

Structures

Er. Shiva K. Shrestha (HoD)
Department of Computer Engineering,
Khwopa College of Engineering

Overview

- ▶ Defining a Structure
- ▶ Structure Initialization
- ▶ Accessing Structure Member
- ▶ How Structure Elements are Stored?
- ▶ Comparing of Array & Structure
- ▶ Array of Structure
- ▶ Initializing Array of Structure
- ▶ Nested Structure
- ▶ Pointers to Structure
- ▶ Function & Structure
 - ▶ Passing structure members to a function
 - ▶ Passing an entire structure to a function
 - ▶ Passing structure pointer to a function

Structure Definition

(Structure Template Declaration)

```
struct tag_name{  
    data_type member_1;  
    data_type member_2;  
    ...           ...  
    data_type member_n;  
};
```

Example:

```
struct student{  
    char name[50];  
    int roll;  
    float marks;  
    char gender;  
};
```

A structure is a collection of one or more than one variable, possibly of different data type, grouped together under a single name for convenient handling.

Example# 1

4

```
C8_1.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct account{
4      ....int acc_no;
5      ....char acc_type;
6      ....char name[80];
7      ....float balance;
8  };
9  struct account cust;
10 int main(){
11     printf("Enter Name: \n");
12     //scanf("%s", cust.name);
13     gets(cust.name);
14     printf("\nName = %s", cust.name);
15     getch();
16     return 0;
17 }
```

C:\Users\ErSKS\Google Drive
Enter Name:
Arpan Sharma
Name = Arpan Sharma_

Task

5

- ▶ WAP to read roll number & name of a student from console & display it after reading both parameters.
- ▶ WAP to read roll number & name of a student from console & display it after reading both parameters.
Hint:- Use structure

Declaration of a Structure variable

- ▶ `[storage_class] struct tag variable_1, variable_2, ..., variable_n;`

```
C8_2.c
1  #include<stdio.h>
2  #include<conio.h>
3  struct{
4      int acc_no;
5      char acc_type;
6      char name[80];
7      float balance;
8  }cust;
9  int main(){
10     printf("Enter Name: ");
11     //scanf("%s", cust.name);
12     gets(cust.name);
13     printf("\nName = %s", cust.name);
14     getch();
15     return 0;
16 }
```

```
struct account{
    int acc_no;
    char acc_type;
    char name[80];
    float balance;
};
struct account old_customer,
new_customer;
```

or

```
struct account{
    int acc_no;
    char acc_type;
    char name[80];
    float balance;
}old_customer, new_customer;
```

Accessing Structure Member

Structure use a dot(.) operator to access individual elements.

▶ `structure_name.member_name`

- ▶ `printf("Book Name = %s", b1.name); // C Programming`
- ▶ `printf("Book Name = %f", b1.price); // 130.00`
- ▶ `printf("Book Name = %d", b1.pages); // 550`
- ▶ `printf("Book Name = %s", b2.name); // ?`
- ▶ `printf("Book Name = %f", b2.price); // ?`
- ▶ `printf("Book Name = %d", b2.pages); // ?`

Structure Initialization

- ▶ Like primary variables and arrays, structure variables can also be initialized where they are declared. The format used is quite similar to that used to initialize arrays.

```
C8_3.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct book{
4      char name[20];
5      float price;
6      int pages;
7  };
8  struct book b1={"Basic C",130.00,550};
9  struct book b2={"Math-I",150.50,800};
10
11 int main(){
12     printf("Book Details:\nName\tPrice\tPages\n");
13     printf("%s\t%.2f\t%d", b1.name, b1.price, b1.pages);
14     printf("\n%s\t%.2f\t%d", b2.name, b2.price, b2.pages);
15     getch();
16     return 0;
17 }
```

C:\Users\ErSKS\Google Drive

Book Details:

Name	Price	Pages
Basic C	130.00	550
Math-I	150.50	800

s.roll	s.marks	s.gender
25	88.00	'M'
170	172	176

How Structure Elements are Stored?

```

File Edit Search Run Compile Debug Project Options Window Help
C8_3_2.C 1=[↑]
#include<stdio.h>
#include<conio.h>
struct student{
    int roll;
    float marks;
    char gender;
};
struct student s={25, 88.00, 'M'};

int main(){
    clrscr();
    printf("Address of roll = %u, ", &s.roll);
    printf("sizeof(roll) = %d\n", sizeof(int));
    printf("Address of marks = %u, ", &s.marks);
    printf("sizeof(marks) = %d\n", sizeof(float));
    printf("Address of gender = %u, ", &s.gender);
    printf("sizeof(gender) = %d\n", sizeof(char));
    getch();
    return 0;
}
16:37
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu

```

DOSBox 0.74, Cpu speed: max 100% cycles, Frame
Address of roll = 170, sizeof(roll) = 2
Address of marks = 172, sizeof(marks) = 4
Address of gender = 176, sizeof(gender) = 1

WAP to enter name, price & pages of 3 books & display entered information.

