EXPERIMENT 4

① Write a program two numbers from same class using object as function argument. Write swap function as member function

② Write a program to swap two numbers from class using concept of friend function.

③ Write a program to swap two numbers from different class using concept of friend function.

④ Write a program to create two classes Result 1 & result 2 which stores the marks of students. Read the value of a marks for both class objects & compute the avg of 2 results.

⑤ Write a program to find the greatest number among 2 numbers from two different classes using friend function.

①
```
#include<iostream>
using namespace std;
class Number
{
int num;
public:
void accept()
{
cout << "Enter number :";
cin >> num;
```

```
};
void display()
{
cout << "Number: " << num << endl;
}
void swap (Number & obj)
{
int temp = num;
num = obj.num;
obj.num = temp;
}
};
int main()
{
Number n1, n2;
cout << "Enter first number:" << endl;
n1.accept();
n1.swap(n2);
cout << "\n After swap:" << endl;
cout << "First";
n1.display();
cout << "second";
n2.display();
return 0;
}
```

Output :

```
Enter first number:
enter number: 6
Enter second number:
enter number: 9
```

After swap:
first number: 9
second number: 6

(2)

```
#include<iostream>
using namespace std;
class temp
{
 int x,y,q;
public:
void accept()
{
cout<<"Enter two numbers:";
 cin>>x>>y;
}
void display()
{
cout<<"After swap x is:"<<x;
cout<<"After swap y is:"<<y;
}
friend void swap (temp &t);
};
void swap (temp &t)
{
 t.q =t.x;
 t.x = t.y;
 t.y = t.q;
}
int main()
{
temp t;
```

```
t1.accept();
swap(t1);
t1.display();
return 0;
}
```

Output:

```
Enter two numbers: 9
6
After swap x is: 6
After swap y is: 9
```

③

```
#include<iostream>
using namespace std;
class B;
class A
{
int numA;
public:
void accept()
{
cout<<"Enter number A:";
cin>>numA;
}
void display()
{
cout<<"Number A = "<<numA<<endl;
}
friend void swapNumbers(A&, B&);
};
class B
```

```
{
int numB;
public:
void accept()
{
cout<<" Enter number B: ";
cin>>numB;
}
void display()
{
cout<<"Number A =" << numB << endl;
}
friend void swapnumbers(A&, B&);
};
void swapNumbers(A&a, B&b)
{
int temp = a.numA;
 a.numA = b.numB;
 b.numB = temp;
}
int main()
{
Ac1;
Bd1;
c1.accept();
d1.accept();
swapnumbers(c1, d1);
cout<<"\n After swapping:"<<endl;
c1.display();
d1.display();
return 0;
}
```

Output:
Enter number A: 67
Enter number B: 89
After swapping:
Number A = 89
Number B = 67

(4)
```
#include<iostream>
using namespace std;
class result2;
class result 1
{
int a;
public:
void accept()
{
cout<<"Enter marks out of 50:";
cin>>a;
}
friend void cal(result r1, result r2);
};
class result2
{
int b;
public:
void accept()
{
cout<<"Enter marks out of 50:";
cin>>b;
}
friend void cal(result1 r1, result 2 r2);
};
```

```
void cal (Result1 r1, result2 r2)
{
float cal (Result1 r1, r
float avg = (float) (r1.a + r2.b) /2;
cout << "\n average : " << avg;
}
int main()
{
Result 1 x;
Result 2 y;
x.accept ();
y.accept ();
cal (x,y);
}
```

Output :

```
Enter marks out of 50 : 45
Enter marks out of 50 : 46
Average = 45.5
```

(5)

```
#include<iostream>
using namespace std;
class B;
class A
{
int a;
public:
void accept ()
{
cout << "Enter a value : ";
cin >> a;
}
```

```
friend void greater(A a1, B b1);
};
class B
{
 int b;
public:
void accept()
{
cout << "Enter a value:";
  cin >> b;
}
friend void greater (A a1, B b1)
};
void greater(A a1, B b1)
{
if (a1.a > b1.b)
{
cout << "First value is greater";
}
else
{
cout<<" Second value is greater";
}
}
int main()
{
A x;
B y;
x.accept();
y.accept();
greater (x,y);  return 0;
 }
```

x ——— x ——— x