Pgm 7.2.1

```
struct student
{
   int regno;
   int contactno;
   char * name;
   struct address Address;
}
```

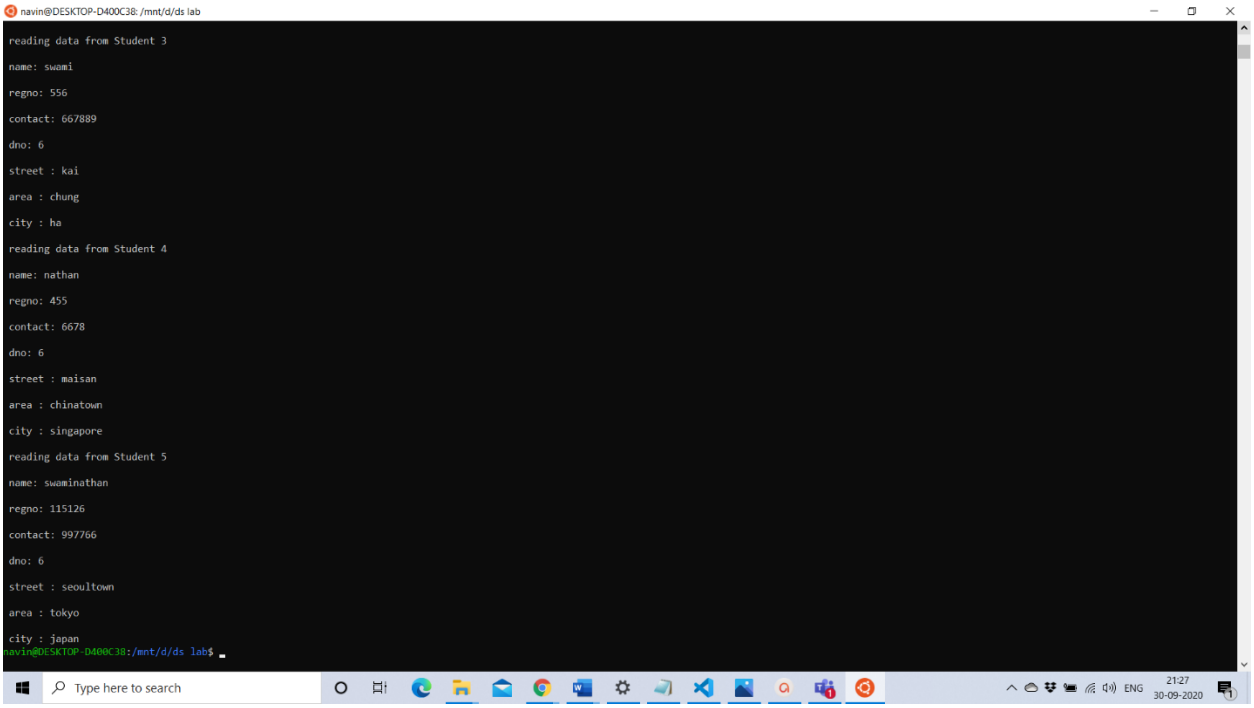
Declare a pointer to this structure and allocate memory dynamically for 5 students. Implement functions(read and display) to read data for 5 students and print the same.