10

C8_4.C

```
1  #include<stdio.h>
2  #include<conio.h>
3  struct book{
4      char name[20];
5      float price;
6      int pages;
7  };
8  struct book b1,b2,b3;
9  int main(){
10     printf("Enter Name, Price & No. of Pages of 3 Books:\n");
11     scanf("%s%f%d",b1.name,&b1.price,&b1.pages);
12     scanf("%s%f%d",b2.name,&b2.price,&b2.pages);
13     scanf("%s%f%d",b3.name,&b3.price,&b3.pages);
14
15     printf("\nThis is what you entered");
16     printf("\n%s\t%.2f\t%d",b1.name,b1.price,b1.pages);
17     printf("\n%s\t%.2f\t%d",b2.name,b2.price,b2.pages);
18     printf("\n%s\t%.2f\t%d",b3.name,b3.price,b3.pages);
19     getch();
20     return 0;
21 }
```

C:\Users\ErSKS\Google Drive (c.khwopa@gmail.com)\C_

Enter Name, Price & No. of Pages of 3 Books:

C-Programming 600 542

Learning-C 650 422

Let-Us-C 336 748

This is what you entered

C-Programming 600.00 542

Learning-C 650.00 422

Let-Us-C 336.00 748_

Array vs. Structure

Array

- ▶ Collection of similar data types
- ▶ Derived data type
- ▶ Subscript/index is used to access the member of an array.
- ▶ Array behaves like a built-in data types only we need to declare to it.
- ▶ Example: `int a[5];`

Structure

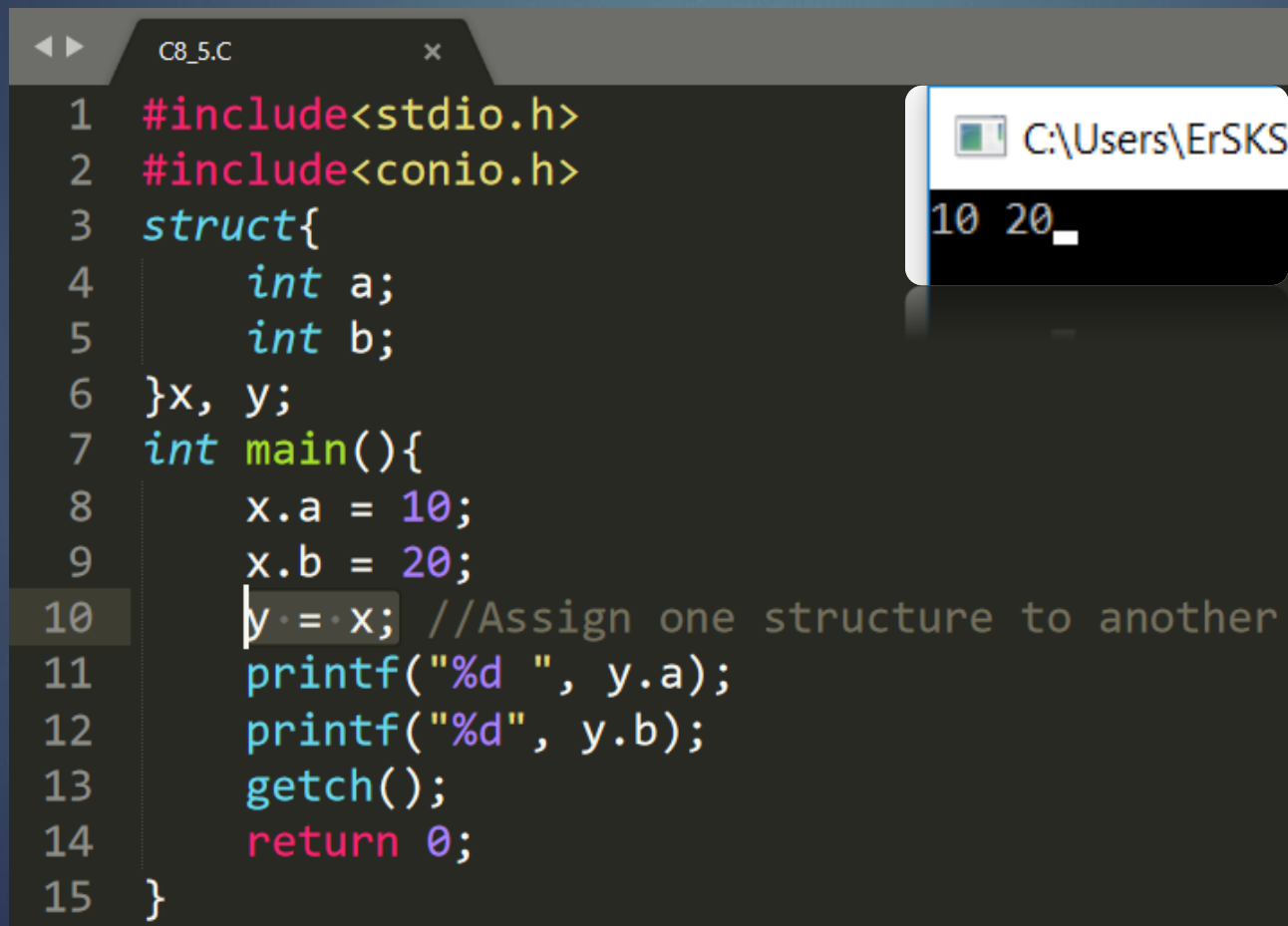
- ▶ Collection of dissimilar data types
- ▶ User-defined data type
- ▶ Dot operator is used to access the member of a structure.
- ▶ First need to design & declare structure before the variable of that type are declared & used
- ▶ Example:

```
struct num{  
    int a; float b; char c;  
};
```

