```
#include <stdio.h>
#include <unistd.h>
#include <stdlib.h>
#include <sys/stat.h>
#include <fcntl.h>

typedef struct Student {

  int roll;
  char name[100];
  float percentage;

}Student;

char *file_path;

void write_student(Student student) {

    int fd = open(file_path, O_WRONLY|O_APPEND);

    if(fd<0)
    {
      printf("\nError writing file");
      exit(0);
    }
    else
    {
      write(fd, &student, sizeof(student));
      printf("\n Writen successfully!");
    }
    close(fd);

}

void read_student() {
    Student student;
    int fd = open(file_path, O_RDONLY);
    if(fd<0)
    {
      printf("\nError reading file");
      exit(0);
    }
    else
    {
      while(read(fd, &student, sizeof(student)))
      printf("Name: %s\nRoll Number: %d\nPercentage: %f\n", student.name, student.roll,
student.percentage);
    }

    close(fd);
}
void delete_student(int rno) {
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    char *tmp = "temp";
    Student student;
    int fd1 = open(file_path, O_RDONLY);
    int fd2 = open(tmp, O_CREAT|O_WRONLY);
    if(fd1<0)
    {
      printf("\nError reading file");
      exit(0);
    }
    else
    {
      while(read(fd1, &student, sizeof(student)))
      {
        if(student.roll == rno)
        {

        }
        else
        {
            write(fd2, &student, sizeof(student));
        }
      }
    }

    remove(file_path);
    rename(tmp,file_path);

    close(fd1);
    close(fd2);
}

void search_student(int rno) {

    Student student;
    int fd1 = open(file_path, O_RDONLY);
    int flag = 0;
    if(fd1<0)
    {
      printf("\nError reading file");
      exit(0);
    }
    else
    {
      while(read(fd1, &student, sizeof(student)))
      {
        if(student.roll == rno)
        {
            printf("Name: %s\nRoll Number: %d\nPercentage: %f\n", student.name, student.roll,
student.percentage);
            flag = 1;
        }
      }
```

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    }

    if(flag == 0)
          printf("\nRecord not Found!");


    close(fd1);

