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Roll Number: SYCOC303

Division: C

PRN Number: 122B2B303

Batch: C4

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Problem Statement:

Write a program using C++ to create a student database system containing the following information:

Name, roll number, Class, division, Date of Birth, Blood group, Contact address, telephone number. Use Class, object, inline function. Use static variables and static functions to maintain count of the number of students. Use constructor and destructor.

=====

INPUT:

```
/*
 * =====
 *      Program Name: StudentDB.cpp
 *      Created on: November 25, 2022
 *      Author: Vinayak Shete
 *      =====
 */
```

```
#include<iostream>
#include<stdlib.h>
#include<string.h>
using namespace std;
```

```
//global static variable
static int std_count;
```

```
class StudentDB
{
```

```
    string std_name;
    int std_rollno;
    string std_class;
    char std_div;
    string std_dob;
    string std_bg;
    string std_contaddr;
    string std_telno;

public:
    //definition for static function.
    static void std_countfun(){

        cout<<"\n=====";
        cout<<"\nInside Static function!";
        cout<<"\nTotal no of Students entered in the database are: "<<std_count;

        cout<<"\n=====";
    }

    //declaring member functions
    void displayData();
    void insertData(int);

    //use of constructor for initialization of an objects.
    StudentDB()
    {
        //This constructor is called for initialization of objects!";
    }

};

void StudentDB::insertData(int max_size)
{
    if(std_count>=max_size){
        cout<<"\nThe max size of the database exceeded! Insertion Operation
failed!";
    }
}
```

```
else{
    cout<<"=====Insertion Operation=====";
    cout<<"\nEnter the name of the student:";
    cin>>std_name;
    cout<<"Enter the roll number of the student:";
    cin>>std_rollno;
    cout<<"Enter the class of the student:";
    cin>>std_class;
    cout<<"Enter the division of the student:";
    cin>>std_div;
    cout<<"Enter the date of birth of the student[dd/mm/yyyy]:";
    cin>>std_dob;
    cout<<"Enter the date of blood group of the student[eg:AB+ve]:";
    cin>>std_bg;
    cout<<"Enter the contact address of the student:";
    cin>>std_contaddr;
    cout<<"Enter the telephone number of the student:";
    cin>>std_telno;
    //incrementing count
    std_count++;
}
}

void StudentDB::displayData(){
    cout<<"\n"<<std_rollno<<"\t\t"<<std_name<<"\t\t"<<std_class<<"\t"<<std_div<<"\t
\t"<<std_dob<<"\t"<<std_bg<<"\t\t"<<std_contaddr<<"\t\t"<<std_telno;
}

int main()
{
    int ch,doch,size_db;
    cout<<"=====WELCOME=====";
    cout<<"\nEnter the number of students you want to store into database:";
    cin>>size_db;
    int array_index=0;//storing array indexes.
    StudentDB obj1;
    StudentDB obj[size_db+1];//call to default constructor
```

```
do
{

    cout<<"\n=====";

    cout<<"\n1.Insert Student record in the database.\n2.Display the records
in the database.\n3.See the student count entered in the database.\n4.Exit";

    cout<<"\nEnter your choice:";
    cin>>ch;
    switch(ch)
    {
    case 1:
        obj1.insertData(size_db);
        obj[array_index]=obj1;
        array_index++;
        break;

    case 2:
        if(std_count==0){
            cout<<"\nNo records are present! Empty Database-->";
        }

        cout<<"\n=====STUDENT
DATABASE=====";

        cout<<"\nRoll
No\t\tName\t\tClass\tDivision\tDOB\t\tBG\t\tAddress\t\tTelNo.";
        for(int j=0;j<std_count;j++)
        {
            obj[j].displayData();
        }

        cout<<"\n=====
=====";

        break;

    case 3:
        obj1.std_countfun();
        break;

    case 4:
        goto exit;
```

```
        break;

        default:
            cout<<"\nPlease Enter the correct choice!";
            break;
    }
    cout<<"\n=====Do you want to continue?Press 1
for YES and Press 0 for NO-->";
    cin>>doch;
}while(doch==1);
exit:
cout<<"=====Thank You!=====";
return 0;
}
```

OUTPUT:

```
=====WELCOME=====
Enter the number of students you want to store into database:3

=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:2

No records are present! Empty Database-->>
=====STUDENT DATABASE=====
Roll No      Name      Class  Division  DOB      BG      Address      TelNo.
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->1

=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:3

=====
Inside Static function!
Total no of Students entered in the database are: 0
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->
```

1) Inserting the records into the database:

```
=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:1
=====Insertion Operation=====
Enter the name of the student:ABC
Enter the roll number of the student:101
Enter the class of the student:8th
Enter the division of the student:A
Enter the date of birth of the student[dd/mm/yyyy]:18/12/2002
Enter the date of blood group of the student[eg:AB+ve]:A+ve
Enter the contact address of the student:Pune
Enter the telephone number of the student:8888888888

=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->1

=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:3

=====
Inside Static function!
Total no of Students entered in the database are: 1
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->
```

```
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->1

=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:1

The max size of the database exceeded! Insertion Operation failed!
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->
```

2)Displaying the details of student:

```
=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:2

=====STUDENT DATABASE=====
Roll No      Name      Class  Division  DOB      BG      Address      TelNo.
101          ABC      8th    A          18/12/2002  B+ve    Pune          9999999999
102          DEF      8th    C          29/04/2003  O+ve    Sangli        8888888888
103          GHI      9th    B          03/08/1999  AB-ve    Mumbai       6666666666
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->
```

3)Use of Static function:

```
=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:3

=====
Inside Static function!
Total no of Students entered in the database are: 3
=====
Do you want to continue?Press 1 for YES and Press 0 for NO-->1

=====
1.Insert Student record in the database.
2.Display the records in the database.
3.See the student count entered in the database.
4.Exit
Enter your choice:4
=====Thank You!=====
=====
```

=====