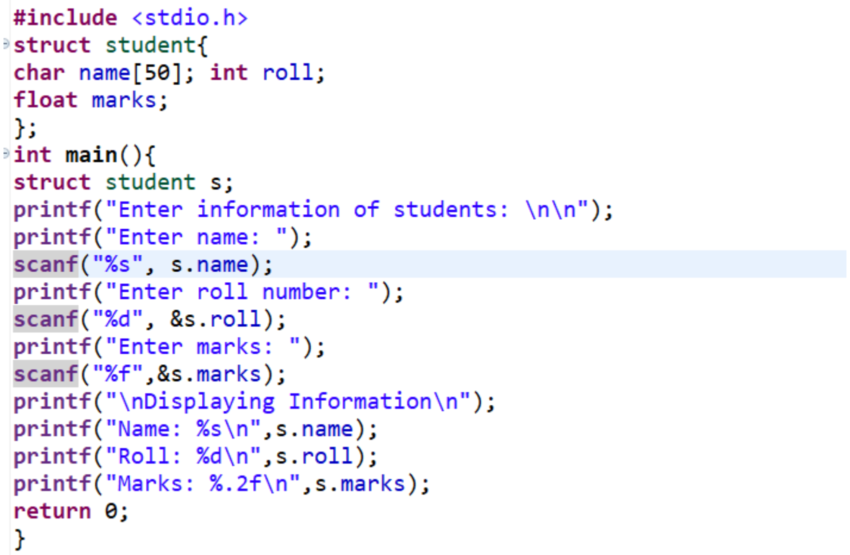
ASSIGNMENT

Lecture 6

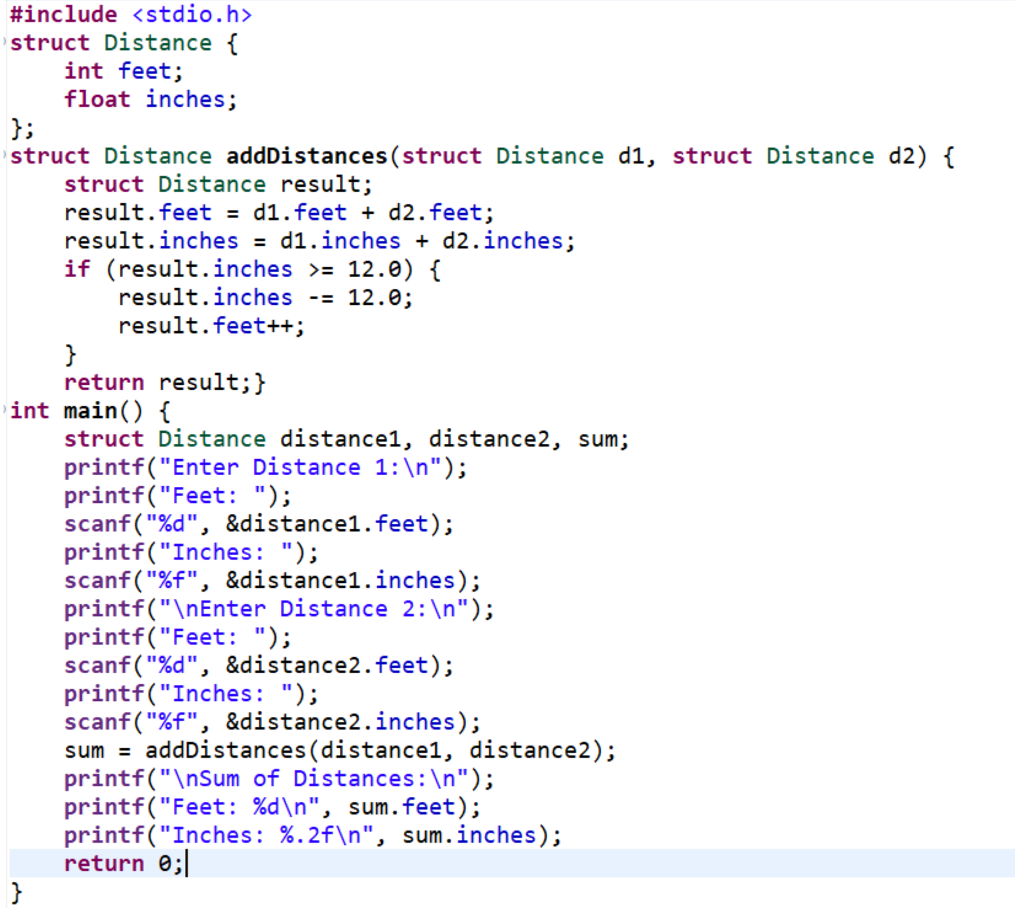
C-Programming (Structure&Union&Enum)
ENG/Mostafa Hassan Aboshaker

