“SESSION – 6”

Q] ***WACP that can maintain the name, roll, number and marks of a class of students. The size of the class is variable. Include function to compute the average marks of the class :-***

ALGORITHM

STEP 1: *Start*

STEP 2: *Initialize char name and integer value of roll and take marks in float datatype.*

STEP 3: *Declare a function of float datatype named average and take struct class *s and integer values of n.*

STEP 4: *Calculate the average of the marks obtained by the students.*

STEP 5: *Call the function.*

STEP 6: *Take integer values of n, i and Take float value of avg and declare struct class s.*

STEP 7: *Else print The Statement Enter the number of the student in a class and fflush(stdin)*

STEP 8: *Run a For Loop (i=0;i<=n;i++)*

STEP 9: *Print The Name of the respective student , their roll number as well as the marks allotted to that student.*

STEP 10: *Display the message in the print statement Student Name , Roll- Number and Marks Obtain.*

STEP 11: *Again Run a For Loop (i=0;i<n;i++).*

STEP 12: *Print the following i+1, s[i].name ,s[i].roll, s[i].marks.*

STEP 13: *Call the Average Function and stored average in a variable named avg=average(s ,n).*

STEP 14: *Print the statement "The average marks of the Class is"*

STEP 15: *Stop*

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student2.c

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```c
#include<stdio.h>
struct class
{
    char name[25];
    int roll;
    float marks;
};
float average(struct class *s,int n)
{
    int i,x=0;
    float avg;
   for(i=0;i<n;i++)
   {
     x=s[i].marks+x;
   }
   avg=(x/n);
    return avg;
}

int main()
{
    int n,i;
    float avg;
    struct class s[5];
    printf("Enter the number of the student in a class:");
    scanf("%d",&n);
    fflush(stdin);
    printf("\n");
    for(i=0;i<n;i++)
{

    printf("Enter %dth student name:",i+1);
    gets(s[i].name);
    fflush(stdin);
    printf("Enter the %dth student roll:",i+1);
    scanf("%d",&s[i].roll);
    fflush(stdin);
    printf("Enter %dth student  marks:",i+1);
    scanf("%f",&s[i].marks);
    fflush(stdin);
    printf("\n");
}
printf("Student name   \t Roll-number     Marks obtain\n");

for(i=0;i<n;i++)
{
  printf("%d. %s \t %d \t\t %f\n",i+1,s[i].name,s[i].roll,s[i].marks);
}

