结构体

- 下面程序运行结果是（　　）

```
int main()
{
    struct stu{
        char name[12];
        int age;
        int sex;
    };
    printf("%d", sizeof(struct stu));
    return 0;
}
```

- 输入坐标平面上的一点 `(x,y)` ，求该点到原点 `(0,0)` 的距离。

```
_____(1)_____ Node
{
    float x;
    float y;
};
int main()
{
    struct Node point;
    scanf("%f %f", &point.x, &point.y);
    float d;
    d = sqrt(_____(2)_____);
    printf("%f", d);
}
```

- 下面程序输出结果是（　　）

```
int main()
{
    struct c{
        int x, y;
    }s[2] = {1,3,2,7};
    printf("%d", s[0].x * s[1].x);
}
```

- 下面程序输出结果是（　　）

```
struct KeyWord
{
    char Key[20];
    int ID;
} kw[] = {"void", 1, "char", 2, "int", 3, "float",4,"double",5};
int main()
{
    printf("%c,%d",kw[3].Key[0], kw[3].ID);
}
```

- 下面程序输出结果是（　　）

```
struct {
    int num;
    char name[10];
}x[3]={1,"China",2,"USA",3,"England"};
int main(){
    printf("%d,%s", x[1].num, x[2].name);
}
```

- 下面程序输出结果是（　　）

```
struct contry{
    int num;
    char name[20];
}x[5]={1,"China",2,"USA",3,"France",4,"England",5,"Spanish"};
int main()
{
    for (int i = 3; i < 5; i++){
        printf("%d%c",x[i].num,x[i].name[0]);
    }
}
```

- 下面程序输出结果是（　　）

```
struct date{
    int year, month, day;
};
struct s{
    struct date birthday;
    char name[20];
}x[4] = {{2008,1,"Guangzhou"},{2009,12,25,"Tianjin"}};
int main(){
    printf("%s,%d,%d,%d", x[0].name, x[1].birthday.year);
}
```

- 下面程序输出结果是（　　）

```
struct s{
    int x, y;
}data[2] = {10,100,20,200};
int main()
{
    struct s *p;
    p = data;
    printf("%d", ++(p->x));
    printf("%d", (++p)->y);
}
```

- 结构体成员的访问

```c
int main()
{
    struct node{
    int count;
    char name[20];
    }a, *p;
    p = &a;
    a.count;  a.name;
    p->count; p->name;
    (*p).count; (*p).name;
}
```

- 给《我是歌手》大赛栏目设计计票程序。请填空。

```c
#include<stdio.h>
struct node
{
    int count;
    char name[20];
};
struct node a[3] = {0,"lilei", 0, "zhangsan", 0, "lisi"};
int main()
{
    int i, j;
    _____;
    for (i = 1; i <= 100; i++) // 100人参与投票
    {
        scanf("%s", name1);  // 输入姓名投票
        for (j = 0; j < 3; j++){
            if (_____ ) // 与选手名字相通，对应票数加一
            {
                a[j].count++; break;
            }
        }
    }
    for (i = 0; i < 3; i++) //输出每个人的票数
        printf("%s:%d\n",a[i].name, a[i].count);
}
```

- 下面程序输出结果是（　　）

```c
struct st{
    int x;
    int *y;
};
int dt[4] = {10,20,30,40};
struct st aa[4] = {50,&dt[0],60,&dt[1],70,&dt[2],80,&dt[3]};
int main()
{
    struct st *p = aa;
    printf("%d\n", ++p->x);
    printf("%d\n", (++p)->x);
    printf("%d\n", ++(*p->y));
}
```

- 下面程序输出结果是（　　）

```
struct STU{
    int num;
    float score;
};
void f1(struct STU p)
{
    struct STU s[2] = {{20044,550}, {20045,537}};
    p.num = s[0].num; p.score = s[0].score;
}
void f2(struct STU *p)
{
    struct STU s[2] = {{20044,550}, {20045,537}};
    p->num = s[0].num; p->score = s[0].score;
}
main()
{
    struct STU s[2] = {{20044,550},{20045,537}};
    f1(s[0]);  f2(&s[1]);
    printf("%d,%3.0f\n", s[0].num, s[0].score);
    printf("%d,%3.0f\n", s[1].num, s[1].score);
}
```

- 下面程序输出结果是（　　）

```
struct HAR{
    int x, y;
    struct HAR *p;
}h[2];
int main()
{
    h[0].x = 1; h[0].y = 2;
    h[1].x = 3; h[1].y = 4;
    h[0].p = &h[1];
    h[1].p = &h[0];
    printf("%d %d",(h[0].p)->x, (h[1].p)->y);
}
```

- `typedef`

```
typedef int i32;
i32 a; // 等价于 int a;

typedef struct STU{
    char name[20];
    char ID[20];
}Student;

Student zs; // 等价于
struct STU as;
```

- 参考文档：https://wangdoc.com/clang/struct.html