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



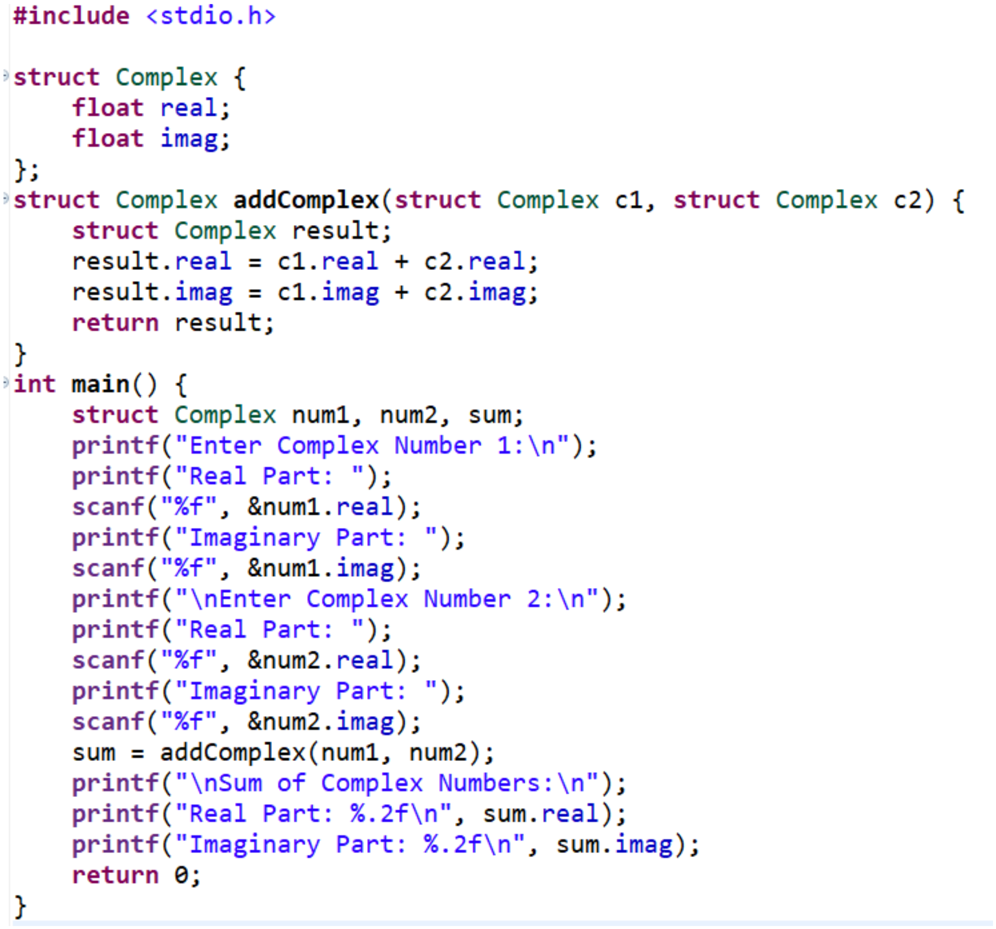
```
#include <stdio.h>
struct student{
char name[50]; int roll;
float marks;
};
int main(){
struct student s;
printf("Enter information of students: \n\n");
printf("Enter name: ");
scanf("%s", s.name);
printf("Enter roll number: ");
scanf("%d", &s.roll);
printf("Enter marks: ");
scanf("%f",&s.marks);
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 inches;
};
struct Distance addDistances(struct Distance d1, struct Distance d2) {
    struct Distance result;
    result.feet = d1.feet + d2.feet;
    result.inches = d1.inches + d2.inches;
    if (result.inches >= 12.0) {
        result.inches -= 12.0;
        result.feet++;
    }
    return result;}
int main() {
    struct Distance distance1, distance2, sum;
    printf("Enter Distance 1:\n");
    printf("Feet: ");
    scanf("%d", &distance1.feet);
    printf("Inches: ");
    scanf("%f", &distance1.inches);
    printf("\nEnter Distance 2:\n");
    printf("Feet: ");
    scanf("%d", &distance2.feet);
    printf("Inches: ");
    scanf("%f", &distance2.inches);
    sum = addDistances(distance1, distance2);
    printf("\nSum of Distances:\n");
    printf("Feet: %d\n", sum.feet);
    printf("Inches: %.2f\n", sum.inches);
    return 0;
}
```

