Code

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

class Student{

    char *name,*rno,*cls,*div,*dob,*bldgrp
,*mobn,*add;
    int m1,m2,m3,m4,m5;


public:
    static int count;
    Student();
    Student(char *name,char *rno,char *cls
,char *div,char *dob,char *bldgrp,char *mo
bn,char *add,int m1,int m2,int m3,int m4,i
nt m5);
    Student(Student &obj);
    friend class Result;
    //friend void Result::calPercentage(St
udent &);
    void getDetails();
```

```cpp
        void display();
        void Counter();
        ~Student();
};

int Student::count;

class Result{

    float percent;

public:

    void calPercentage(Student &obj){
        percent = (float)((obj.m1 + obj.m2
 + obj.m3 + obj.m4 + obj.m5)*100)/250;
        cout<<"\n"<<"Roll number "<<obj.rn
o<<" got "<<percent<<" percentage "<<"\n";
        return;
    }

};

Student::Student(){
    Counter();
    this->name = new char;
```

```cpp
        this->rno = new char;
        this->cls = new char;
        this->div = new char;
        this->dob = new char;
        this->bldgrp = new char;
        this->mobn = new char;
        this->add = new char;
     m1 = 0;
     m2 = 0;
     m3 = 0;
     m4 = 0;
     m5 = 0;
}

Student::Student(char *name,char *rno,char
 *cls,char *div,char *dob,char *bldgrp,cha
r *mobn,char *add,int m1,int m2,int m3,int
 m4,int m5){
     Counter();
     int size = 0;
     size = strlen(name);
     this->name = new char[size];
     this->name = name;
     size = strlen(rno);
     this->rno = new char[size];
     this->rno = rno;
```

```cpp
    size = strlen(cls);
    this->cls = new char[size];
    this->cls = cls;
    size = strlen(div);
    this->div = new char[size];
    this->div = div;
    size = strlen(dob);
    this->dob = new char[size];
    this->dob = dob;
    size = strlen(bldgrp);
    this->bldgrp = new char[size];
    this->bldgrp = bldgrp;
    size = strlen(mobn);
    this->mobn = new char[size];
    this->mobn = mobn;
    size = strlen(add);
    this->add = new char[size];
    this->add = add;
    this->m1 = m1;
    this->m2 = m2;
    this->m3 = m3;
    this->m4 = m4;
    this->m5 = m5;
}

Student::Student(Student &obj){
```

```cpp
    Counter();
    this->name = new char;
    this->name = obj.name;
    this->rno = new char;
    this->rno = obj.rno;
    this->cls = new char;
    this->cls = obj.cls;
    this->div = new char;
    this->div = obj.div;
    this->dob = new char;
    this->dob = obj.dob;
    this->bldgrp = new char;
    this->bldgrp = obj.bldgrp;
    this->mobn = new char;
    this->mobn = obj.mobn;
    this->add = new char;
    this->add = obj.add;
    this->m1 = obj.m1;
    this->m2 = obj.m2;
    this->m3 = obj.m3;
    this->m4 = obj.m4;
    this->m5 = obj.m5;
}

inline void Student::getDetails(){
    cout<<"Enter Student's name :- ";
```

```cpp
    cin>>name;
    cout<<"Enter Student's roll no. :- ";
    cin>>rno;
    cout<<"Enter Student's class :- ";
    cin>>cls;
    cout<<"Enter Student's division :- ";
    cin>>div;
    cout<<"Enter Student's date of birth :
- ";
    cin>>dob;
    cout<<"Enter Student's blood group :-
";
    cin>>bldgrp;
    try{
    cout<<"Enter Student's mobile no. :- "
;
    cin>>mobn;
    if(strlen(mobn)!=10) throw mobn;
    }
    catch(char *){
        cout<<"Invalid mobile number"<<"\n"
;
        mobn = "--Null--";
    }
    cout<<"Enter Student's address :- ";
    cin>>add;
```

```cpp
    cout<<"Enter Student's marks in subject 1 :- ";
    cin>>m1;
    cout<<"Enter Student's marks in subject 2 :- ";
    cin>>m2;
    cout<<"Enter Student's marks in subject 3 :- ";
    cin>>m3;
    cout<<"Enter Student's marks in subject 4 :- ";
    cin>>m4;
    cout<<"Enter Student's marks in subject 5 :- ";
    cin>>m5;
    return;
}

inline void Student::display(){
    cout<<"Student name :- "<<name<<"\n";
    cout<<"Student roll no. :- "<<rno<<"\n";
    cout<<"Student class :- "<<cls<<"\n";
    cout<<"Student division :- "<<div<<"\n";
```