avg=average(s,n);
printf("\nThe average marks of the class is: %0.3f",avg);
return 0;
}
```

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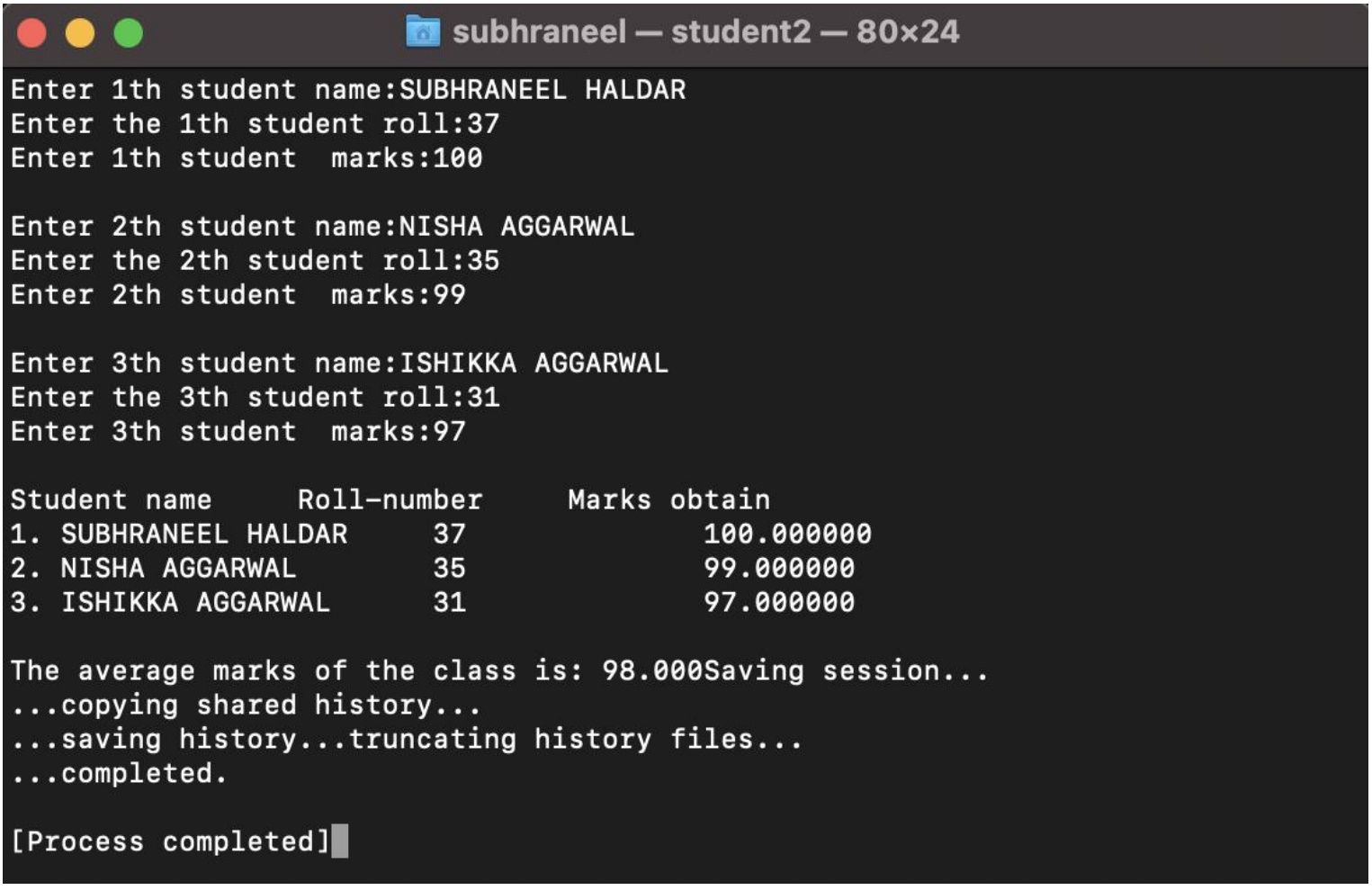
OUTPUT


subhraneel — student2 — 80×24
Enter 1th student name:SUBHRANEEL HALDAR
Enter the 1th student roll:37
Enter 1th student marks:100
Enter 2th student name:NISHA AGGARWAL
Enter the 2th student roll:35
Enter 2th student marks:99
Enter 3th student name:ISHIKKA AGGARWAL
Enter the 3th student roll:31
Enter 3th student marks:97
Student name Roll-number Marks obtain
1. SUBHRANEEL HALDAR 37 100.000000
2. NISHA AGGARWAL 35 99.000000
3. ISHIKKA AGGARWAL 31 97.000000
The average marks of the class is: 98.000Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.
[Process completed]

Q] WACP to add two complex numbers by passing structure to a function.

ALGORITHM

STEP 1: *Start*
STEP 2: *Take Struct datatype ie typedef struct complex*
STEP 3: *Take Float values of real and img.*
STEP 4: *Decleare a fuction complex add and take complex n1 and complex n2.*
STEP 5: *Inside the main function decleare complex n1,n2 and result variable.*
STEP 6: *Print the statements " For 1st ComplexNumber"*
STEP 7: *Again Print the statement "Enter The real and Imaginary parts".*
STEP 8: *Then Print the 2nd Complex Number.*
STEP 9: *Then add n1 and n2 and store it in a variable named result.*
STEP 10: *Print result.real and result.imag.*
STEP 11: *Call the Function ie complex add.*
STEP 12: *Take complex temp and store the addition of n1.real and n2.real in temp.real .*
STEP 13: *And Store the addition of n2.imag and n2.imag is temp.imag variable.*
STEP 14: *Return temp.*
STEP 15: *Stop.*

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C complex.c

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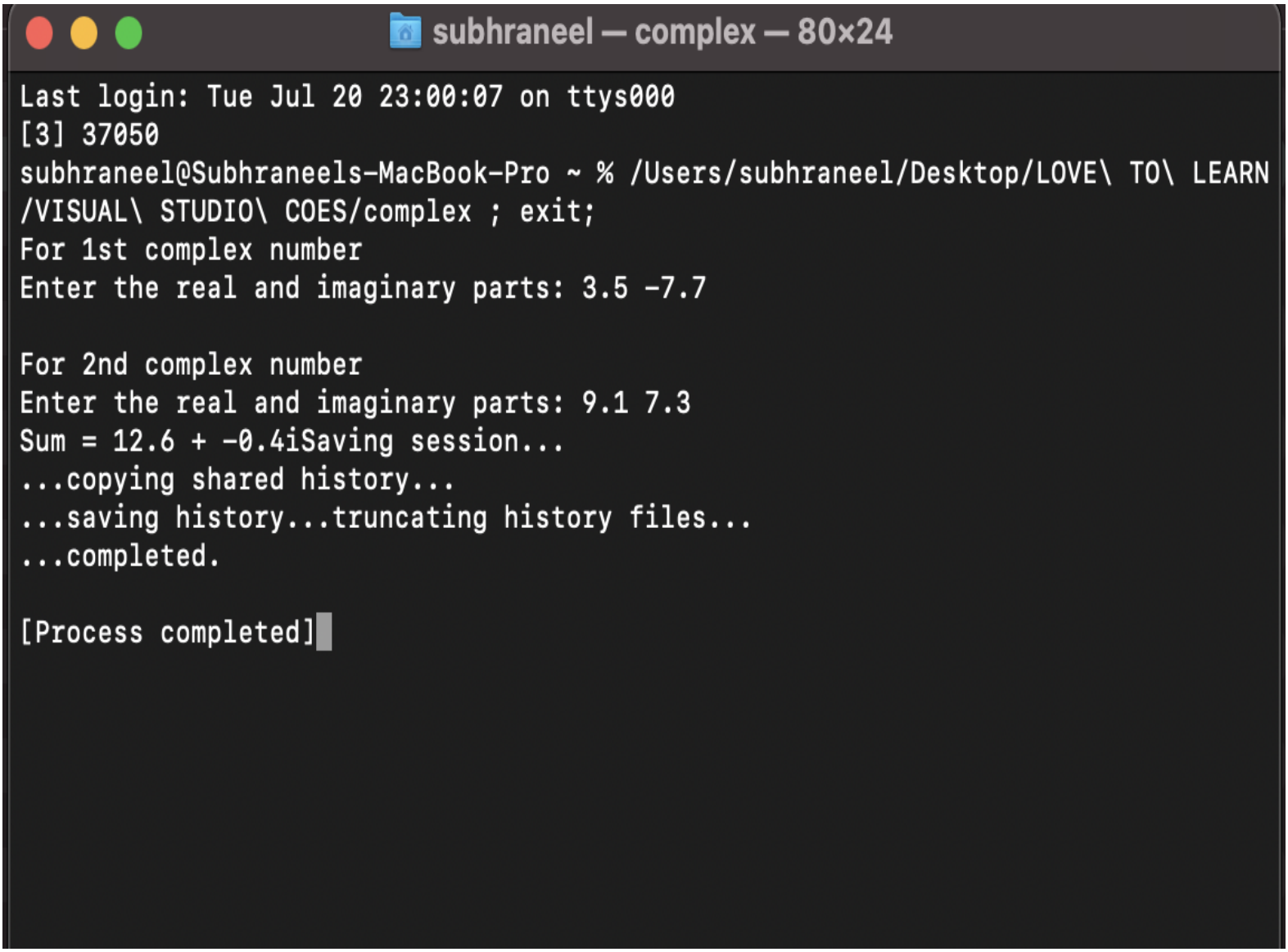
```c
#include <stdio.h>