Structure Assignment

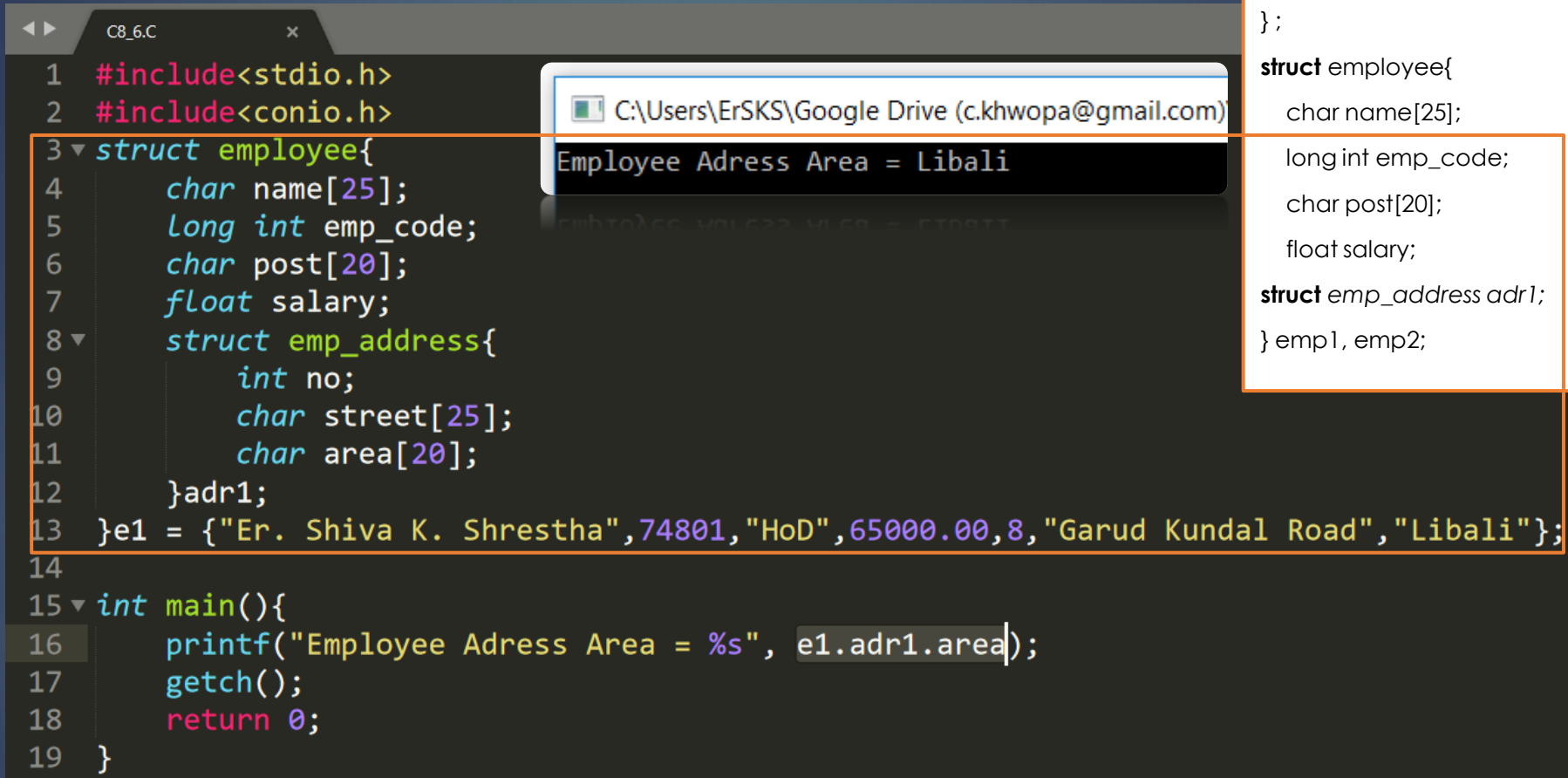
12

- ▶ The information contained in one structure may be assigned to another structure of the same type using a single assignment statement. That is, you do not need to assign the value of each member separately.



```
1  #include<stdio.h>
2  #include<conio.h>
3  struct{
4      int a;
5      int b;
6  }x, y;
7  int main(){
8      x.a = 10;
9      x.b = 20;
10     y = x; //Assign one structure to another
11     printf("%d ", y.a);
12     printf("%d", y.b);
13     getch();
14     return 0;
15 }
```

Nested Structure



The screenshot shows a C program in a code editor. The program defines a nested structure `employee` containing an array `name`, a long integer `emp_code`, a character array `post`, a float `salary`, and a nested structure `emp_address`. The `emp_address` structure contains an integer `no`, a character array `street`, and a character array `area`. A variable `e1` of type `employee` is initialized with specific values. The `main` function prints the value of `e1.adr1.area` using `printf`.

```
1 #include<stdio.h>
2 #include<conio.h>
3 struct employee{
4     char name[25];
5     long int emp_code;
6     char post[20];
7     float salary;
8     struct emp_address{
9         int no;
10        char street[25];
11        char area[20];
12    }adr1;
13 }e1 = {"Er. Shiva K. Shrestha",74801,"HoD",65000.00,8,"Garud Kundal Road","Libali"};
14
15 int main(){
16     printf("Employee Adress Area = %s", e1.adr1.area);
17     getch();
18     return 0;
19 }
```

The output of the program is displayed in a console window: `Employee Adress Area = Libali`.