```cpp
    cout<<"Student date of birth :- "<<dob
<<"\n";
    cout<<"Student blood group :- "<<bldgr
p<<"\n";
    cout<<"Student mobile no. :- "<<mobn<<
"\n";
    cout<<"Student address :- "<<add<<"\n"
;
    cout<<"Student marks in subject 1 :- "
<<m1<<"\n";
    cout<<"Student marks in subject 2 :- "
<<m2<<"\n";
    cout<<"Student marks in subject 3 :- "
<<m3<<"\n";
    cout<<"Student marks in subject 4 :- "
<<m4<<"\n";
    cout<<"Student marks in subject 5 :- "
<<m5<<"\n";
    return;
}

void Student::Counter(){
    count++;
    return ;
}
```

```cpp
Student::~Student(){
    delete name;
    delete rno;
    delete cls;
    delete div;
    delete dob;
    delete bldgrp;
    delete mobn;
    delete add;
}

int main(){

    //Student 1
    Student s1;

    cout<<"Enter Student 1 details - "<<"\
n";
    s1.getDetails();

    //Student 2 & 3
    cout<<"\n"<<"Enter Student 2 details -
 "<<"\n";
    char *name,*rno,*cls,*div,*dob,*bldgrp
,*mobn,*add;
    int m1,m2,m3,m4,m5;
```

```cpp
    name = new char;
    cout<<"Enter Student's name :- ";
    cin>>name;
    rno = new char;
    cout<<"Enter Student's roll no. :- ";
    cin>>rno;
    cls = new char;
    cout<<"Enter Student's class :- ";
    cin>>cls;
    div = new char;
    cout<<"Enter Student's division :- ";
    cin>>div;
    dob = new char;
    cout<<"Enter Student's date of birth :- ";
    cin>>dob;
    bldgrp = new char;
    cout<<"Enter Student's blood group :- ";
    cin>>bldgrp;
    mobn = new char;
    cout<<"Enter Student's mobile no. :- ";
    cin>>mobn;
    add = new char;
    cout<<"Enter Student's address :- ";
```

```cpp
    cin>>add;
    cout<<"Enter Student's marks in subjec
t 1 :- ";
    cin>>m1;
    cout<<"Enter Student's marks in subjec
t 2 :- ";
    cin>>m2;
    cout<<"Enter Student's marks in subjec
t 3 :- ";
    cin>>m3;
    cout<<"Enter Student's marks in subjec
t 4 :- ";
    cin>>m4;
    cout<<"Enter Student's marks in subjec
t 5 :- ";
    cin>>m5;

    Student s2(name,rno,cls,div,dob,bldgrp
,mobn,add,m1,m2,m3,m4,m5),s3(s2);

    // Result object
    Result r1;

    //Displaying details
    cout<<"\n"<<"-----Student 1 details---
--"<<"\n";
```

```cpp
    s1.display();
    r1.calPercentage(s1);
    cout<<"\n";
    cout<<"-----Student 2 details-----
"<<"\n";
    s2.display();
    r1.calPercentage(s2);
    cout<<"\n";
    cout<<"-----Student 3 details-----
"<<"\n";
    s3.display();
    r1.calPercentage(s3);
    cout<<"\n";
    cout<<"-
> Total "<<s1.count<<" number of students
are present"<<"\n";
    return 0;
}
```

Output

➔ Case 1: -

Enter Student 1 details -

Enter Student's name :- Test

Enter Student's roll no. :- 1

Enter Student's class :- SE

Enter Student's division :- Comp

Enter Student's date of birth :- 25/04/2002

Enter Student's blood group :- AB+

Enter Student's mobile no. :- 9876543210

Enter Student's address :- Mumbai

Enter Student's marks in subject 1 :- 10

Enter Student's marks in subject 2 :- 20

Enter Student's marks in subject 3 :- 30

Enter Student's marks in subject 4 :- 40

Enter Student's marks in subject 5 :- 50

Enter Student 2 details -

Enter Student's name :- Demo

Enter Student's roll no. :- 2

Enter Student's class :- TE

Enter Student's division :- EnTC

Enter Student's date of birth :- 15.09.2021

Enter Student's blood group :- O+

Enter Student's mobile no. :- 0123456789

Enter Student's address :- Pune

Enter Student's marks in subject 1 :- 12

Enter Student's marks in subject 2 :- 25

Enter Student's marks in subject 3 :- 36

Enter Student's marks in subject 4 :- 44

Enter Student's marks in subject 5 :- 50

-----Student 1 details-----

Student name :- Test

Student roll no. :- 1

Student class :- SE

Student division :- Comp

Student date of birth :- 25/04/2002

Student blood group :- AB+

Student mobile no. :- 9876543210

Student address :- Mumbai

Student marks in subject 1 :- 10

Student marks in subject 2 :- 20

Student marks in subject 3 :- 30

Student marks in subject 4 :- 40

Student marks in subject 5 :- 50

Roll number 1 got 60 percentage

-----Student 2 details-----

Student name :- Demo

Student roll no. :- 2

Student class :- TE

Student division :- EnTC

Student date of birth :- 15.09.2021

Student blood group :- O+

Student mobile no. :- 0123456789

Student address :- Pune

Student marks in subject 1 :- 12

Student marks in subject 2 :- 25

Student marks in subject 3 :- 36

Student marks in subject 4 :- 44

Student marks in subject 5 :- 50

Roll number 2 got 64.8 percentage

-----Student 3 details-----

Student name :- Demo

Student roll no. :- 2

Student class :- TE

Student division :- EnTC

Student date of birth :- 15.09.2021

Student blood group :- O+

Student mobile no. :- 0123456789

Student address :- Pune

Student marks in subject 1 :- 12

Student marks in subject 2 :- 25

Student marks in subject 3 :- 36

Student marks in subject 4 :- 44

Student marks in subject 5 :- 50

Roll number 2 got 66.8 percentage

-> Total 3 number of students are present