}

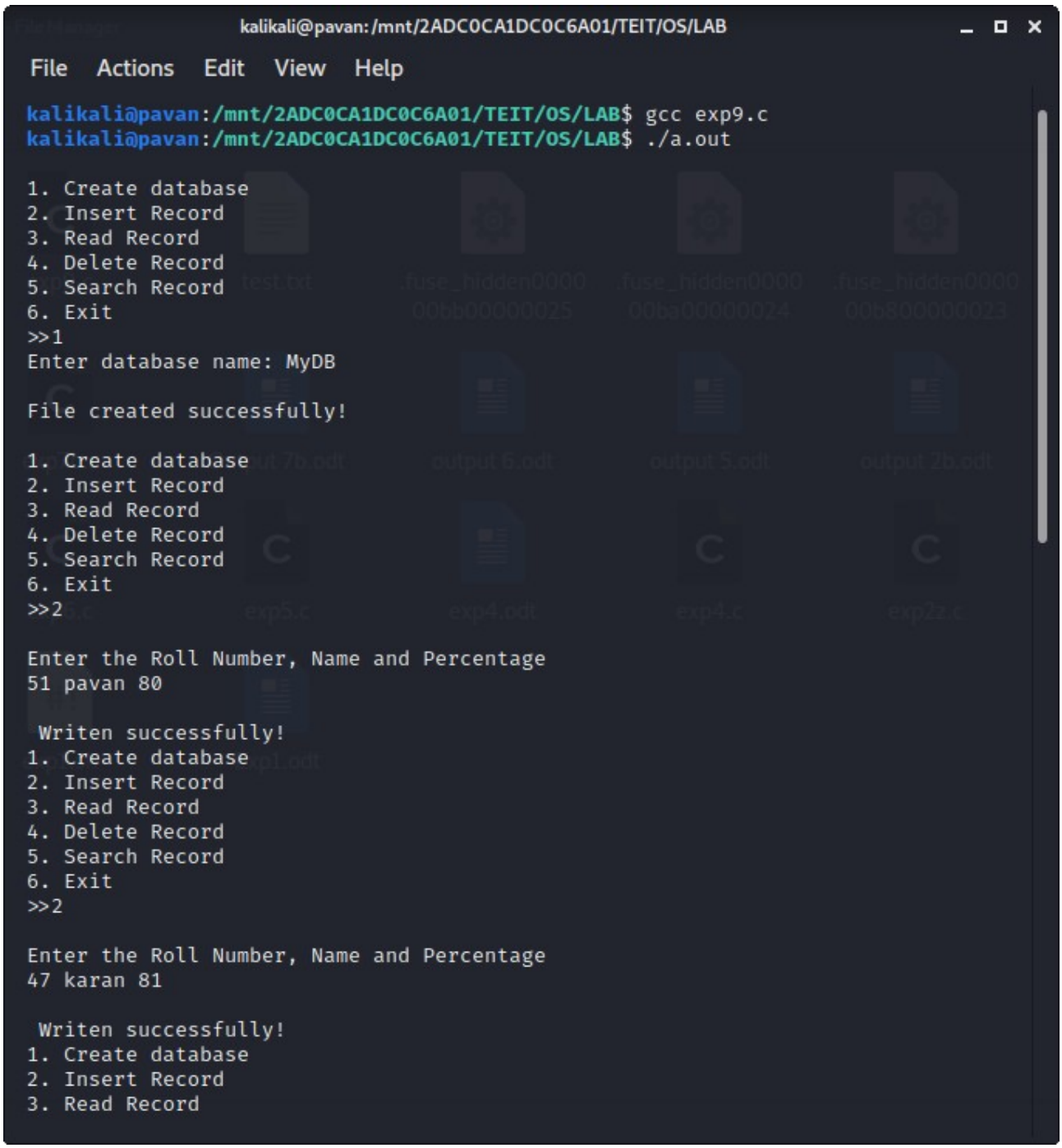
int main(int argc, char const *argv[])
{
  Student student;
  int ch;
  int fd, r;
  char dname[20];