Consolidated Structure Definition:

```
struct emp_address{
    int no;
    char street[25];
    char area[20];
};

struct employee{
    char name[25];
    long int emp_code;
    char post[20];
    float salary;
    struct emp_address adr1;
} emp1, emp2;
```

- ▶ Two structures left figure can be consolidated as shown in program above

Example#7: We can also tag names to define inner structures

```
struct date{  
    int month;  
    int day;  
    int year;  
};  
  
struct account{  
    int acc_no;  
    char acc_type;  
    char name[80];  
    float balance;  
    struct date last_payment;  
}customers;
```

It is also permissible to nest more than one type of structures.

```
    struct personal_record{  
        struct name_part n;  
        struct address_part a;  
        struct date_part dob;  
        .....  
    };  
    struct personal_record p;
```

If a structure member is itself a structure, then a member of the embedded structure can be accessed by writing variable.member.sub_member

e.g. **customers**.last_payment.month

```
struct Name{  
    char fName[20];  
    char mName[20];  
    char lName[20];  
};
```

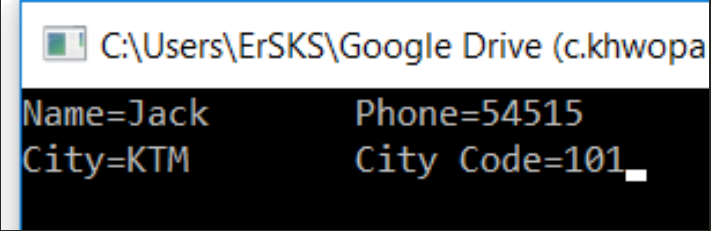
```
struct Address{  
    int ward;  
    char tole[20];  
    char munc[30];  
};
```

```
struct DOB{  
    int yyyy;  
    int mm;  
    int dd;  
};
```

```
struct Student{  
    struct Name n;  
    struct Address a;  
    struct DOB d;  
    .....  
};  
struct Student s1, s2;
```


Example#8: A sample to demonstrate nesting of structure

```
C8_8.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct address{
4      char phone[15];
5      char city[25];
6      int citycode;
7  };
8  struct emp{
9      char name[25];
10     struct address a;
11 };
12 int main(){
13     int i;
14     struct emp e={"Jack","54515","KTM",101};
15     printf("Name=%s\tPhone=%s",e.name,e.a.phone);
16     printf("\nCity=%s\tCity Code=%d",e.a.city,e.a.citycode);
17     getch();
18     return 0;
19 }
```



```
C:\Users\ErSKS\Google Drive (c.khwopa)
Name=Jack      Phone=54515
City=KTM       City Code=101
```



```
1  #include <stdio.h>
2  #include <conio.h>
3  struct add{
4      int door_no;
5      char street[20];
6      char place[30];
7  };
8  struct student{
9      char name[30];
10     int roll_no;
11     struct add address;
12 };
13 int main(){
14     struct student std;
15     printf("Enter Your Details:\n");
16     printf("Name\tRoll No.\n");
17     scanf("%s%d",std.name,&std.roll_no);
18     printf("Class Room No.\tStreet\tPlace\n");
19     scanf("%d%s%s",&std.address.door_no,std.address.street,std.address.place);
20     printf("\nYour details are ...\n");
21     printf("Name : %s",std.name);
22     printf("\nRoll No. is %d",std.roll_no);
23     printf("\nClass Room No. is %d",std.address.door_no);
24     printf("\nArea name is %s",std.address.place);
25     printf("\nStreet name is %s",std.address.street);
26     getch();
27     return 0;
28 }
```

Enter Your Details:

Name Roll No.

Niranjan 26

Class Room No. Street Place

306 Libali BakhunchheTole

Your details are ...