```
~~~~~~~~~~
Enter Student 1 details -
Enter Student's name :- Test
Enter Student's roll no. :- 1
Enter Student's class :- SE
Enter Student's division :- Comp
Enter Student's date of birth :- 25/04/2002
Enter Student's blood group :- AB+
Enter Student's mobile no. :- 9876543210
Enter Student's address :- Mumbai
Enter Student's marks in subject 1 :- 10
Enter Student's marks in subject 2 :- 20
Enter Student's marks in subject 3 :- 30
Enter Student's marks in subject 4 :- 40
Enter Student's marks in subject 5 :- 50

Enter Student 2 details -
Enter Student's name :- Demo
Enter Student's roll no. :- 2
Enter Student's class :- TE
Enter Student's division :- EnTC
Enter Student's date of birth :- 15.09.2021
Enter Student's blood group :- O+
Enter Student's mobile no. :- 0123456789
Enter Student's address :- Pune
Enter Student's marks in subject 1 :- 12
Enter Student's marks in subject 2 :- 25
Enter Student's marks in subject 3 :- 36
Enter Student's marks in subject 4 :- 44
Enter Student's marks in subject 5 :- 50
```

```
-----Student 1 details-----
Student name :- Test
Student roll no. :- 1
Student class :- SE
Student division :- Comp
Student date of birth :- 25/04/2002
Student blood group :- AB+
Student mobile no. :- 9876543210
Student address :- Mumbai
Student marks in subject 1 :- 10
Student marks in subject 2 :- 20
Student marks in subject 3 :- 30
Student marks in subject 4 :- 40
Student marks in subject 5 :- 50

Roll number 1 got 60 percentage

-----Student 2 details-----
Student name :- Demo
Student roll no. :- 2
Student class :- TE
Student division :- EnTC
Student date of birth :- 15.09.2021
Student blood group :- O+
Student mobile no. :- 0123456789
Student address :- Pune
Student marks in subject 1 :- 12
Student marks in subject 2 :- 25
Student marks in subject 3 :- 36
Student marks in subject 4 :- 44
Student marks in subject 5 :- 50
```

```
-----Student 3 details-----
Student name :- Demo
Student roll no. :- 2
Student class :- TE
Student division :- EnTC
Student date of birth :- 15.09.2021
Student blood group :- O+
Student mobile no. :- 0123456789
Student address :- Pune
Student marks in subject 1 :- 12
Student marks in subject 2 :- 25
Student marks in subject 3 :- 36
Student marks in subject 4 :- 44
Student marks in subject 5 :- 50

Roll number 2 got 66.8 percentage

-> Total 3 number of students are present
```

➔ Case 2 :-
  Enter Student 1 details -
  Enter Student's name :- Test
  Enter Student's roll no. :- 1
  Enter Student's class :- SE
  Enter Student's division :- Comp
  Enter Student's date of birth :- 25/04/2002
  Enter Student's blood group :- AB+
  Enter Student's mobile no. :- 98
  Invalid mobile number
  Enter Student's address :- Mumbai
  Enter Student's marks in subject 1 :- 10
  Enter Student's marks in subject 2 :- 20
  Enter Student's marks in subject 3 :- 30
  Enter Student's marks in subject 4 :- 40
  Enter Student's marks in subject 5 :- 50