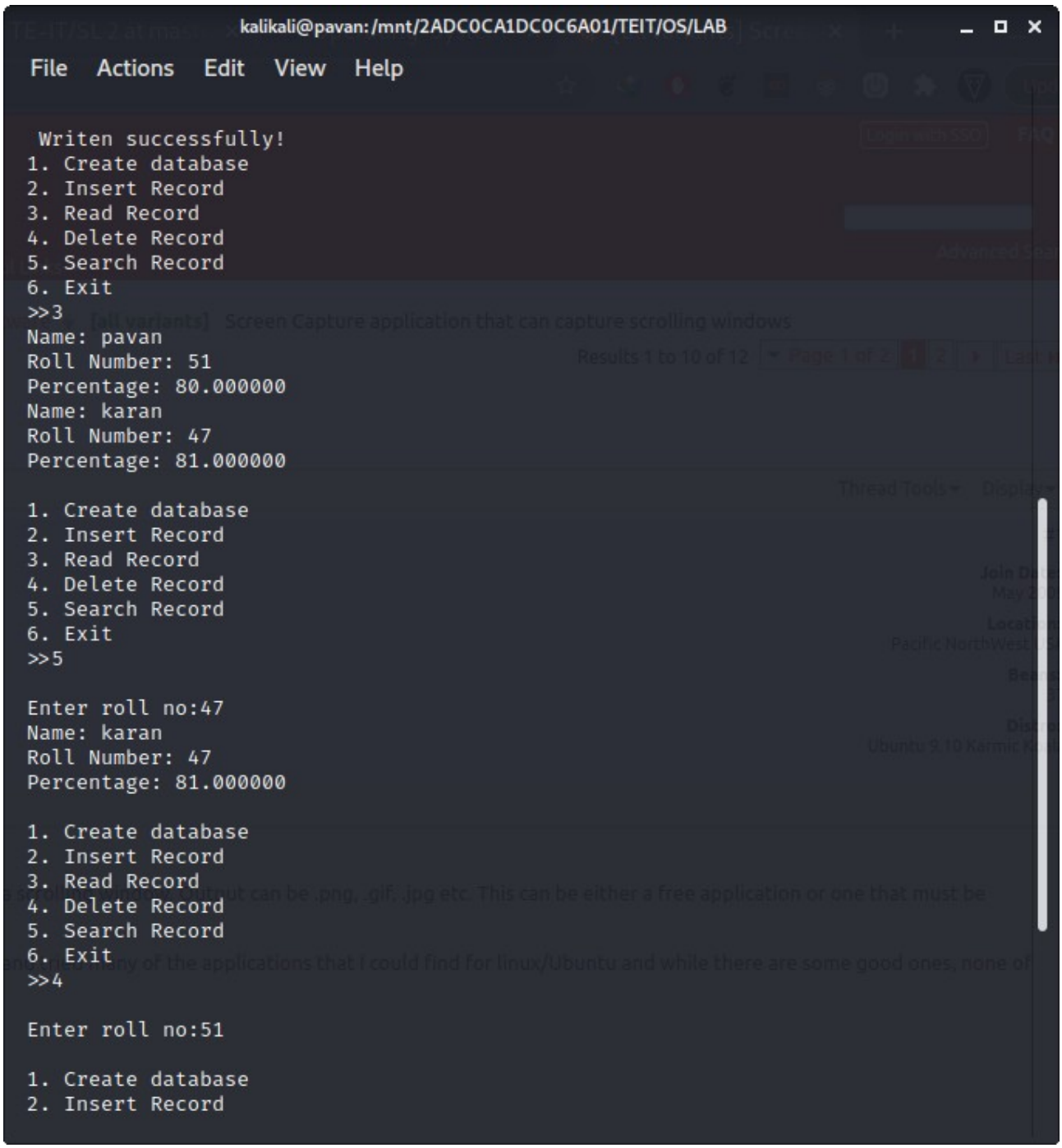

  while(1)
  {
     printf("\n1. Create database \n2. Insert Record \n3. Read Record \n4. Delete Record \n5. Search
Record \n6. Exit \n>>") ;
    scanf("%d", &ch);

