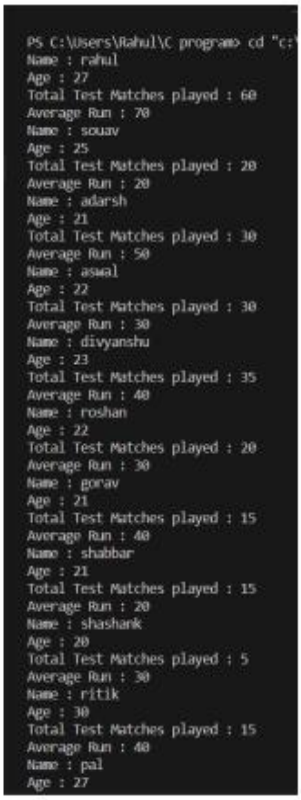
EXPERIMENT NO. 6

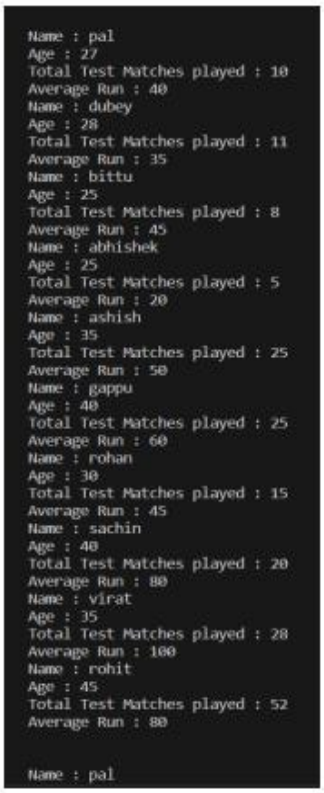
Ques 1 :- A record contain the name of a cricketer, his age, the number of test matches he has played , and the average runs he scored in each test match. Create an array of structures to hold records of 20 such cricketers and then write a program to read these record and arrange them in ascending order by runs. Use the qsort standard library function.

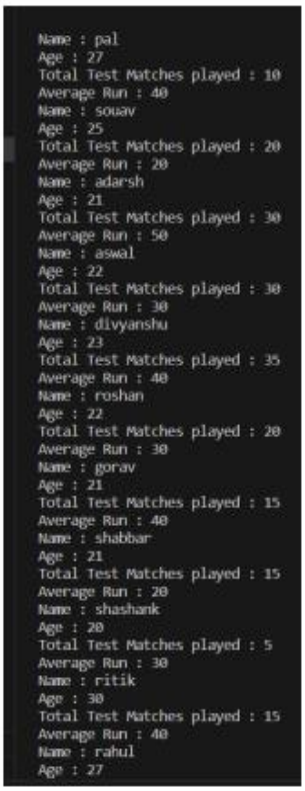
```
#include<stdio.h>
#include<stdlib.h>
#define Max 20
struct cricketers{
int avgrun;
char name[30];
int age;
int testmatch;
};
int compare(const void * a, const void * b){
 const struct cricketers *x = a;
 const struct cricketers *y = b;
 return x->avgrun > y->avgrun;
}
int main(){
struct cricketers ar[Max];
```

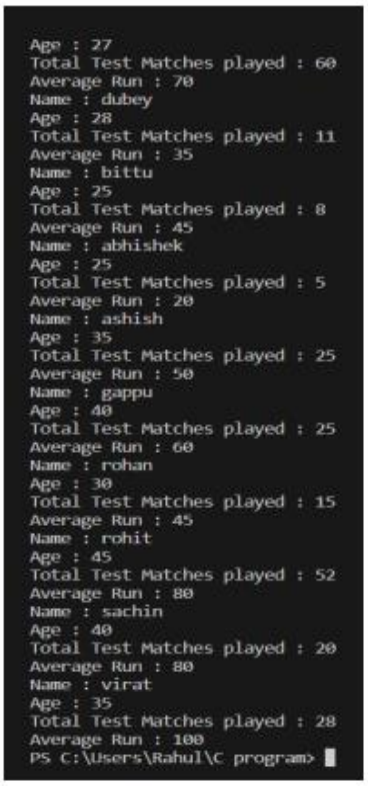
```
for (int i = 0; i < Max; i++){
printf("Name : \n");
scanf("%s",&ar[i].name);
printf("Age : \n");
scanf("%d ",&ar[i].age);
printf("Total Test Matches played : \n");
scanf("%d ",&ar[i].testmatch);
printf("Average Run : \n");
scanf("%d ",&ar[i].avgrun);
}
qsort(ar, Max, sizeof(struct cricketers), compare);
printf("\n");
for (int i = 0; i < Max; i++){
printf("\nName : %s", ar[i].name);
printf("\nAge : %d", ar[i].age);
printf("\nTotal Test Matches played : %d", ar[i].testmatch);
printf("\nAverage Run : %d", ar[i].avgrun);
}
return 0;
}
```

Output of the Program :-









Ques 2 :- Create a structure to specify data of customers in a bank. The data to be stored is Account Number, Name and Balance in the account. Assume a maximum of 200 customers in the bank.

