```c
/*In a bank there are n customers with attributes name, account_no, and balance. Write a program
to find out who has the highest balance in the bank.*/
#include <stdio.h>
#define N 100

struct Account
{
    int account_no;
    char name[20];
    float balance;
};

int main()
{
    struct Account customer[N];
    int n;

    // Input the number of customers
    printf("How many customers: ");
    scanf("%d", &n);

    // Input data for each customer
    for (int i = 0; i < n; i++)
    {
        printf("\nEnter data for customer %d:\n", i + 1);
        printf("Enter account no: ");
        scanf("%d", &customer[i].account_no);
        printf("Enter name: ");
        scanf(" %s", customer[i].name);
        printf("Enter balance: ");
        scanf("%f", &customer[i].balance);
    }

    // Find the customer with the highest balance
    float max_balance = customer[0].balance;
    int max_index = 0;

    for (int i = 1; i < n; i++)
    {
        if (customer[i].balance > max_balance)
        {
            max_balance = customer[i].balance;
            max_index = i;
        }
    }

    // Display information about the customer with the highest balance
    printf("\nCustomer with the highest balance:\n");
    printf("Account number: %d\n", customer[max_index].account_no);
    printf("Name: %s\n", customer[max_index].name);
    printf("Balance: %.2f\n", customer[max_index].balance);

    return 0;
}
```

$ cd "/home/manish/vs-code/bca-programming-repo/C/nestedStructure_and_Union/" && gcc quest
question1
How many customers: 4
Enter data for customer 1.
Enter account no: 1234
Enter name: Ram
Enter balance: 20000
Enter data for customer 2.
Enter account no: 21345
Enter name: Shyam
Enter balance: 40000
Enter data for customer 3.
Enter account no: 32154
Enter name: Sima
Enter balance: 65000
Enter data for customer 4.
Enter account no: 5412
Enter name: Grishma\
Enter balance: 100000

Customer having highest balance:
Account number: 5412
Name: Grishma\
Balance: 100000.00

