Homework 5 Solution

EX1: C Program to Store Information(name, roll and marks) of a Student Using Structure

```
#include <stdio.h>
struct student{
    char name[50];
    int roll;
    float marks;
};
int main(){
    struct student s;
    printf("Enter information of students:\n\n");
    printf("Enter name: ");
    scanf("%s",s.name);
    printf("Enter roll number: ");
    scanf("%d",&s.roll);
    printf("Enter marks: ");
    scanf("%f",&s.marks);
    printf("\nDisplaying Information\n");
    printf("Name: %s\n",s.name);
    printf("Roll: %d\n",s.roll);
    printf("Marks: %.2f\n",s.marks);
    return 0;
}
```

EX2: C Program to Add Two Distances (in inch-feet) System Using Structures

```
#include <stdio.h>
struct Distance{
   int feet;
   float inch;
}d1,d2,sum;
int main(){
   printf("Enter information for 1st distance\n");
   printf("Enter feet: ");
   scanf("%d",&d1.feet);
   printf("Enter inch: ");
```

```
   scanf("%f",&d1.inch);
   printf("\nEnter information for 2nd distance\n");
   printf("Enter feet: ");
   scanf("%d",&d2.feet);
   printf("Enter inch: ");
   scanf("%f",&d2.inch);
   sum.feet=d1.feet+d2.feet;
   sum.inch=d1.inch+d2.inch;

/* If inch is greater than 12, changing it to feet. */
   if (sum.inch>12.0)
   {
      sum.inch=sum.inch-12.0;
      ++sum.feet;
   }
   printf("\nSum of distances=%d\'-%.1f\"",sum.feet,sum.inch);
   return 0;
}
```

EX3: C Program to Add Two Complex Numbers by Passing Structure to a Function

```
#include <stdio.h>
typedef struct complex{
   float real;
   float imag;
}complex;
complex add(complex n1,complex n2);
int main(){
   complex n1,n2,temp;
   printf("For 1st complex number \n");
   printf("Enter real and imaginary respectively:\n");
   scanf("%f%f",&n1.real,&n1.imag);
   printf("\nFor 2nd complex number\n");
   printf("Enter real and imaginary respectively:\n");
   scanf("%f%f",&n2.real,&n2.imag);
   temp=add(n1,n2);
   printf("Sum=%.1f+%.1fi",temp.real,temp.imag);
   return 0;
}
complex add(complex n1,complex n2){
     complex temp;
     temp.real=n1.real+n2.real;
     temp.imag=n1.imag+n2.imag;
     return(temp);
}
```

EX4: C Program to Store Information of Students Using Structure

```
#include <stdio.h>
struct student{
   char name[50];
   int roll;
   float marks;
};
int main(){
   struct student s[10];
   int i;
   printf("Enter information of students:\n");
   for(i=0;i<10;++i)
   {
      s[i].roll=i+1;
      printf("\nFor roll number %d\n",s[i].roll);
      printf("Enter name: ");
      scanf("%s",s[i].name);
      printf("Enter marks: ");
      scanf("%f",&s[i].marks);
      printf("\n");
   }
   printf("Displaying information of students:\n\n");
   for(i=0;i<10;++i)
   {
    printf("\nInformation for roll number %d:\n",i+1);
    printf("Name: ");
    puts(s[i].name);
    printf("Marks: %.1f",s[i].marks);
  }
  return 0;
}
```

EX5: C Program to find area of a circle, passing arguments to macros. [Area of circle=πr2]

```
#include <stdio.h>
#define PI 3.1415
#define area(r) (PI*(r)*(r))
int main(){
   int radius;
   float area;
   printf("Enter the radius: ");
   scanf("%d",&radius);
```

```
    area=area(radius);
    printf("Area=%.2f",area);
    return 0;
}
```

EX6: write the output of this program

Output

```
size of union = 32
size of structure = 40
```