Name : Niranjan

Roll No. is 26

Class Room No. is 306

Area name is BakhunchheTole

Street name is Libali_

Array of Structures

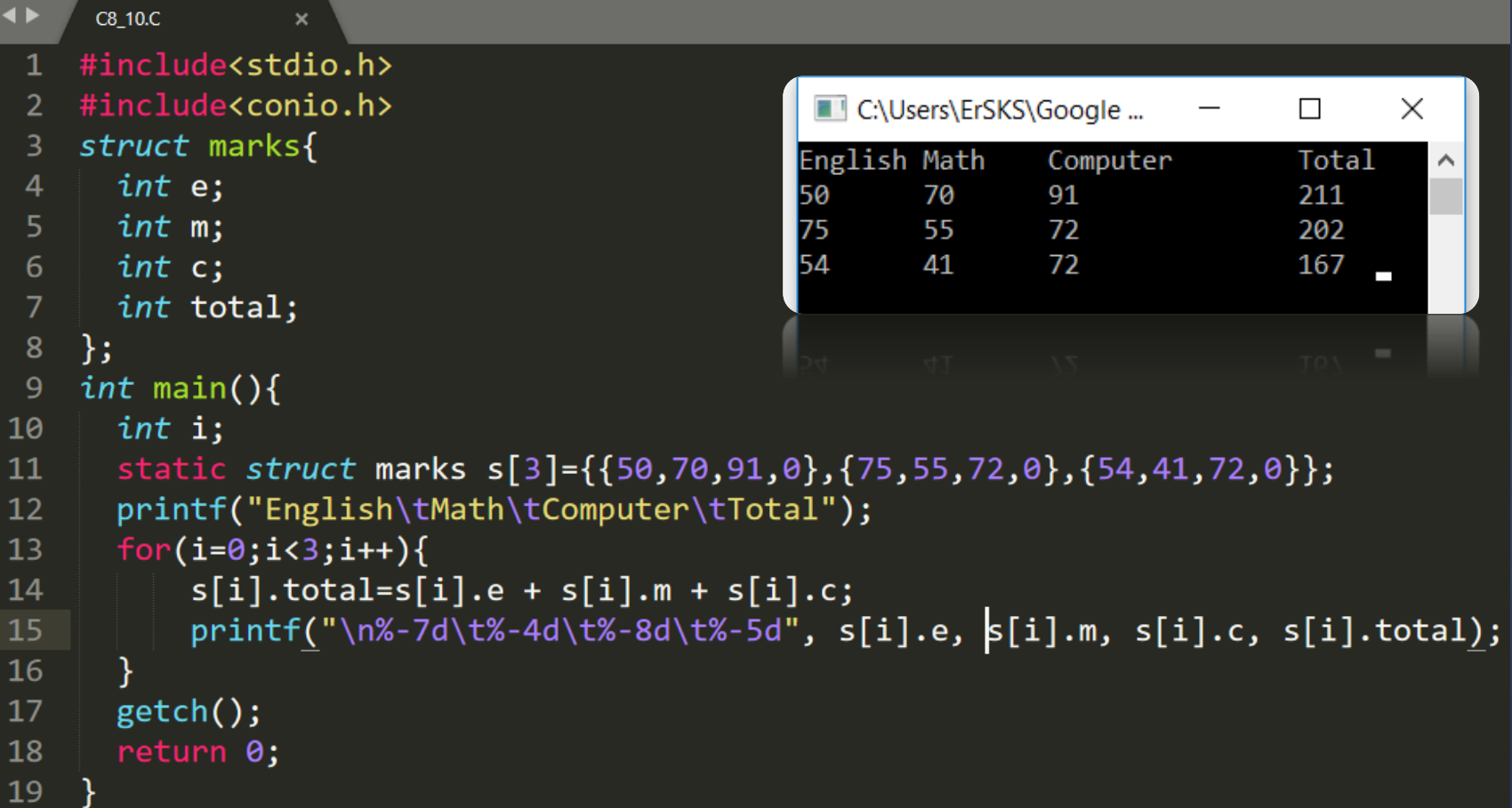
To declare a 100-element array of structures of type books:

```
struct book b[100];
```

To print the price of structure 3, write

```
printf("%f",b[2].price);
```

Er. Shiva K.
2019-01-29



The screenshot shows a C program in a code editor and its output in a separate window. The code defines a structure 'marks' with four integer fields: 'e', 'm', 'c', and 'total'. It then declares an array 's' of three 'marks' structures and initializes them with specific values. The program calculates the 'total' for each structure and prints the results in a formatted table.

```
1 #include<stdio.h>
2 #include<conio.h>
3 struct marks{
4     int e;
5     int m;
6     int c;
7     int total;
8 };
9 int main(){
10     int i;
11     static struct marks s[3]={{50,70,91,0},{75,55,72,0},{54,41,72,0}};
12     printf("English\tMath\tComputer\tTotal");
13     for(i=0;i<3;i++){
14         s[i].total=s[i].e + s[i].m + s[i].c;
15         printf("\n%-7d\t%-4d\t%-8d\t%-5d", s[i].e, s[i].m, s[i].c, s[i].total);
16     }
17     getch();
18     return 0;
19 }
```

The output window displays the following table:

English	Math	Computer	Total
50	70	91	211
75	55	72	202
54	41	72	167

Task

1. WAP to use nested structure to hold information of student's **name**, **address**, **roll_no** & **date of birth** within another structure. Ask user to enter information & display respective information.
2. WAP using nested structure to read info. of 3 students. Use concept of array of structure to hold their data. Display their info from main function.
3. WAP to read name, address, roll, year, month & day of 3 students using structure. And display that information using user-defined function.

Example# 11: Storing book information using structure

```

C8_11.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct book{
4      char name[20];
5      int price;
6      int pages;
7  }b[5];
8
9  int main(){
10     int i;
11     for(i=0;i<5;i++){
12         printf("%d. Enter Name, Price, and Pages: ",(i+1));
13         scanf("%s%d%d", &b[i].name, &b[i].price, &b[i].pages);
14     }
15     printf("\n%-15s\tPrice\tPages","Book Name");
16     for(i=0;i<5;i++){
17         printf("\n%-15s\t%d\t%d", b[i].name, b[i].price, b[i].pages);
18     }
19     getch();
20     return 0;
21 }