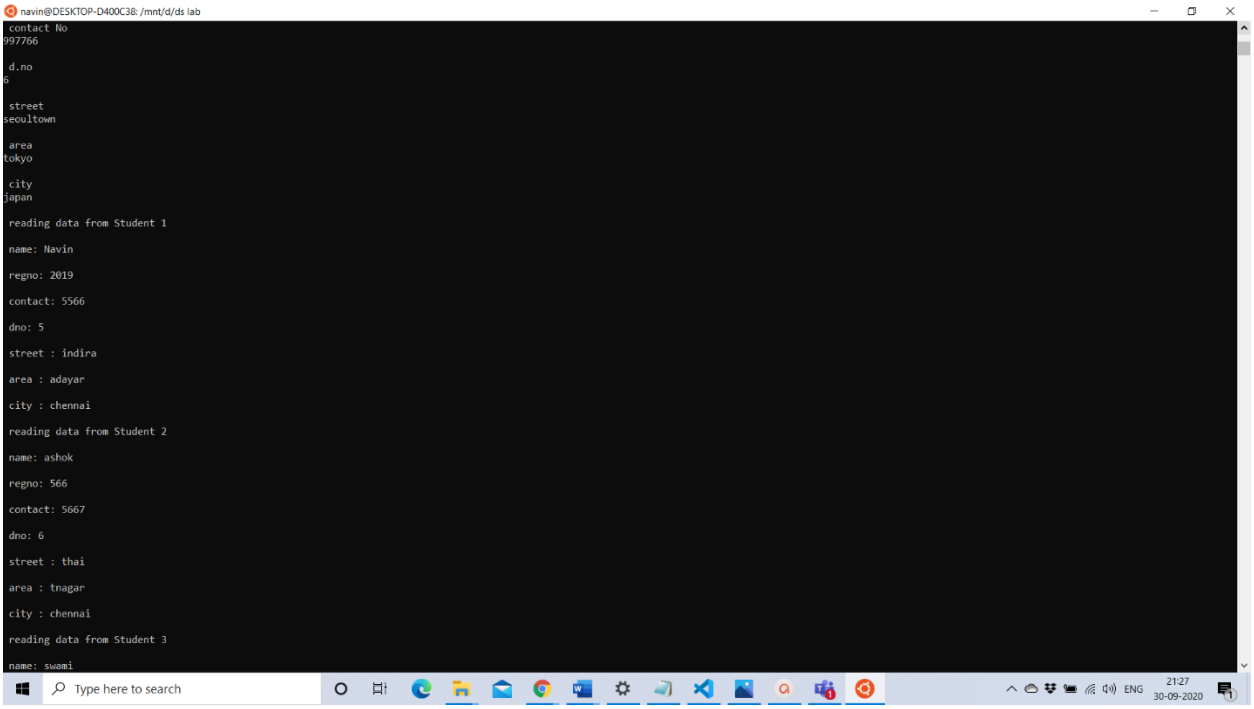
Code:

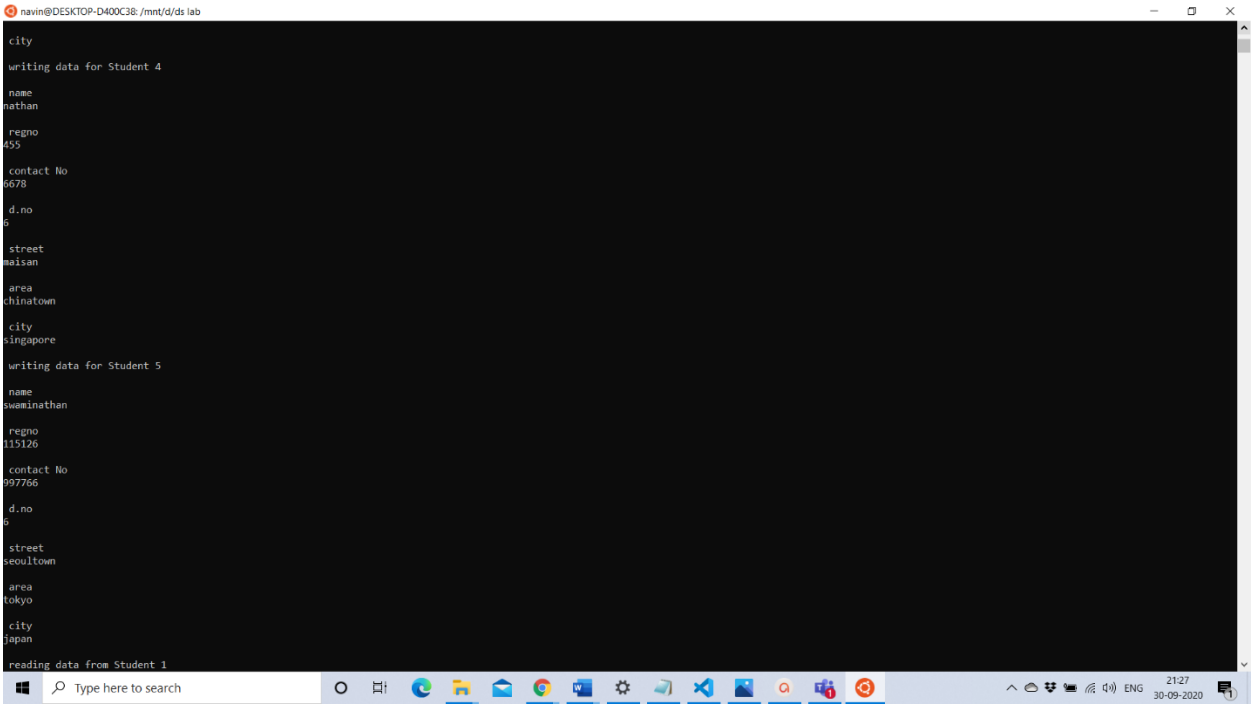
```
#include <stdio.h>
#include <stdlib.h>
struct address
{
 int dno;
 char street[10];
 char area[10];
 char city[10];
};
struct student
{
 int regno;
 int contactno;
 char * name;
 struct address ad;
};



void write(struct student *ptri)
 {
 printf(" \n name \n");
 char* cptr = malloc(20);
 scanf("%s",cptr);
```

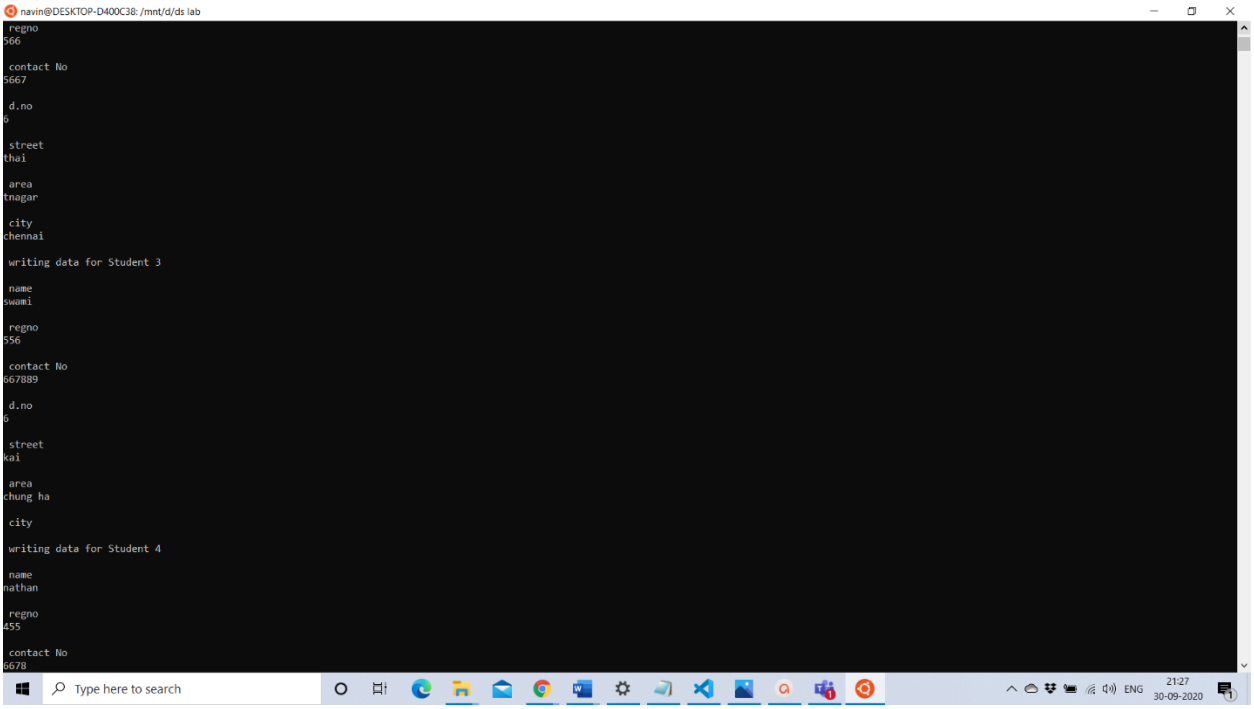
```
 ptri->name = cptr;
 printf(" \n regno \n");
 scanf("%d",&(ptri->regno));
 printf(" \n contact No \n");
 scanf("%d",&(ptri->contactno));
 printf(" \n d.no \n");
 scanf("%d",&(ptri->ad.dno));
 printf(" \n street \n");
 scanf("%s",(ptri->ad.street));
 printf(" \n area \n");
 scanf("%s",(ptri->ad.area));
 printf(" \n city \n");
 scanf("%s",(ptri->ad.city));

}