1. **– Write a function to print the account number and name of each customer with a balance below Rs.100.**
2. **– If a customer requests for withdrawal or deposit, the form contains the field :- Account No. , code(1 for deposit and 0 for withdrawal). Write a program to give a message “The balance is insufficient for the specified withdrawal” , if on withdrawal the balance falls below Rs 100.**

```
#include<stdio.h>

struct account
```

```
{
   int account_no;
   char name[20];
   int balance;
};
struct account b[3];
int check(struct account b[],int n)
{
    int i;
    printf("\nCustomer Details whose Balance less than 100 Rs. \n");
    for(i=0;i<n;i++)
    {
        if(b[i].balance<100)
        {
          printf("Account Number : %d\n",b[i].account_no);
          printf("Name          : %s\n",b[i].name);
          printf("Balance       : %d\n",b[i].balance);
          printf("-----------------------------\n");

        }
    }
}
```

```
int main()
{
    int i;
    for(i=0;i<3;i++)
    {
        printf("Enter Details of Customer %d\n",i+1);
        printf("----------------------------\n");
        printf("Enter Account Number : ");
        scanf("%d",&b[i].account_no);
        printf("Enter Name         : ");
        scanf("%s",b[i].name);
        printf("Enter Balance      : ");
        scanf("%d",&b[i].balance);
        printf("----------------------------\n");
    }
    check(b,3);
    return 0;
}
```

Output of the Program :-

```
Enter Details of Customer 1
-----------------------------
Enter Account Number : 1234
Enter Name           : Shivam
Enter Balance        : 45
-----------------------------
Enter Details of Customer 2
-----------------------------
Enter Account Number : 1235
Enter Name           : Sagar
Enter Balance        : 4500
-----------------------------
Enter Details of Customer 3
-----------------------------
Enter Account Number : 1236
Enter Name           : Naman
Enter Balance        : 23
-----------------------------

Customer Details whose Balance less than 100 Rs.
Account Number : 1234
Name           : Shivam
Balance        : 45
-----------------------------
Account Number : 1236
Name           : Naman
Balance        : 23
-----------------------------
PS E:\Data Structure and Algorithm In C\Experiment 6>
```

```
#include<stdio.h>
#include<conio.h>
struct acc_holder{
int acc_num;
char name[30];
int bal;
}sbi[200] = { 1, "Siraj", 1000000,
2, "Azad", 1233044,
```

```
3, "Deepak", 99,
4, "Rihan", 33,
5, "Rahul Khowal", 200000
};
void below100()
{
int i;
for (i = 0; i < 200; i++)
{
if (sbi[i].bal < 100 && sbi[i].bal > 0)
{
printf("\nName : %s", sbi[i].name);
printf("\nAccount Number : %d\n\n", sbi[i].acc_num);
}
}
}
void action(int accnum, int amount, int code)
{
int i;
for (i = 0; i < 200; i++)
if (sbi[i].acc_num == accnum)
break;
```

```
if (!code)
{
if (sbi[i].bal - amount < 100)
{
printf("\nThe balance is insufficient for the specified withdrawal");
return;
}
else
{
sbi[i].bal -= amount;
printf("\nYour new account balance is : %d", sbi[i].bal);
}
}
else
{
sbi[i].bal += amount;
printf("\nYour new account balance is : %d", sbi[i].bal);
}
}
int main()
{
int accnum, amount, code;
```

```
printf("\nEnter your account number : ");
scanf("%d", &accnum);
printf("Enter 1 for deposit and 0 for withdrawal : ");
scanf("%d", &code);
if (code)
{
printf("\nEnter amount to be deposit : ");
scanf("%d", &amount);
}
else
{
printf("\nEnter amount to withdraw : ");
scanf("%d", &amount);
}
action(accnum, amount, code);
printf("\nAll members with account balance less than 100 are following : ");
below100();
return 0;
}
```