```

C:\Users\ErSKS\Google Drive (c.khwopa@gmail.com)\C_Codes\Ch8\C8_11.exe

```

1. Enter Name, Price, and Pages: C 650 650
2. Enter Name, Price, and Pages: Math-I 452 350
3. Enter Name, Price, and Pages: Drawing-I 263 300
4. Enter Name, Price, and Pages: Applied 485 600
5. Enter Name, Price, and Pages: BasicElectrical 378 450

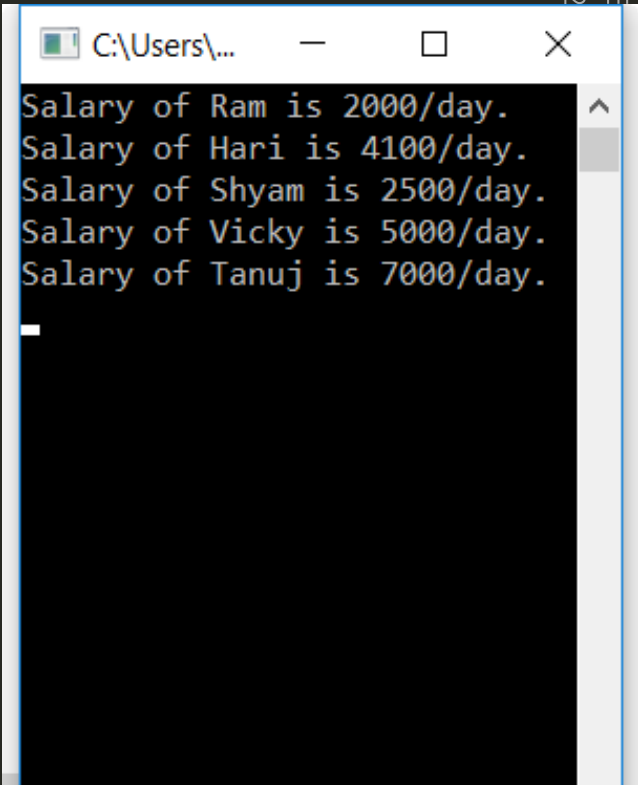
```

Book Name	Price	Pages
C	650	650
Math-I	452	350
Drawing-I	263	300
Applied	485	600
BasicElectrical	378	450

Initializing Array of Structure

21

```
C8_12.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct employee{
4      char name[20];
5      char code[5];
6      int salary;
7  } emp [5] = {
8      {"Ram", "E01", 2000},
9      {"Hari", "E02", 4100},
10     {"Shyam", "E03", 2500},
11     {"Vicky", "E04", 5000},
12     {"Tanuj", "E05", 7000},
13 };
14
15 int main(){
16     int i;
17     for(i=0;i<5;i++){
18         printf("Salary of %s is %d/day.\n", emp[i].name, emp[i].salary);
19     }
20     getch();
21     return 0;
22 }
```



C:\Users\...
Salary of Ram is 2000/day.
Salary of Hari is 4100/day.
Salary of Shyam is 2500/day.
Salary of Vicky is 5000/day.
Salary of Tanuj is 7000/day.

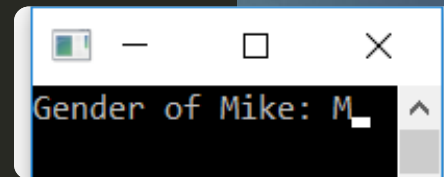
Function & Structure

- ▶ Passing structure members to a function
- ▶ Passing an entire structure to a function
- ▶ Passing structure pointer to a function

Passing structure members to a function

23

```
C8_13.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct{
4      char g;
5      int y;
6      float z;
7      char s[10];
8  }mike;
9  void func(char);
10
11 int main(){
12     mike.g='M';
13     func(mike.g);
14     getch();
15     return 0;
16 }
17
18 void func(char a){
19     printf("Gender of Mike: %c", a);
20 }
```

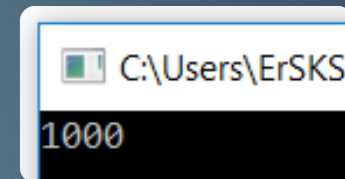


Gender of Mike: M

Passing an entire structure to a function

24

```
C8_14.C x
1  #include<stdio.h>
2  #include<conio.h>
3  struct test{
4      int a, b;
5      char ch;
6  };
7  void function(struct test);
8
9  int main(){
10     struct test arg;
11     arg.a=1000;
12     function(arg);
13     getch();
14     return 0;
15 }
16
17 void function(struct test param) {
18     printf("%d",param.a);
19 }
```



Task

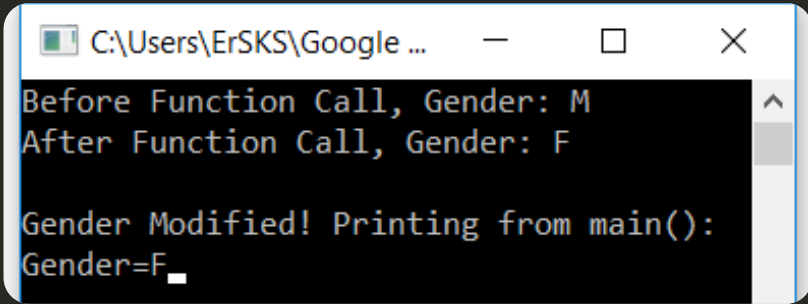
25

- ▶ WAP to set elements of “test” structure to 100, 1000, ‘A’ and display all members by passing structure to a function.