$

```c
/*Program to read 5 students record with following fields and display the record
of BCA faculty only.
Roll No.    |    Name    |    Faculty    |      DOB(date of birth)      |
|           |            |               |         dd | mm | yy         |
*/
#include <stdio.h>
#include <string.h>
#define NUM 5

struct DOB
{
    int dd;
    int mm;
    int yy;
};

struct Student
{
    int roll_no;
    char name[20];
    char faculty[10];
    struct DOB date_of_birth;
};

int main()
{
    struct Student s[NUM];

    // Input data for each student
    for (int i = 0; i < NUM; i++)
    {
        printf("\nEnter data for student %d:\n", i + 1);
        printf("Enter roll number: ");
        scanf("%d", &s[i].roll_no);
        printf("Enter name: ");
        scanf(" %s", s[i].name);
        printf("Enter faculty: ");
        scanf(" %s", s[i].faculty);
        printf("Enter day: ");
        scanf("%d", &s[i].date_of_birth.dd);
        printf("Enter month: ");
        scanf("%d", &s[i].date_of_birth.mm);
        printf("Enter year: ");
        scanf("%d", &s[i].date_of_birth.yy);
        printf("\n");
    }

    // Display the records of students in the BCA faculty
    printf("Student records of BCA Faculty:\n");
    for (int i = 0; i < NUM; i++)
    {
        if (strcmp(s[i].faculty, "BCA") == 0)
        {
            printf("Roll no: %d\n", s[i].roll_no);
            printf("Name: %s\n", s[i].name);
            printf("Faculty: %s\n", s[i].faculty);
            printf("Date of birth: %d-%d-%d\n", s[i].date_of_birth.yy, s[i].date_of_birth.mm, s[i].date_of_birth.dd);
        }
    }

    return 0;
}
```

```
manish@fedora: ~/vs-code/bca-programming-repo/C/nestedStructure_and_Union main!
$ ./question2

Enter data for student 1:
Enter roll number: 13
Enter name: Manish
Enter faculty: BCA
Enter day: 8
Enter month: 6
Enter year: 2002


Enter data for student 2:
Enter roll number: 1
Enter name: Benjamin
Enter faculty: CSIT
Enter day: 8
Enter month: 8
Enter year: 2000


Enter data for student 3:
Enter roll number: 13
Enter name: Grishma
Enter faculty: CSIT
Enter day: 9
Enter month: 8
Enter year: 2003


Enter data for student 4:
Enter roll number: 14
Enter name: Milan
Enter faculty: Electrical
Enter day: 2
Enter month: 3
Enter year: 2000


Enter data for student 5:
Enter roll number: Bishal
Enter name: Enter faculty: CSIT
Enter day: 2
Enter month: 2
Enter year: 2002

Student records of BCA Faculty:
Roll no: 13
Name: Manish
Faculty: BCA
Date of birth: 2002-6-8
```

```c
// Program to demonstrate the use of pointer to structure.
#include <stdio.h>

// Define the structure for Book
struct Book
{
    char name[20];
    int pages;
    float price;
};

int main()
{
    // Declare an array of Book structures and a pointer to Book
    struct Book b[2], *ptr = b;

    // Input details for each book
    for (int i = 0; i < 2; i++)
    {
        printf("Enter name: ");
        scanf("%s", (ptr + i)->name);

        printf("Enter number of pages: ");
        scanf("%d", &(ptr + i)->pages);

        printf("Enter price: ");
        scanf("%f", &(ptr + i)->price);

        printf("\n");
    }

    // Display Book details
    printf("\nBook Details:\n");
    for (int i = 0; i < 2; i++)
    {
        printf("Name: %s\nTotal Pages: %d\nPrice: %.2f\n", (ptr + i)->name, (ptr + i)->pages, (ptr + i)->price);
        printf("\n");
    }

    return 0;
}
```

```
manish@fedora: ~/vs-code/bca-programming-repo/C/nestedStructure_and_Union main!
$ ./question3
Enter name: Think Like a Monk
Enter number of pages: 550
Enter price: 750.54

Enter name: The Monk Who Sold His Ferrahari
Enter number of pages: 320
Enter price: 340


Book Details:
Name: Think Like a Monk
Total Pages: 550
Price: 750.54

Name: The Monk Who Sold His Ferrahari
Total Pages: 320
Price: 340.00
```

```c
/*Write a menu driven program which performs the following jobs:
* Create a structure named student with member variables: roll, name, grade, gender, age.
* Define ten structure variables of type student and using loop take input for all ten
structure variables.
* Display names of all male students.
* Exit.
*/
#include <stdio.h>
#include <stdlib.h>

#define N 4

// Define the structure for Student
struct Student
{
    int roll;
    char name[20];
    int grade;
    char gender;
    int age;
};

int main()
{
    struct Student s[N];
    char option, choice = 'y';

    while (choice != 'n')
    {
        // Display menu options
        printf("\nMenu Driven Program\n");
        printf("1. Enter student information\n");
        printf("2. Display names of all male students\n");
        printf("3. Exit\n");
        printf("Enter your option: ");
        scanf(" %c", &option);

        switch (option)
        {
        case '1':
            printf("Enter information for %d students\n", N);
            for (int i = 0; i < N; i++)
            {
                printf("\nInformation for student %d:\n", i + 1);
                printf("Roll: ");
                scanf("%d", &s[i].roll);
                printf("Name: ");
                scanf("%s", s[i].name);
                printf("Grade: ");
                scanf("%d", &s[i].grade);
                printf("Gender (M/F): ");
                scanf(" %c", &s[i].gender);
                printf("Age: ");
                scanf("%d", &s[i].age);
            }
            break;

        case '2':
            printf("\nNames of all male students:\n");
            for (int i = 0; i < N; i++)
            {
                if (s[i].gender == 'M')
                {
                    printf("%s\n", s[i].name);
                }
            }
            break;

        case '3':
            exit(0);

        default:
            printf("Invalid Option!\n");
        }

        // Ask user if they want to continue
        printf("Do you want to continue? (y/n): ");
        scanf(" %c", &choice);
    }

    return 0;
}
```

```
manish@fedora: ~/vs-code/bca-programming-repo/C/nestedStructure_and_Union main!
$ ./question4

Menu Driven Program
1. Enter student information
2. Display names of all male students
3. Exit
Enter your option: 1
Enter information for 4 students

Information for student 1:
Roll: 1
Name: Benjamin
Grade: 13
Gender (M/F): M
Age: 22

Information for student 2:
Roll: 2
Name: Grishma
Grade: 14
Gender (M/F): F
Age: 22

Information for student 3:
Roll: 3
Name: Milan
Grade: 16
Gender (M/F): M
Age: 23

Information for student 4:
Roll: 4
Name: Bibechana
Grade: 4
Gender (M/F): F
Age: 10
Do you want to continue? (y/n): y

Menu Driven Program
1. Enter student information
2. Display names of all male students
3. Exit
Enter your option: 2

Names of all male students:
Benjamin
Milan
Do you want to continue? (y/n): y

Menu Driven Program
1. Enter student information
2. Display names of all male students
3. Exit
Enter your option: 3
```

```c
// Program to demonstrate the use of union.
#include <stdio.h>

// Define a union named Student
union Student
{
    char name[20];
    int roll_no;
    float marks;
};

int main()
{
    // Declare a variable of type Student
    union Student s;

    // Input and display name
    printf("Enter the name: ");
    scanf("%[^\n]s", s.name);
    printf("Name: %s\n", s.name);

    // Input and display roll number
    printf("Enter roll no: ");
    scanf("%d", &s.roll_no);
    printf("Roll no: %d\n", s.roll_no);

    // Input and display marks
    printf("Enter marks: ");
    scanf("%f", &s.marks);
    printf("Marks: %.2f\n", s.marks);

    return 0;
}
```

```
manish@fedora: ~/vs-code/bca-programming-repo/C/nestedStructure_and_Union main!
$ ./question5
Enter the name: Manish
Name: Manish
Enter roll no: 13
Roll no: 13
Enter marks: 99.99
Marks: 99.99

manish@fedora: ~/vs-code/bca-programming-repo/C/nestedStructure_and_Union main!
$ 
```