

PRACTICAL 2

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Div: B

Batch: B2

Problem Statement:

Develop a program in C++ to create a database of student's information system containing the following information: Name, Roll number, Class, Division, Date of Birth, Blood group, Contact address, Telephone number, Driving license no. and other. Construct the database with suitable member functions. Make use of constructor, default constructor, copy constructor, destructor, static member functions, friend class, this pointer, inline code and dynamic memory allocation operators-new and delete as well as exception handling.

CODE:

```
#include<iostream>
#include<string.h>
using namespace std;
class infoStudent
{
char stAddress[20],stbranch[20];
long int stContact;
public:
infoStudent()
{
strcpy(stAddress,"XXXXX");
strcpy(stbranch,"XX");
stContact=0000000000;
}
~infoStudent()
{
cout<<"infoStudent destructor called.";
}
friend class perStudent;
};
class perStudent
{
char stName[20], stDOB[10], stBlood[10], stRoll[10],stClass[10],
stDiv[10];
static int count;
infoStudent*si;
public:
perStudent()
{
```

```

strcpy(stName,"XXXXX");
strcpy(stDOB,"DD/MM/YYYY");
strcpy(stBlood,"NA");
strcpy(stRoll,"X000000");
strcpy(stClass,"X");
strcpy(stDiv,"X");
si= new infoStudent;
}
perStudent(perStudent*S1)
{
strcpy(stName,S1->stName);
strcpy(stDOB,S1->stDOB);
strcpy(stBlood,S1->stBlood);
strcpy(stRoll,S1->stRoll);
strcpy(stClass,S1->stClass);
strcpy(stDiv,S1->stDiv);
si=new infoStudent;
strcpy(si->stAddress,S1->si->stAddress);
strcpy(si->stbranch,S1->si->stbranch);
si->stContact=S1->si->stContact;
}
static void showcount()
{
cout<<"\nNumber of Records: "<<count<<endl;;
}
~perStudent()
{
cout<<"perStudent destructor called.";
}
void getdata (char stName[20]);
inline void display();
};
void perStudent::getdata (char stName[20])
{
strcpy(this->stName, stName);
cout<<"\nEnter Roll: ";
cin>>stRoll;
cout<<"\nEnter Class: ";
cin>>stClass;
cout<<"\nEnter Division: ";
cin>>stDiv;
cout<<"\nEnter Data of Birth: ";
cin>>stDOB;
cout<<"\nEnter Blood Group: ";
cin>>stBlood;
cout<<"\nEnter Adress: ";
cin>>si->stAddress;
cout<<"\nEnter Branch: ";
cin>>si->stbranch;
cout<<"\nEnter Contact No: ";
cin>>si->stContact;
count++;
}

```

```

}
void perStudent::display()
{
cout<<"\t"<<stName;
cout<<"\t"<<stRoll;
cout<<"\t"<<stClass;
cout<<"\t"<<stDiv;
cout<<"\t"<<stDOB;
cout<<"\t"<<stBlood;
cout<<"\t"<<si->stAddress;
cout<<"\t"<<si->stbranch;
cout<<"\t"<<si->stContact;
}
int perStudent::count;
int main()
{
perStudent *S1,*S2;
int ch;
S1=new perStudent;
S2=new perStudent(S1);
cout<<"\tstName";
cout<<"\tstDOB";
cout<<"\tstBlood";
cout<<"\tstRoll";
cout<<"\tstClass";
cout<<"\tstDiv";
cout<<"\tstAddress";
cout<<"\tstbranch";
cout<<"\tstContact";
cout<<endl;
cout<<"Default Constructor Value \n";
S1->display();
cout<<"\n";
cout<<"Copy Constructor Value \n ";
S2->display();
int n;
cout<<"\nEnter Record Numbers to Store: ";
cin>>n;
perStudent S3[n];
char stName[20];
int x=0;
do
{
cout<<"\nWelcome to Student Database Information !!";
cout<<"\n1 to Enter the record";
cout<<"\n2 to Display the record";
cout<<"\n3 to Exit"<<endl;
cin>>ch;
switch(ch)
{
case 1:
{

```

```

cout<<"\nEnter the Name:";
cin>>stName;
S3[x].getdata(stName);
perStudent::showcount();
x++;
break;
}
case 2:
{
cout<<"\tName";
cout<<"\tDOB";
cout<<"\tBlood";
cout<<"\tRoll";
cout<<"\tClass";
cout<<"\tDiv";
cout<<"\tAddress";
cout<<"\tBranch";
cout<<"\tContact";
for(int i=0; i<n; i++)
{
cout<<"\n";
S3[i].display();
}
break;
}
}
}
while(ch!=3);
delete S1;
delete S2;
return 0;
}

```

Input:-

```
aryan@ubuntu: ~  
aryan@ubuntu:~$ gedit 1.cpp  
^Z  
[1]+  Stopped                  gedit 1.cpp  
aryan@ubuntu:~$ g++ 1.cpp -o run  
aryan@ubuntu:~$ ./run  
      stName  stDOB   stBlood stRoll  stClass stDiv   stAddress      stbranchstContact  
Default Constructor Value  
      XXXXX   X000000 X       X      DD/MM/YYYYNA   NA       XXXXX   XX       0  
Copy Constructor Value  
      XXXXX   X000000 X       X      DD/MM/YYYYNA   NA       XXXXX   XX       0  
Enter Record Numbers to Store: 2  
  
Welcome to Student Database Information !!  
1 to Enter the record  
2 to Display the record  
3 to Exit  
1  
  
Enter the Name:Aryan  
  
Enter Roll: S212043  
  
Enter Class: SE  
  
Enter Division: B  
  
Enter Data of Birth: 06/12/2003  
  
Enter Blood Group: A+  
  
Enter Adress: xxxxx  
  
Enter Branch: CE  
  
Enter Contact No: 9112986961  
  
Number of Records: 1  
  
Welcome to Student Database Information !!
```

Output:-

```
Welcome to Student Database Information !!  
1 to Enter the record  
2 to Display the record  
3 to Exit  
2  
      Name    DOB      Blood  Roll   Class  Div   Address Branch  Contact  
      Aryan   S212043 SE      B      06/12/2003A+  A+     xxxxx   CE     9112986961  
      XXXXX   X000000 X       X      DD/MM/YYYYNA   NA     XXXXX   XX      0  
Welcome to Student Database Information !!  
1 to Enter the record  
2 to Display the record  
3 to Exit  
1
```