Enter Student 2 details -
Enter Student's name :- Demo
Enter Student's roll no. :- 2
Enter Student's class :- BE
Enter Student's division :- EnTC
Enter Student's date of birth :- 15.09.2021
Enter Student's blood group :- O-
Enter Student's mobile no. :- 0123456789
Enter Student's address :- Pune
Enter Student's marks in subject 1 :- 12
Enter Student's marks in subject 2 :- 21
Enter Student's marks in subject 3 :- 35
Enter Student's marks in subject 4 :- 44
Enter Student's marks in subject 5 :- 50

-----Student 1 details-----
Student name :- Test
Student roll no. :- 1
Student class :- SE
Student division :- Comp
Student date of birth :- 25/04/2002
Student blood group :- AB+
Student mobile no. :- --Null--
Student address :- Mumbai
Student marks in subject 1 :- 10
Student marks in subject 2 :- 20
Student marks in subject 3 :- 30
Student marks in subject 4 :- 40
Student marks in subject 5 :- 50

Roll number 1 got 60 percentage

-----Student 2 details-----

Student name :- Demo

Student roll no. :- 2

Student class :- BE

Student division :- EnTC

Student date of birth :- 15.09.2021

Student blood group :- O-

Student mobile no. :- 0123456789

Student address :- Pune

Student marks in subject 1 :- 12

Student marks in subject 2 :- 21

Student marks in subject 3 :- 35

Student marks in subject 4 :- 44

Student marks in subject 5 :- 50

Roll number 2 got 64.8 percentage

-----Student 3 details-----

Student name :- Demo

Student roll no. :- 2

Student class :- BE

Student division :- EnTC

Student date of birth :- 15.09.2021

Student blood group :- O-

Student mobile no. :- 0123456789

Student address :- Pune

Student marks in subject 1 :- 12

Student marks in subject 2 :- 21

Student marks in subject 3 :- 35

Student marks in subject 4 :- 44

Student marks in subject 5 :- 50

Roll number 2 got 64.8 percentage

-> Total 3 number of students are present

```
                ^~~~~~~~~~
Enter Student 1 details -
Enter Student's name :- Test
Enter Student's roll no. :- 1
Enter Student's class :- SE
Enter Student's division :- Comp
Enter Student's date of birth :- 25/04/2002
Enter Student's blood group :- AB+
Enter Student's mobile no. :- 98
Invalid mobile number
Enter Student's address :- Mumbai
Enter Student's marks in subject 1 :- 10
Enter Student's marks in subject 2 :- 20
Enter Student's marks in subject 3 :- 30
Enter Student's marks in subject 4 :- 40
Enter Student's marks in subject 5 :- 50

Enter Student 2 details -
Enter Student's name :- Demo
Enter Student's roll no. :- 2
Enter Student's class :- BE
Enter Student's division :- EnTC
Enter Student's date of birth :- 15.09.2021
Enter Student's blood group :- O-
Enter Student's mobile no. :- 0123456789
Enter Student's address :- Pune
Enter Student's marks in subject 1 :- 12
Enter Student's marks in subject 2 :- 21
Enter Student's marks in subject 3 :- 35
Enter Student's marks in subject 4 :- 44
Enter Student's marks in subject 5 :- 50
```

```
-----Student 1 details-----
Student name :- Test
Student roll no. :- 1
Student class :- SE
Student division :- Comp
Student date of birth :- 25/04/2002
Student blood group :- AB+
Student mobile no. :- --Null--
Student address :- Mumbai
Student marks in subject 1 :- 10
Student marks in subject 2 :- 20
Student marks in subject 3 :- 30
Student marks in subject 4 :- 40
Student marks in subject 5 :- 50

Roll number 1 got 60 percentage

-----Student 2 details-----
Student name :- Demo
Student roll no. :- 2
Student class :- BE
Student division :- EnTC
Student date of birth :- 15.09.2021
Student blood group :- O-
Student mobile no. :- 0123456789
Student address :- Pune
Student marks in subject 1 :- 12
Student marks in subject 2 :- 21
Student marks in subject 3 :- 35
Student marks in subject 4 :- 44
```

```
Roll number 2 got 64.8 percentage

-----Student 3 details-----
Student name :- Demo
Student roll no. :- 2
Student class :- BE
Student division :- EnTC
Student date of birth :- 15.09.2021
Student blood group :- O-
Student mobile no. :- 0123456789
Student address :- Pune
Student marks in subject 1 :- 12
Student marks in subject 2 :- 21
Student marks in subject 3 :- 35
Student marks in subject 4 :- 44
Student marks in subject 5 :- 50

Roll number 2 got 64.8 percentage

-> Total 3 number of students are present
```