void read(struct student *ptri)
 {
     printf(" \n name: %s\n",(ptri->name));
 printf(" \n regno: %d \n",(ptri->regno));
 printf(" \n contact: %d\n",(ptri->contactno));
 printf(" \n dno: %d\n",(ptri->ad.dno));
 printf(" \n street : %s\n",(ptri->ad.street));
 printf(" \n area : %s\n",(ptri->ad.area));
 printf(" \n city : %s\n",(ptri->ad.city));

}
int main()
 {
 struct student *ptr;
 ptr = malloc(5*sizeof(struct student));
 for (struct student* i = ptr; i < (ptr+5); i++) {
 printf("\n writing data for Student %d\n", (int)(i-ptr+1));
 write(i);
 }
 for (struct student* i = ptr; i < (ptr+5); i++) {
 printf("\n reading data from Student %d\n", (int)(i-ptr+1));
 read(i);
 }
 return 0;
}
```

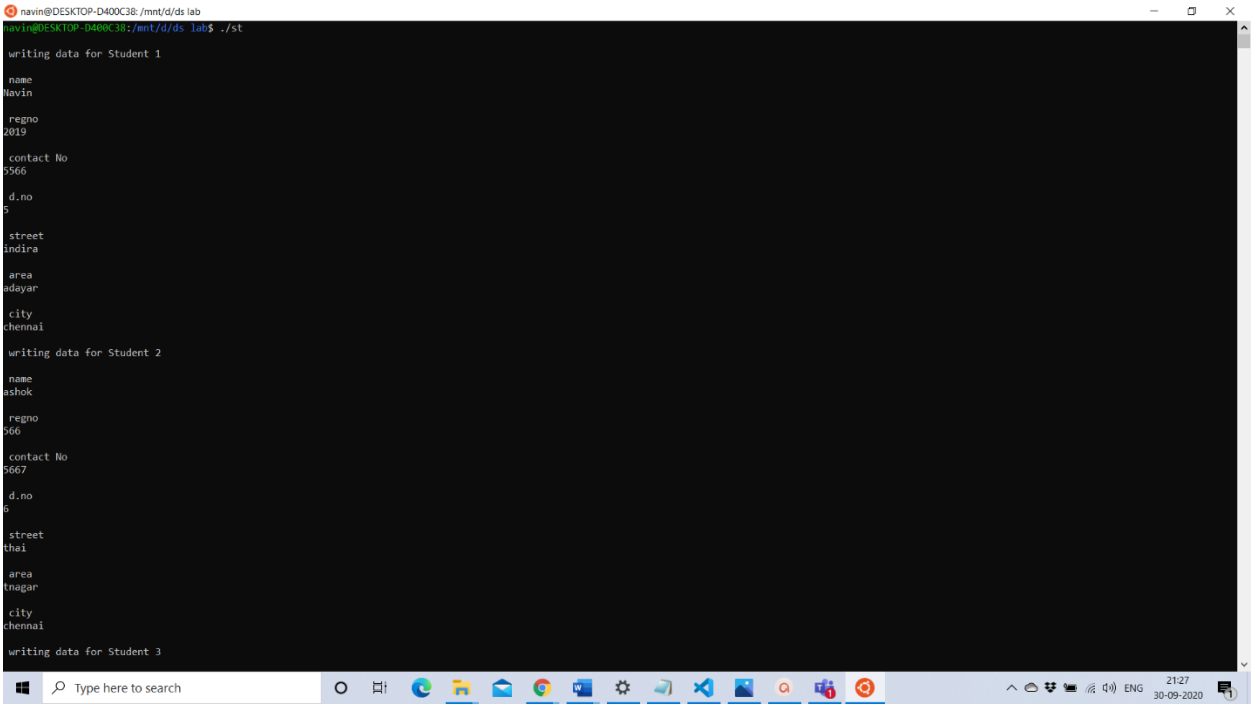
Output and code screenshots:

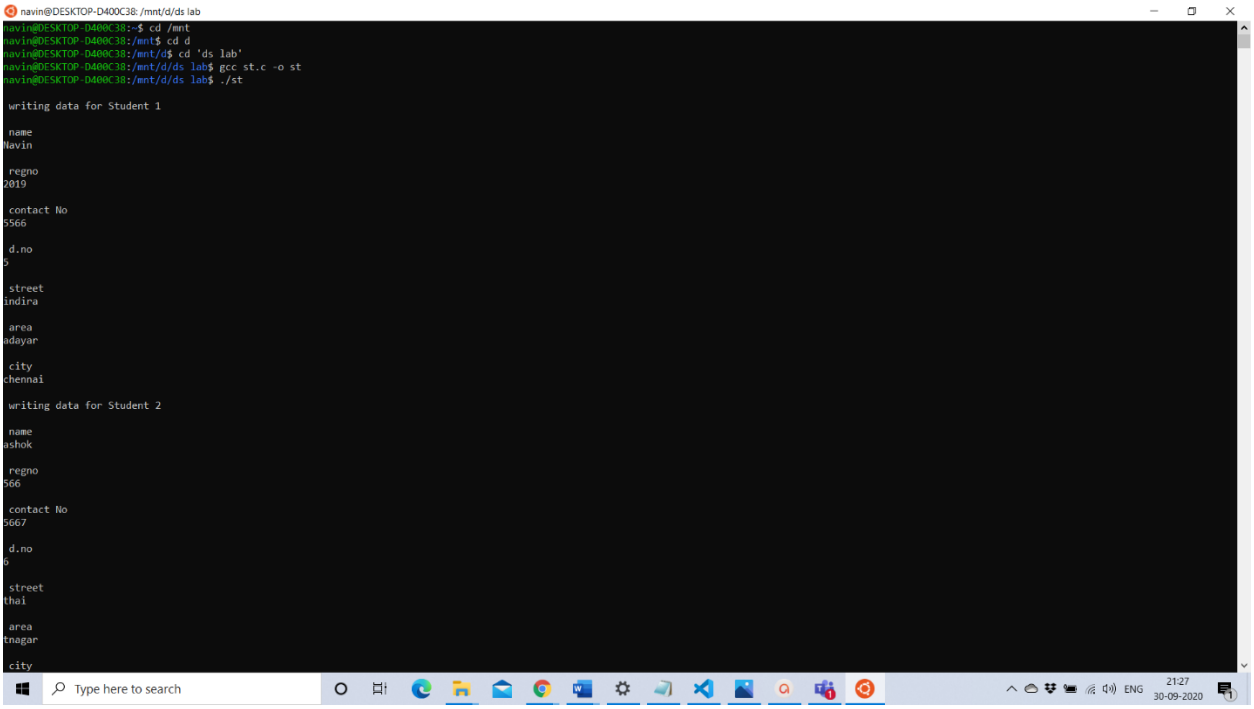

