PPS PROJECT

NAME: SHRESTHA ROY   DATE: 17/06/2022

REG NO: RA2111003010234

TEAM MEMBERS:

1. SIVANI ANBUSELVAN - RA2111003010235
2. DR GUNA SHRESHT - RA2111003010231

_____

Objective:

    To write a C program to find eligible blood donors from a given list of volunteers.
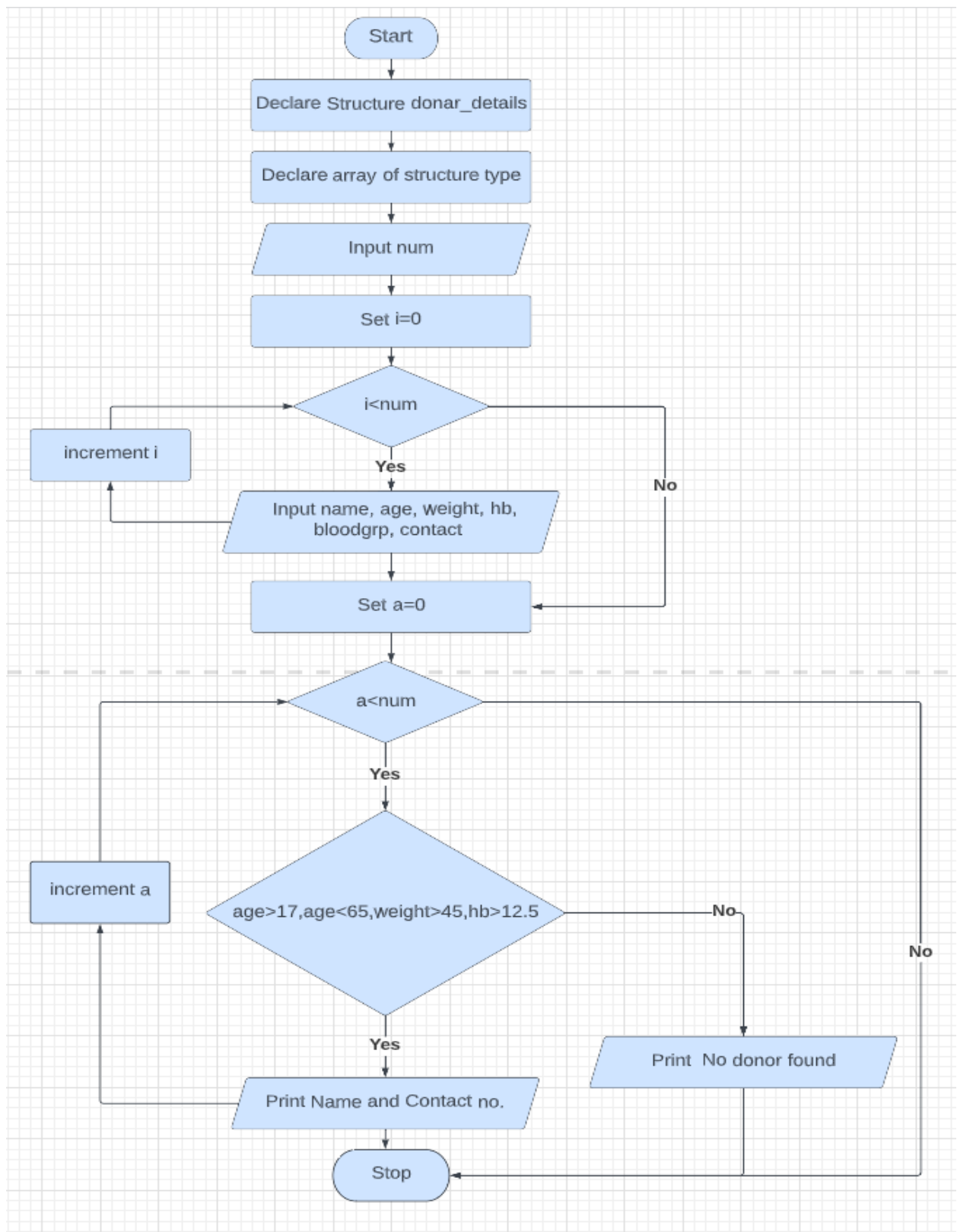

Problem definition:

    Several members have volunteered to donate blood during a blood donation camp. A volunteer is considered as an eligible blood donor only if his/hers medical details satisfy the following criteria:

(i)   Donor should be in the age group of 18 to 65 years.

(ii)   The Donor Should not be less than 45 Kilograms.

(iii)   Hemoglobin should not be less than 12.5 grams.

Record the medical details of the volunteers collected during the medical checkup and display the list of available blood donors of the blood group entered by the user.

Flowchart:

Start

Declare Structure donar_details

Declare array of structure type

Input num

Set i=0

i<num

increment i

Yes

No

Input name, age, weight, hb, bloodgrp, contact

Set a=0

a<num

Yes

No

increment a

age>17,age<65,weight>45,hb>12.5

No

No

Yes

Print No donor found

Print Name and Contact no.

