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DIV:C
BATCH:C1
ROLL NO:S213003
SUBJECT :OOP

PROBLEM STATEMENT:

Develop an object oriented program in C++ to create database of student information system containing the following information: Name, Roll number, Class, Division, Date of birth, Contact, Address, Telephone number, Driving License number and other. Construct the database with suitable member functions for initializing and destroying the data viz 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 person_additional_info
{
char address[20],license[20],insurance[20];
long int contact;
public:
person_additional_info()
{
strcpy(address, "XYZ");
strcpy(license,"XY-0000000000");
strcpy(insurance,"XY00000000X");
contact=000000000;
}
~person_additional_info()
{
cout<<"I am in Destructor";
}
friend class person;
};
class person
{
char name[20], dob[10], blood[10] , div[10], batch[10];
float ht,wt;
static int count;
```

```

person_additional_info *pai;
public:
person()
{
strcpy(name,"XYZ");
strcpy(dob,"dd/mm/yy");
strcpy(blood,"O +ve");
strcpy(div,"A");
strcpy(batch,"A3");
ht=0;
wt=0;
pai=new person_additional_info;
}
person(person *p1)
{
strcpy(name,p1->name);
strcpy(dob,p1->dob);
strcpy(blood,p1->blood);
strcpy(div,p1->div);
strcpy(batch,p1->batch);
ht=p1->ht;
wt=p1->wt;
pai=new person_additional_info;
strcpy(pai->address,p1->pai->address);
strcpy(pai->license,p1->pai->license);
strcpy(pai->insurance,p1->pai->insurance);
pai->contact=p1->pai->contact;
}
static void showcount()
{
cout<<"\nNo of records count="<<count<<"\n";
}
~person()
{
cout<<"\nI am in Destructor\n";
}
void getdata(char name[20]);
inline void display();
};
void person::getdata(char name[20])
{
strcpy(this->name, name);
cout<<"\nEnter date of birth: ";
cin>>dob;
cout<<"\nEnter blood group: ";

```

```

cin>>blood;
cout<<"\nEnter division: ";
cin>>div;
cout<<"\nEnter batch: ";
cin>>batch;
cout<<"\nEnter height: ";
cin>>ht;
cout<<"\nEnter weight: ";
cin>>wt;
cout<<"\nEnter address: ";
cin>>pai->address;
cout<<"\nEnter Licence number: ";
cin>>pai->license;
cout<<"\nEnter Insurance policy number: ";
cin>>pai->insurance;
cout<<"\nEnter Contact number: ";
cin>>pai->contact;
count++;
}
void person::display()
{
cout<<"\t"<<name;
cout<<"\t"<<dob;
cout<<"\t"<<blood;
cout<<"\t"<<div;
cout<<"\t"<<batch;
cout<<"\t"<<ht;
cout<<"\t"<<wt;
cout<<"\t"<<pai->address;
cout<<"\t"<<pai->license;
cout<<"\t"<<pai->insurance;
cout<<"\t"<<pai->contact;
}
int person::count;
int main()
{
person *p1,*p2;
int ch;
p1=new person;
p2=new person(p1);
cout<<"\tName";
cout<<"\tDob";
cout<<"\t\tBlood";
cout<<"\tDiv";
cout<<"\tBatch";

```

```

cout<<"\tHt";
cout<<"\tWt";
cout<<"\tAddress";
cout<<"\tLicense";
cout<<"\t\tInsurance";
cout<<"\tContact";
cout<<endl;
cout<<"Default Constructor Value \n";
p1->display();
cout<<"\n";
cout<<"Copy Constructor Value \n";
p2->display();
int n;
cout<<"\nEnter how many records you want?";
cin>>n;
person p3[n];
char name[20];
int x=0;
do
{
cout<<"\n\nWelcome to Personal database system";
cout<<"\n1.Enter the record";
cout<<"\n2.Display the record";
cout<<"\n3.Exit\n";
cin>>ch;
switch(ch)
{
case 1:
{
cout<<"\nEnter the Name: ";
cin>>name;
p3[x].getdata(name);
person::showcount();
break;
}
case 2:
{
cout<<"\tName";
cout<<"\tDob";
cout<<"\t\tBlood";
cout<<"\tDiv";
cout<<"\tBatch";
cout<<"\tHt";
cout<<"\tHW";
cout<<"\tAddress";

```

```
cout<<"\tLicense";
cout<<"\t\tInsurance";
cout<<"\tContact";
for(int i=0;i<n;i++)
{
cout<<"\n";
p3[i].display();
}
break;
}
case 3:
exit(0);
}}
while(ch!=3);
delete p1;
delete p2;
return 0;
}
```

INPUT/OUTPUT:

```
d-comp-msl-18@dcompmsl18-OptiPlex-3070:~/Desktop$ g++ oop.cpp -o abc
```

```
d-comp-msl-18@dcompmsl18-OptiPlex-3070:~/Desktop$ ./abc
```

	Name	Dob	Blood	Div	Batch	Ht	Wt	Address	Contact
Default Constructor Value	XYZ	dd/mm/yy	O +ve	C	C1	0	0	XYZ	0
Copy Constructor Value	XYZ	dd/mm/yy	O +ve	C	C1	0	0	XYZ	0

Enter how many records you want?? 1

Welcome to Personal database system

1.Enter the record
2.Display the record
3.Exit
1

Enter the Name: shru

Enter date of birth: 26/12/2004

Enter blood group: A+ve

Enter division: c

Enter batch: c1

Enter height: 5.6

Enter weight: 50

Enter address: pune

Enter Contact number: 8176543218

No of records count=1

Welcome to Personal database system

1.Enter the record
2.Display the record
3.Exit
2

Name	Dob	Blood	Div	Batch	Ht	HW	Address	Contact
shru	26/12/2004	A+ve	c	c1	5.6	50	pune	8176543218