navin@DESKTOP-D400C38: /mnt/d/ds lab
reading data from Student 3
name: swami
regno: 556
contact: 667889
dno: 6
street : kai
area : chung
city : ha
reading data from Student 4
name: nathan
regno: 455
contact: 6678
dno: 6
street : maisan
area : chinatown
city : singapore
reading data from Student 5
name: swaminathan
regno: 115126
contact: 997766
dno: 6
street : seoultown
area : tokyo
city : japan
navin@DESKTOP-D400C38:/mnt/d/ds lab$
Type here to search
ENG
21:27
30-09-2020

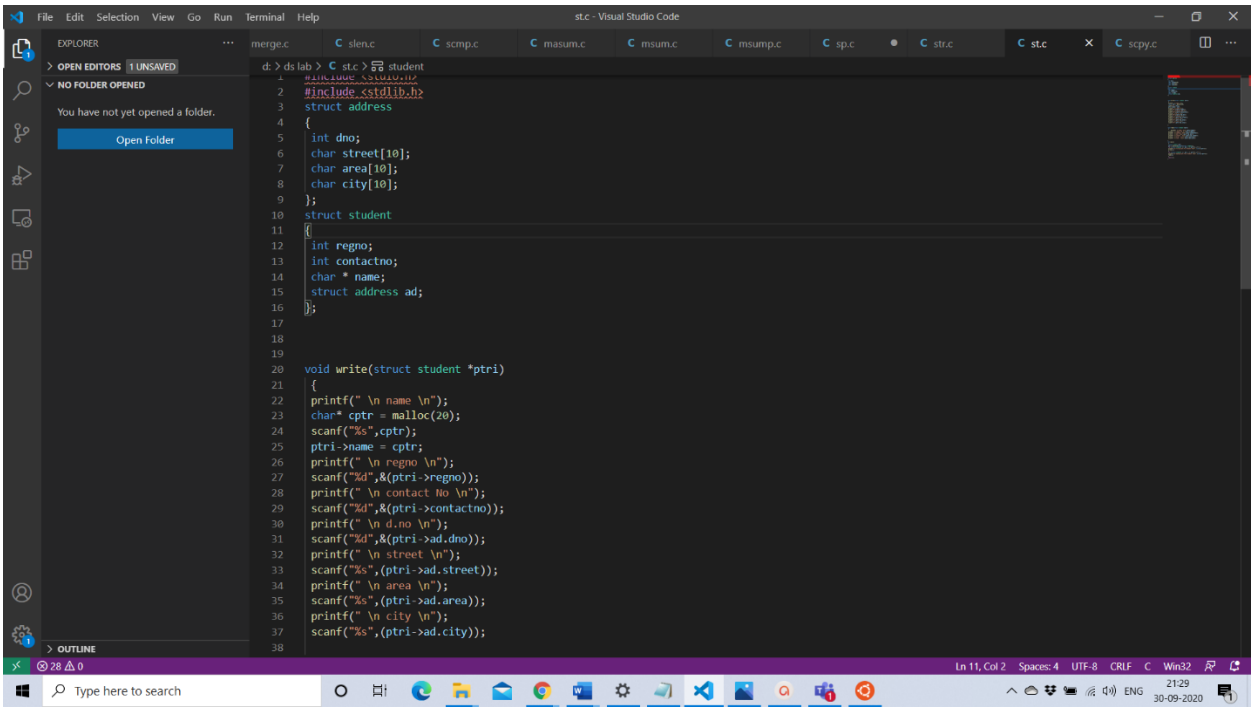

navin@DESKTOP-D400C38: /mnt/d/ds lab
contact No
997766
d.no
6
street
seoultown
area
tokyo
city
japan
reading data from Student 1
name: Navin
regno: 2019
contact: 5566
dno: 5
street : indira
area : adayar
city : chennai
reading data from Student 2
name: ashok
regno: 566
contact: 5667
dno: 6
street : thai
