

# DSA Structure Basics

October 28, 2023

## 1 Structure Array

```
1 // Structure Array
2 #include <stdio.h>
3
4 struct date
5 {
6     int d, m, y;
7 };
8
9 struct date inputDate();
10 void showDate(struct date);
11
12 int main()
13 {
14
15     // struct date d1;
16     struct date dob[4]; // space occuiped 48bytes
17     printf("enter four DOB of four students\n");
18     int i = 0;
19     for (i = 0; i <= 3; i++)
20     {
21         dob[i] = inputDate();
22     }
23     // d1=inputDate();
24     for (i = 0; i <= 3; i++)
25     {
26         showDate(dob[i]);
27     }
28     // d2=d1;//assigning structure d1 to structure d2
29     return 0;
30 }
31
32 void showDate(struct date anyDate)
33 {
34     printf("%d-%d-%d\n", anyDate.d, anyDate.m, anyDate.y);
35 }
36
37 struct date inputDate()
```

```

38 {
39     struct date anyDate;
40     printf("\nEnter a date");
41     scanf("%d/%d/%d", &anyDate.d, &anyDate.m, &anyDate.y);
42     return anyDate;
43 }

```

## 2 Structure Pointer

```

1  // structure pointer
2  #include <stdio.h>
3
4  struct date
5  {
6      int d, m, y;
7  };
8
9  struct date inputDate();
10 void showDate(struct date);
11
12 int main()
13 {
14
15     // struct date d1;
16     struct date d1; // space occuiped 48bytes
17     struct date *p;
18     printf("enter four DOB of four students\n");
19     p = &d1; // passing the structure reference to the pointer variable of
              // type date
20     /*p is equivalent to d1 (important)
21     *p = inputDate();
22     // printf("%d\n", p->d); accessing structure variables using pointers
23     showDate(*p);
24     // d2=d1; //assigning structure d1 to structure d2
25     return 0;
26 }
27
28 void showDate(struct date anyDate)
29 {
30     printf("%d-%d-%d\n", anyDate.d, anyDate.m, anyDate.y);
31 }
32
33 struct date inputDate()
34 {
35     struct date anyDate;
36     printf("\nEnter a date");
37     scanf("%d/%d/%d", &anyDate.d, &anyDate.m, &anyDate.y);
38     return anyDate;
39 }

```