Output of the Program :-

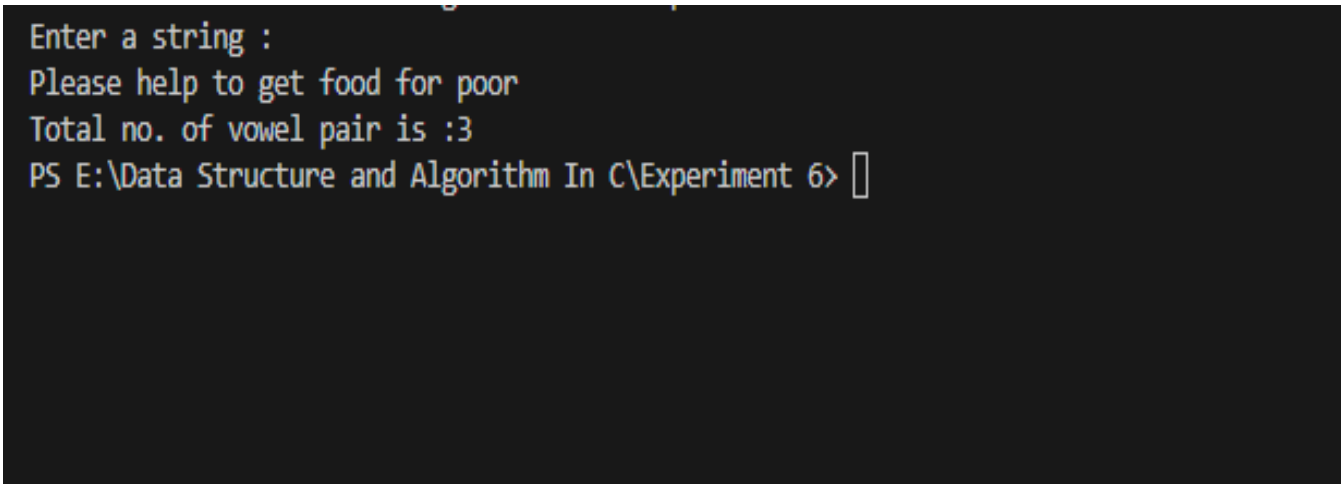
```
PS C:\Users\Rahul\C program> cd "c:\Users\Rahul\C program\" ;

Enter your account number : 5
Enter 1 for deposit and 0 for withdrawal : 0

Enter amount to withdraw : 10000

Your new account balance is : 190000
All members with account balance less than 100 are following :
Name : Deepak
Account Number : 3


Name : Rihan
Account Number : 4

PS C:\Users\Rahul\C program>
```

Ques 3 :- Write a program to count the number of occurrence any two vowels in succession in a line of text. For example in the following sentence “Please read this application and give me gratuity”. Such occurrences ea, ea and ui?

```
#include<stdio.h>
int main()
{
   int i=0,count=0;
   char s[50];
   printf("Enter a string :\n");
   gets(s);
   while(s[i]!='\0')
```

```
    {
        if(s[i]=='a'|| s[i]=='e' || s[i]=='i' || s[i]=='o' || s[i]=='u')
        {
            if(s[i+1]=='a'|| s[i+1]=='e' || s[i+1]=='i' || s[i+1]=='o' ||
s[i+1]=='u')
            count++;
        }
        i++;
    }
    printf("Total no. of vowel pair is :%d",count);
    return 0;
}
```

Output of the Program :-



Ques 4 :- Write a program to receive an integer and print out the number in words. For example if the number is 5678, It should print five thousand six hundered seventy eight.

```
#include <stdio.h>

// Function to print words for numbers 1 to 9
void printOneToNine(int num) {
   switch (num) {
      case 1: printf("One ");
      break;
      case 2: printf("Two ");
      break;
      case 3: printf("Three ");
      break;
      case 4: printf("Four ");
      break;
      case 5: printf("Five ");
      break;
      case 6: printf("Six ");
      break;
      case 7: printf("Seven ");
      break;
      case 8: printf("Eight ");
      break;
      case 9: printf("Nine ");
```

```
        break;
    }
}

// Function to print words for numbers 10 to 19
void printTenToNineteen(int num) {
    switch (num) {
        case 10: printf("Ten ");
        break;
        case 11: printf("Eleven ");
        break;
        case 12: printf("Twelve ");
        break;
        case 13: printf("Thirteen ");
        break;
        case 14: printf("Fourteen ");
        break;
        case 15: printf("Fifteen ");
        break;
        case 16: printf("Sixteen ");
        break;
        case 17: printf("Seventeen ");
```

```
        break;
        case 18: printf("Eighteen ");
        break;
        case 19: printf("Nineteen ");
        break;
    }
}

// Function to print words for multiples of 10 (20, 30, etc.)
void printTens(int num) {
    switch (num) {
        case 2: printf("Twenty ");
        break;
        case 3: printf("Thirty ");
        break;
        case 4: printf("Forty ");
        break;
        case 5: printf("Fifty ");
        break;
        case 6: printf("Sixty ");
        break;
        case 7: printf("Seventy ");
```

```
        break;
        case 8: printf("Eighty ");
        break;
        case 9: printf("Ninety ");
        break;
    }
}

// Function to convert a number into words
void numberToWords(int num) {
    if (num >= 1000) {
        printOneToNine(num / 1000);
        printf("Thousand ");
        num %= 1000;
    }

    if (num >= 100) {
        printOneToNine(num / 100);
        printf("Hundred ");
        num %= 100;
    }
```

```
    if (num >= 20) {
        printTens(num / 10);
        num %= 10;
    }

    if (num >= 10) {
        printTenToNineteen(num);
    } else if (num > 0) {
        printOneToNine(num);
    }
}

int main() {
    int num;
    printf("Enter an integer: ");
    scanf("%d", &num);

    printf("In words: ");
    numberToWords(num);

    return 0;
}
```

Output of the Program :-