost

 */

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

 int main ()
 {
        int integer;
        float ounces,total,decimal,dollar;
```

```
        char choice,y,n;

        printf("Would you like to request for special delivery?\n");
        printf("if yes press y,\nif no please press n\n");
        scanf ("%c", &choice);


        printf("Please enter the weight of the parcel in ounces\n");
        scanf ("%f", &ounces);

        integer = floor (ounces);
        decimal = ounces- integer;

        if (ounces <=1 && choice == 'n' ) {
                printf("The total due is 44 cents\n"); }

        else if (ounces <=1 && choice == 'y') {
                printf("Including special delivery charge $5, ");                       // $5 is added for
special delivery
                printf("the total due is $5.44\n"); }

        else if (ounces >1 && choice == 'n' && decimal<=.5 && decimal >0) {             // case like 5.1
                total = 44 + (integer-1)*2*15 + 1*15;
                dollar= total/100.0;
                printf("The total due is $ %.2f\n",dollar); }
        else if (ounces >1 && choice == 'n' && decimal<=.5 && decimal == 0) {                   // case
like 5.0
                total = 44 + (integer-1)*2*15 + 0*15;
                dollar= total/100.0;
                printf("The total due is $ %.2f\n",dollar); }

        else if (ounces >1 && choice == 'n' && decimal >.5) {                           // case like 5.6
                total = 44 + (integer-1)*2*15 + 2*15;
                dollar= total/100.0;
                printf("The total due is $%.2f \n",dollar); }

        else if (ounces >1 && choice == 'y' && decimal <=.5 && decimal >0) {
                total = 44 + (integer-1)*2*15 + 1*15 + 500;
                dollar= total/100.0;
                printf("Including special delivery cost of $5, ");
                printf("the total due is $%.2f\n",dollar); }
        else if (ounces >1 && choice == 'y' && decimal <=.5 && decimal == 0) {
                total = 44 + (integer-1)*2*15 + 0*15 + 500;
                dollar= total/100.0;
                printf("Including special delivery cost of $5, ");
                printf("the total due is $%.2f\n",dollar); }

        else if (ounces >1 && choice == 'y' && decimal >.5) {
                total = 44 + (integer-1)*2*15 + 2*15 + 500;
```

```
                dollar= total/100.0;
                printf("Including special delivery cost $5, ");
                printf("the total due is $ %.2f\n",dollar); }
        else
                printf("Please enter the correct values");              // when we press alphabet other than
y or n this will be displayed
                printf("\n\n");


return 0;
}
```
….....