Stop

Algorithm:

Step 1: Start

Step 2: Declare structure donor_details

Step 3: Declare array 'arr' of type structure

Step 4: Declare two integers num, i

Step 5: for(i=0;i<num;i++) , take input of name, age, weight, blood group, hemoglobin, number of times blood donated and contact number for fields of structure.

Step 6: Declare variable 'a'

Step 7: Take user input of desired blood group

Step 8: for(a=0;a<num;a++), if (arr[a].age>17 && arr[a].age<65 && arr[a].weight>45 && arr[a].hb>12.5) , print name and contact number of the person

Step 9: Stop

Program:

//Program to find eligible blood donors out of given volunteers.

#include <stdio.h>

#include <string.h>

typedef struct donor_details{

```c
    int id;

    char name[30];

    int age;

    int weight;

    float hb;

    char bloodgrp[3];

    int numtimes;

    char contact[10];
}DONOR;

int main() {
    DONOR arr[50];

    int num,i;

    printf("Enter number of Volunteers: ");

    scanf("%d",&num);


    for(i=0;i<num;i++)

    {

        printf("Enter details of Volunteer %d: \n",i+1);

        printf("Name: ");

        scanf("%s",arr[i].name);

        printf("Age: ");

        scanf("%d",&arr[i].age);

        printf("Weight: ");

        scanf("%d",&arr[i].weight);

        printf("Hemoglobin: ");
```

```c
        scanf("%f",&arr[i].hb);

        printf("Blood Group: ");

        scanf("%s",arr[i].bloodgrp);

        printf("Contact no.: ");

        scanf("%s",arr[i].contact);

        }
    printf("Details of all volunteers have been entered.\n\n\n");


    char bg[3];

    int a,count=0;

    printf("Enter Blood Group you are searching for: ");

    scanf("%s",bg);

    for(a=0;a<num;a++){

        if( strcmp(arr[a].bloodgrp,bg)==0 && arr[a].age>17 && arr[a].age<65 &&
arr[a].weight>45 && arr[a].hb>12.5){

            printf( "%s - Contact no.: %s\n",arr[a].name,arr[a].contact);

            count++;

            }
}

    printf("We have %d people with the blood group you are searching
for",count);

return 0;

        }
```

Program screenshots:

```
1   //Program to find eligible blood donors out of given volunteers.
2   #include <stdio.h>
3   #include <string.h>
4
5   typedef struct donor_details{
6       int id;
7       char name[30];
8       int age;
9       int weight;
10      float hb;
11      char bloodgrp[3];
12      int numtimes;
13      char contact[10];
14  }DONOR;
15
```

```
15
16  int main() {
17      DONOR arr[50];
18      int num,i;
19      printf("Enter number of Volunteers: ");
20      scanf("%d",&num);
21
22      for(i=0;i<num;i++)
23      {
24          printf("Enter details of Volunteer %d: \n",i+1);
25          printf("Name: ");
26          scanf("%s",arr[i].name);
27          printf("Age: ");
28          scanf("%d",&arr[i].age);
29          printf("Weight: ");
30          scanf("%d",&arr[i].weight);
31          printf("Hemoglobin: ");
32          scanf("%f",&arr[i].hb);
33          printf("Blood Group: ");
34          scanf("%s",arr[i].bloodgrp);
35          printf("Contact no.: ");
36          scanf("%s",arr[i].contact);
37      }
38      printf("Details of all volunteers have been entered.\n\n\n");
39
```

```
39
40      char bg[3];
41      int a,count=0;
42      printf("Enter Blood Group you are searching for: ");
43      scanf("%s",bg);
44      for(a=0;a<num;a++){
45          if( strcmp(arr[a].bloodgrp,bg)==0 && arr[a].age>17 && arr[a].age<65 &&
                arr[a].weight>45 && arr[a].hb>12.5){
46              printf( "%s - Contact no.: %s\n",arr[a].name,arr[a].contact);
47              count++;
48              }
49          }
50      printf("We have %d people with the blood group you are searching for",count);
51  return 0;
52  }
```

Output:

```
Enter number of Volunteers: 5
Enter details of Volunteer 1:
Name: Safa
Age: 17
Weight: 45
Hemoglobin: 13
Blood Group: O+
Contact no.: 9897654562
Enter details of Volunteer 2:
Name: Varun
Age: 45
Weight: 56
Hemoglobin: 12.9
Blood Group: AB-
Contact no.: 9897656786
Enter details of Volunteer 3:
Name: Jessi
Age: 27
Weight: 48
Hemoglobin: 12.9
Blood Group: AB-
Contact no.: 9856434567
```

```
Enter details of Volunteer 4:
Name: Roy
Age: 48
Weight: 58
Hemoglobin: 12.3
Blood Group: AB-
Contact no.: 9896745678
Enter details of Volunteer 5:
Name: Sana
Age: 27
Weight: 49
Hemoglobin: 12.7
Blood Group: AB-
Contact no.: 9896523456
Details of all volunteers have been entered.


Enter Blood Group you are searching for: AB-
Varun - Contact no.: 9897656786
Jessi - Contact no.: 9856434567
Sana - Contact no.: 9896523456
We have 3 people with the blood group you are searching for
```