area : tnagar
city : chennai
reading data from Student 3
name: swami
Type here to search
ENG
21:27
30-09-2020


navin@DESKTOP-D400C38: /mnt/d/ds lab
city
writing data for Student 4
name
nathan
regno
455
contact No
6678
d.no
6
street
maisan
area
chinatown
city
singapore
writing data for Student 5
name
swaminathan
regno
115126
contact No
997766
d.no
8
street
seoultown
area
tokyo
city
japan
reading data from Student 1
Type here to search
ENG
21:27
30-09-2020

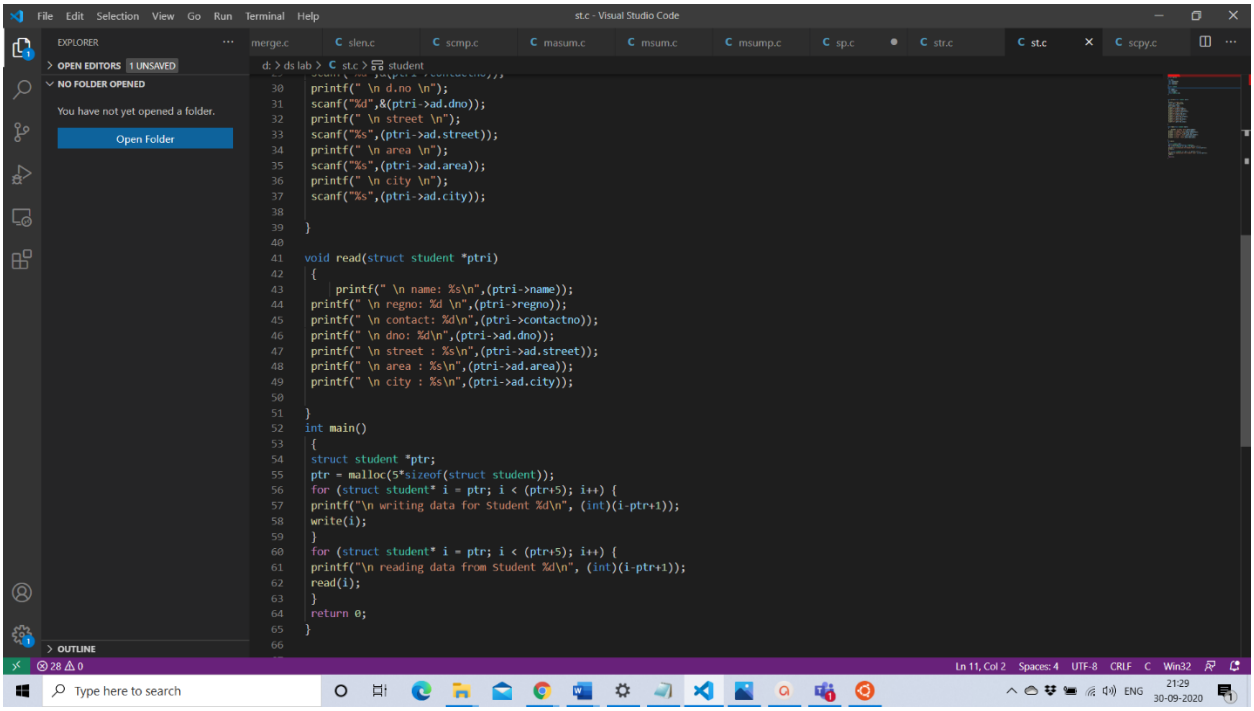

navin@DESKTOP-D400C38: /mnt/d/ds lab
regno
566
contact No
5667
d.no
6
street
thai
area
tnagar
city
chennai
writing data for Student 3
name
swami
regno
556
contact No
667889
d.no
6
street
kai
area
chung ha
city
writing data for Student 4
name
nathan
regno
455
contact No
6678
Type here to search
ENG
21:27
30-09-2020