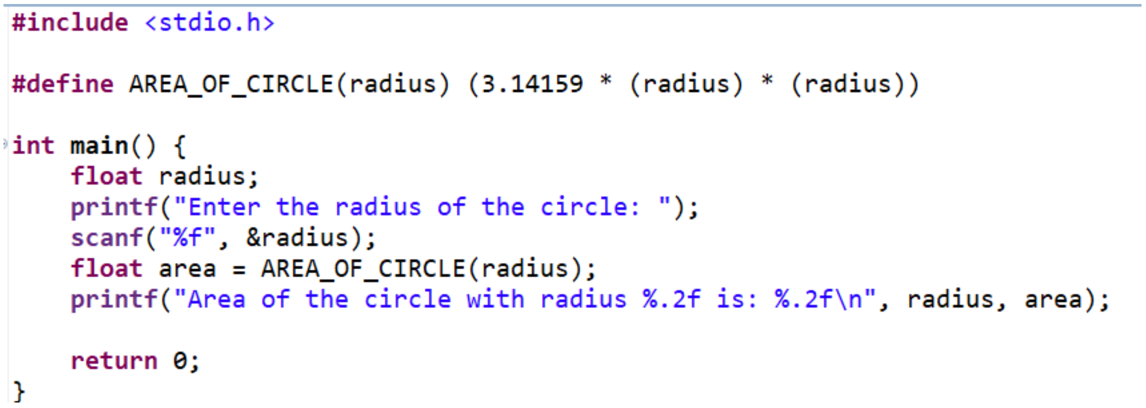
EX3: C Program to Add Two Complex Numbers by Passing Structure to a Function



```c
#include <stdio.h>

struct Complex {
    float real;
    float imag;
};
struct Complex addComplex(struct Complex c1, struct Complex c2) {
    struct Complex result;
    result.real = c1.real + c2.real;
    result.imag = c1.imag + c2.imag;
    return result;
}
int main() {
    struct Complex num1, num2, sum;
    printf("Enter Complex Number 1:\n");
    printf("Real Part: ");
    scanf("%f", &num1.real);
    printf("Imaginary Part: ");
    scanf("%f", &num1.imag);
    printf("\nEnter Complex Number 2:\n");
    printf("Real Part: ");
    scanf("%f", &num2.real);
    printf("Imaginary Part: ");
    scanf("%f", &num2.imag);
    sum = addComplex(num1, num2);
    printf("\nSum of Complex Numbers:\n");
    printf("Real Part: %.2f\n", sum.real);
    printf("Imaginary Part: %.2f\n", sum.imag);
    return 0;
}
```

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

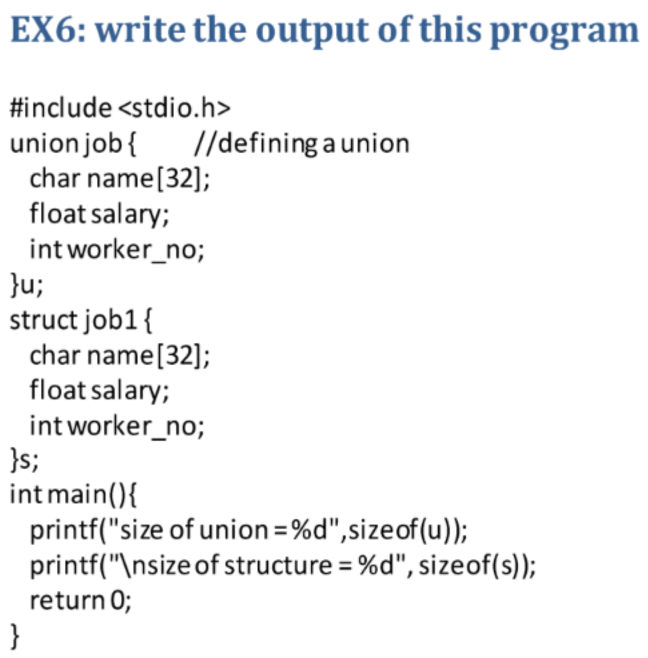


```c
#include <stdio.h>

#define AREA_OF_CIRCLE(radius) (3.14159 * (radius) * (radius))

int main() {
    float radius;
    printf("Enter the radius of the circle: ");
    scanf("%f", &radius);
    float area = AREA_OF_CIRCLE(radius);
    printf("Area of the circle with radius %.2f is: %.2f\n", radius, area);

    return 0;
}
```



EX6: write the output of this program

```
#include <stdio.h>
union job {        //defining a union
   char name[32];
   float salary;
   int worker_no;
}u;
struct job1 {
   char name[32];
   float salary;
   int worker_no;
}s;
int main(){
   printf("size of union = %d",sizeof(u));
   printf("\nsize of structure = %d", sizeof(s));
   return 0;
}
```

Solution:

size of union=32

size of structure=40