typedef struct complex
{
    float real;
    float imag;
} complex;

complex add(complex n1, complex n2);

int main()
{
    complex n1, n2, result;

    printf("For 1st complex number \n");
    printf("Enter the real and imaginary parts: ");
    scanf("%f %f", &n1.real, &n1.imag);
    printf("\nFor 2nd complex number \n");
    printf("Enter the real and imaginary parts: ");
    scanf("%f %f", &n2.real, &n2.imag);

    result = add(n1, n2);

    printf("Sum = %.1f + %.1fi", result.real, result.imag);
    return 0;
}

complex add(complex n1, complex n2)
{
    complex temp;
    temp.real = n1.real + n2.real;
    temp.imag = n1.imag + n2.imag;
    return (temp);
}
```

OUTPUT


subhraneel — complex — 80×24
Last login: Tue Jul 20 23:00:07 on ttys000
[3] 37050
subhraneel@Subhraneels-MacBook-Pro ~ % /Users/subhraneel/Desktop/LOVE\ TO\ LEARN
/VISUAL\ STUDIO\ COES/complex ; exit;
For 1st complex number
Enter the real and imaginary parts: 3.5 -7.7
For 2nd complex number
Enter the real and imaginary parts: 9.1 7.3
Sum = 12.6 + -0.4iSaving session...
...copying shared history...
...saving history...truncating history files...
...completed.
[Process completed]

THANK YOU