Passing structure pointer to a function

26

```
C8_15.C
1  #include<stdio.h>
2  #include<conio.h>
3  struct{
4      char g;
5      int y;
6  }bishnu;
7  void func(char *gen);
8
9  int main(){
10     bishnu.g='M';
11     printf("Before Function Call, Gender: %c\n",bishnu.g);
12     func(&bishnu.g);
13     printf("\nGender Modified! Printing from main():");
14     printf("\nGender=%c",bishnu.g);
15     getch();
16     return 0;
17 }
18
19 void func(char *gen){
20     *gen='F';
21     printf("After Function Call, Gender: %c\n", *gen);
22 }
```



Typedef Structure

- ▶ C language provides the opportunity to define new data_type equivalent to the existing system using the typedef statement. The declaration would be

```
typedef struct date{  
    int dd;  
    int mm;  
    int yyyy;  
}dob;  
dob d1;
```

- ▶ The above declaration variable `emp_date_of_birth` has now become the type of *structure date*.

```
1  #include<stdio.h>
2  #include<conio.h>
3  typedef struct{
4      char name[20];
5      int price, qty;
6  }stores;
7  stores update(stores product, int p, int q){
8      product.price+=p;
9      product.qty+=q;
10     return(product);
11 }
12 float total(stores stock){
13     return(stock.price*stock.qty);
14 }
15 int main( ){
16     float value;
17     static stores item={"Patanjali Facewash",250,12};
18     item=update(item,10,8);
19     printf("\nUpdated values of item:\n");
20     printf("Name:      %s\n",item.name);
21     printf("Price:      %d\n",item.price);
22     printf("Quantity: %d\n",item.qty);
23     value=total(item);
24     printf("\nTotal Amount after product increment & setting SP = %.2f\n",value);
25     getch(); return 0;
26 }
```

C:\Users\ErSKS\Google Drive (c.khwopa@gmail.com)\C_Slides\Ch8_Structure

Updated values of item:

Name: Patanjali Facewash

Price: 260

Quantity: 20

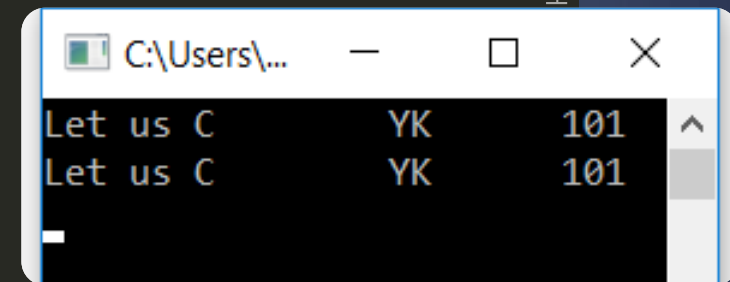
Total Amount after product increment & setting SP = 5200.00

Structure & Pointer

C language allows declaring pointer to structure just like pointer to other ordinary variables. The declaration can be done in the following manner:

```
struct employee{  
    char *name;  
    char *roll_no;  
    int salary;  
}*emp1;
```

```
1  #include<stdio.h>  
2  #include<conio.h>  
3  int main(){  
4      struct book{  
5          char name[25];  
6          char author[25];  
7          int call_no;  
8      };  
9      struct book b1={"Let us C","YK",101};  
10     struct book *ptr;  
11     ptr=&b1;  
12     printf("%s\t%s\t%d\n",b1.name,b1.author,b1.call_no);  
13     printf("%s\t%s\t%d\n",ptr->name, ptr->author, ptr->call_no);  
14     getch();  
15     return 0;  
16 }
```



```
C:\Users\...  
Let us C      YK      101  
Let us C      YK      101
```



```

1  #include<stdio.h>
2  int main(){
3      struct Student{
4          char name[25], crn[12], grade;
5          float average;
6      }s[50];
7      int i, n;
8      printf("Number of Student's grades to be computed?1");
9      scanf("%d", &n);
10     for(i=0; i<n; i++){
11         printf("\nStudent[%d]'s information:\n", i+1);
12         printf("Name: "); scanf("%s", s[i].name); fflush(stdin);
13         printf("CRN: "); scanf("%s", s[i].crn);
14         printf("Average Score: "); scanf("%f", &s[i].average);

15
16         if(s[i].average<30.0){ s[i].grade = 'D';}
17         else if(s[i].average<50.0){ s[i].grade = 'C';}
18         else if(s[i].average<70.0){ s[i].grade = 'B';}
19         else{ s[i].grade = 'A';}

20
21         printf("%s\t%s%8.2f\n", s[i].name, s[i].crn, s[i].average);
22     }
23     /*Displaying Student Records*/
24     printf("\n%-20s%-12s\t%-7s\t%-6s\n", "NAME", "REG_NUMBER", "AVERAGE", "GRADE");
25     for(i=0; i<n; i++){
26         printf("%-20s%-12s\t%-7.2f\t%c\n", s[i].name, s[i].crn, s[i].average, s[i].grade);
27     } return 0;
28 }

```

C:\Users\ErSKS\Google Drive (c.khwopa@gmail...)