navin@DESKTOP-D400C38: /mnt/d/ds lab
navin@DESKTOP-D400C38:/mnt/d/ds lab$ ./st
writing data for Student 1
name
Navin
regno
2019
contact No
5566
d.no
5
street
indira
area
adayar
city
chennai
writing data for Student 2
name
ashok
regno
566
contact No
5667
d.no
6
street
thai
area
tnagar
city
chennai
writing data for Student 3
Type here to search
ENG
21:27
30-09-2020


navin@DESKTOP-D400C38: /mnt/d/ds lab
navin@DESKTOP-D400C38:~$ cd /mnt
navin@DESKTOP-D400C38:/mnt$ cd d
navin@DESKTOP-D400C38:/mnt/d$ cd 'ds lab'
navin@DESKTOP-D400C38:/mnt/d/ds lab$ gcc st.c -o st
navin@DESKTOP-D400C38:/mnt/d/ds lab$ ./st
writing data for Student 1
name
Navin
regno
2019
contact No
5566
d.no
5
street
indira
area
adayar
city
chennai
writing data for Student 2
name
ashok
regno
566
contact No
5667
d.no
6
street
thai
area
tnagar
city
Type here to search
ENG
21:27
30-09-2020



```c
#include <stdlib.h>
struct address
{
 int dno;
 char street[10];
 char area[10];
 char city[10];
};
struct student
{
 int regno;
 int contactno;
 char * name;
 struct address ad;
};


void write(struct student *ptri)
 {
 printf(" \n name \n");
 char* cptr = malloc(20);
 scanf("%s",cptr);
 ptri->name = cptr;
 printf(" \n regno \n");
 scanf("%d",&(ptri->regno));
 printf(" \n contact No \n");
 scanf("%d",&(ptri->contactno));
 printf(" \n d.no \n");
 scanf("%d",&(ptri->ad.dno));
 printf(" \n street \n");
 scanf("%s",(ptri->ad.street));
 printf(" \n area \n");
 scanf("%s",(ptri->ad.area));
 printf(" \n city \n");
 scanf("%s",(ptri->ad.city));
```



```c
 printf(" \n d.no \n");
 scanf("%d",&(ptri->ad.dno));
 printf(" \n street \n");
 scanf("%s",(ptri->ad.street));
 printf(" \n area \n");
 scanf("%s",(ptri->ad.area));
 printf(" \n city \n");
 scanf("%s",(ptri->ad.city));

 }

 void read(struct student *ptri)
 {
     printf(" \n name: %s\n",(ptri->name));
 printf(" \n regno: %d \n",(ptri->regno));
 printf(" \n contact: %d\n",(ptri->contactno));
 printf(" \n dno: %d\n",(ptri->ad.dno));
 printf(" \n street : %s\n",(ptri->ad.street));
 printf(" \n area : %s\n",(ptri->ad.area));
 printf(" \n city : %s\n",(ptri->ad.city));

 }
 int main()
 {
 struct student *ptr;
 ptr = malloc(5*sizeof(struct student));
 for (struct student* i = ptr; i < (ptr+5); i++) {
 printf("\n writing data for Student %d\n", (int)(i-ptr+1));
 write(i);
 }
 for (struct student* i = ptr; i < (ptr+5); i++) {
 printf("\n reading data from Student %d\n", (int)(i-ptr+1));
 read(i);
 }
 return 0;
 }
```