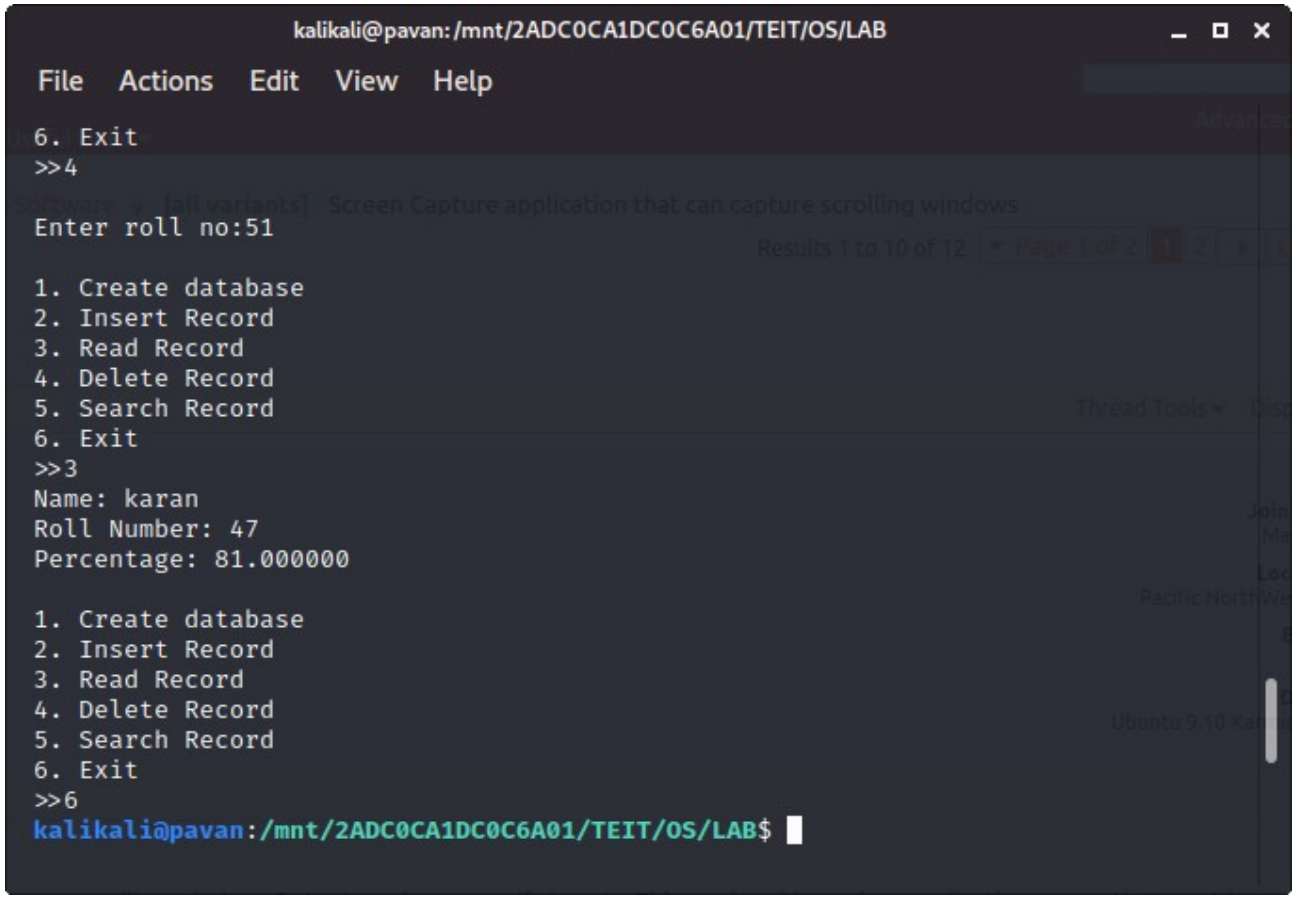
    switch(ch)
    {
      case 1:
          printf("Enter database name: ");
          scanf("%s", dname);
        file_path = dname;
        int fd = open(file_path, O_CREAT);
        if(fd<0)
        {
          printf("\nError creating file");
          exit(0);
        }
        else
        {
          printf("\nFile created successfully!\n");
        }
        close(fd);
          break;
      case 2:
          printf("\nEnter the Roll Number, Name and Percentage\n");
        scanf("%d%s%f", &student.roll, student.name, &student.percentage);
          write_student(student);
          break;
      case 3:
        read_student();
        break;
      case 4:
          printf("\nEnter roll no:");
```

```
        scanf("%d", &r);
        delete_student(r);
        break;
    case 5:
      printf("\nEnter roll no:");
        scanf("%d", &r);
        search_student(r);
        break;
    case 6:
        exit(0)    ;
    default:
        printf("\nInvalid Choce!");
   }
  }

  return 0;
}
```


kalikali@pavan: /mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB
File Actions Edit View Help
kalikali@pavan:/mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB$ gcc exp9.c
kalikali@pavan:/mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB$ ./a.out
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>1
Enter database name: MyDB
File created successfully!
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>2
Enter the Roll Number, Name and Percentage
51 pavan 80
Writen successfully!
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>2
Enter the Roll Number, Name and Percentage
47 karan 81
Writen successfully!
1. Create database
2. Insert Record
3. Read Record


kalikali@pavan: /mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB
File Actions Edit View Help
Writen successfully!
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>3
Name: pavan
Roll Number: 51
Percentage: 80.000000
Name: karan
Roll Number: 47
Percentage: 81.000000
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>5
Enter roll no:47
Name: karan
Roll Number: 47
Percentage: 81.000000
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>4
Enter roll no:51
1. Create database
2. Insert Record


kalikali@pavan: /mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB
File Actions Edit View Help
6. Exit
>>4
Enter roll no:51
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>3
Name: karan
Roll Number: 47
Percentage: 81.000000
1. Create database
2. Insert Record
3. Read Record
4. Delete Record
5. Search Record
6. Exit
>>6
kalikali@pavan:/mnt/2ADC0CA1DC0C6A01/TEIT/OS/LAB$