Number of Student's grades to be computed?1

Student[1]'s information:
 Name: Niranjan
 CRN: KCE074BCT025
 Average Score: 88
 Niranjana KCE074BCT025A 88.00

NAME	REG_NUMBER	AVERAGE	GRADE
Niranjana	KCE074BCT025A	88.00	A

 Process exited after 31 seconds with return value 0
 Press any key to continue . . .

```

1  #include<stdio.h>
2  #include<conio.h>
3  int main(){
4      struct s_record{
5          char name[25], crn[12], grade;
6          float average;
7      }s[50], *ptr; /* ptr is a pointer of type structure s_record */
8
9      int i, n;
10     printf("Number of ss grades to be computed?");
11     scanf("%d", &n);
12     for(i=0; i<n; i++){
13         printf("\nStudent[%d]'s information:\n", i+1);
14         printf("Name: "); scanf("%s", s[i].name);
15         printf("CRN: "); scanf("%s", s[i].crn);
16         printf("Average Score: "); scanf("%f", &s[i].average);
17         printf("%s\t%s\t%.2f\n", s[i].name, s[i].crn, s[i].average);
18     }
19
20     ptr = s; /* pointer 'ptr' points to s[0] */
21     /* Assigning grades to 'n' ss*/
22     for(ptr = s; ptr<s+n; ptr++){
23         if(ptr->average<30.0){
24             ptr->grade = 'D';
25         }else if(ptr->average<50.0){
26             ptr->grade = 'C';
27         }else if(ptr->average<70.0){
28             ptr->grade = 'B';
29         }else{
30             ptr->grade = 'A';
31         }
32     }
33     /*Displaying Student Records*/
34     printf("\n%-20sREG_NUMBER \tAVERAGE\tGRADE\n", "NAME");
35     for(ptr=s; ptr<s+n; ptr++){
36         printf("%-20s%-12s\t", ptr->name, ptr->crn);
37         printf("%-7.2f\t%c\n", ptr->average, ptr->grade);
38     }
39     getch(); return 0;
40 }

```

```

C:\Users\ErSKS\Google Drive (c.khwopa@gm...
Number of students grades to be computed?3

Student[1]'s information:
Name: Niranjan
CRN: KCE074BCT025
Average Score: 88
Niranjan      KCE074BCT025    88.00

Student[2]'s information:
Name: Sushil
CRN: KCE074BCT048
Average Score: 86.92
Sushil KCE074BCT048    86.92

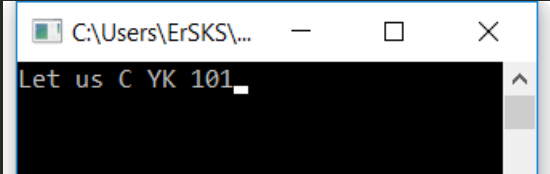
Student[3]'s information:
Name: Nabin
CRN: KCE074BCT023
Average Score: 80.62
Nabin KCE074BCT023    80.62

NAME                REG_NUMBER          AVERAGE GRADE
Niranjan            KCE074BCT025        88.00    A
Sushil              KCE074BCT048        86.92    A
Nabin               KCE074BCT023        80.62    A

```

Passing Structure to Function using Reference

```
C8_18.C x
1  #include<stdio.h>
2  #include<conio.h>
3  struct book{
4      char name[25];
5      char author[25];
6      int call_no;
7  };
8  void display(struct book *);
9
10 int main(){
11     struct book b1={"Let us C", "YK", 101};
12     display(&b1);
13     getch();
14     return 0;
15 }
16
17 void display(struct book *p){
18     printf("%s %s %d", p->name, p->author, p->call_no);
19 }
```



Function, Structure & Pointer

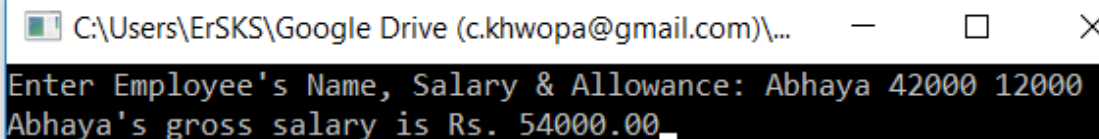
33

Er. Shiva K. Shrestha (HoD, Computer Department)
2019-01-29

```
File Edit Search Run Compile Debug Project Options Window Help
C8_20_~1.C 1=[+]
#include<stdio.h>
#include<conio.h>
void display(struct Nepal *b);
struct Nepal{
    char PM[30];
    char capitalCity[20];
    int states;
};
int main(){
    struct Nepal b={"KP Oli","Kathmandu",7};
    clrscr();
    display(&b);
    getch();
    return 0;
}
void display(struct Nepal *b){
    printf("\n%s %s %d",b->PM,b->capitalCity, b->states);
}
11:18
F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

```
DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Progra...
KP Oli Kathmandu 7
```

```
C8_19.c
1 #include<stdio.h>
2 #include<conio.h>
3 struct employee{
4     char name[20];
5     float salary, allowance;
6 }e;
7 /*ep is a pointer of type struct employee*/
8 float grossCalc(struct employee *ep){
9     /*adds up the employee's salary and allowance,
10     and returns the result as gross salary*/
11     return (ep->salary + ep->allowance);
12 }
13 int main(){
14     float gross;
15     printf("Enter Employee's Name, Salary & Allowance: ");
16     scanf("%s%f%f", e.name, &e.salary, &e.allowance);
17     fflush(stdin);
18     gross = grossCalc(&e);
19     printf("%s's gross salary is Rs. %.2f", e.name, gross);
20     getch(); return 0;
21 }
```



```
C:\Users\ErSKS\Google Drive (c.khwopa@gmail.com)\...
Enter Employee's Name, Salary & Allowance: Abhaya 42000 12000
Abhaya's gross salary is Rs. 54000.00
```

Q/A?

35

Thank You!

Er. Shiva K. Shrestha

computer.khwopa@gmail.com

Er. Shiva K. Shrestha (HoD, Computer Department)
2019-01-29