

Q1
1. #include <iostream>
using namespace std;
void reverse(string str) {
 int i, n;
 n = str.length() - 1;
 i = 0;
 if (n <= i) {
 return;
 }
 swap(str[i], str[n]);
 reverse(str);
}

2. int main() {
 string str1;
 cout << "Enter any string: " << endl;
 cin >> str1;

 reverse(str1);
 cout << "Input: " << str1 << endl;

 reverse(str1);
 cout << "Output: " << str1 << endl;

 return 0;
}

Q3

```
#include <iostream>
using namespace std;
```

```
template <typename Y>
```

```
void average (Y arr[])
```

```
{
```

```
    Y avg;
```

```
    avg = 0;
```

```
    int n;
```

~~```
 for (int i=0; i<sizeof(arr); i++)
```~~~~```
        avg = avg + arr[i];
```~~

```
    n = sizeof(arr) / sizeof(arr[0]);
```

~~```
 for (int i=0; i<n; i++)
```~~

```
}
```

~~```
    avg = avg + arr[i];
```~~~~```
 avg = avg / n;
```~~

```
cout << "Average of entered array is " << avg << endl;
```

```
int main()
```

```
{
```

```
 int a[] = {1, 2, 3, 4};
```

```
 long b[] = {2, 8, 9, 1000};
```

```
 double c[] = {1.2, 3.428, 4.69, 3.01};
```

```
 char d[] = {a, b, c, d};
```

```
 average (a[]);
```

```
 average (b[]);
```

```
 average (c[]);
```

```
 average (d[]);
```

return 0;  
}

Q5  
① #include <iostream>  
#include <fstream>  
#include <cstring>  
using namespace std;

② class A{

public:  
long long int num;  
char name[20];  
};

fstream fp;

A st;

void first() {  
fp.open ("Employee.txt", ios::out | ios::binary | ios::app);  
char ch='y';  
while (ch=='y') {  
cout << "Enter name of employee : ";  
cin >> st.name;  
cout << "Enter employee ID : ";  
cin >> st.num;  
cout << endl;

fp.write ((char \*) &st, sizeof(st));

cout

cout << "Do you want to continue (y/n) : ";

cin >> ch;

cout << endl;

y

fp.close();

}

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void second() {

```
fp.open("Employee.txt", ios::in | ios::binary);
while (fp.read((char*)&st, sizeof(st))) {
 cout << "Employee Name: " << st.name << endl;
 cout << "Employee ID: " << st.num << endl;
 cout << endl;
}
```

fp.close();

}

void fourth() {

```
fp.open("Employee.txt", ios::out | ios::in | ios::binary);
char a[20];
```

int clk = 0;

cout << "Enter employee name: " << endl;

cin >> a;

cout << endl;

```
while (fp.read((char*)&st, sizeof(st)))
```

{

```
if (strcmp(st.name, a) == 0)
```

{

cout << "Employee Name: " << st.name << endl;

cout << "Employee ID: " << st.num << endl;

clk = 1;

}

fp.close();

```
if (clk == 0)
```

cout << "Data not found";

}

}

fp.open("Employee.txt", ios::binary | ios::in | ios::out);

fp.seekg(0);

long long int a;

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```

int clk=0;
cout << "Enter employee ID : ";
cin >> a;
while (fp.read((char*)&st, sizeof(st)))
{
 if (st.num == a)
 {
 cout << "Employee name: " << st.name << endl;
 cout << "Emp. ID ID: " << st.num << endl;
 clk = 1;
 cout << "Enter new data to update " << endl;
 cout << "Enter Employee name: ";
 cin >> st.name;
 cout << "Enter emp. ID: ";
 cin >> st.num;
 fp.seekp (-sizeof(st), ios::cur);
 fp.write((char*)&st, sizeof(st));
 }
}
fp.close();
if (clk == 0)
{
 cout << "Data not found";
}
fp.close();

```

```

int main()
{
```

```

 int choice;
 while (1)
 {
 cout << "**** Employee Info ****";
 cout << "1) Add new Record \n";
 cout << "2) Display All Records \n";
 cout << "3) Search Record by Name \n";
 cout << "4) Update Record by ID. \n";
 }
}
```

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```
cout << "6) Exit";
cout << "\n\n Enter your choice : ";
cin >> choice;
switch (choice)
{
```

case 1:

```
first();
break;
```

case 2:

```
second();
break;
```

case 4 :

```
fourth();
break;
```

case 5

```
fifth();
break;
```

case 6

```
exit(0);
```

default:

```
cout << "Invalid";
```

}  
return 0;

#include <iostream>

using namespace std;

class A;

class B {

public:

```
void display(A obj); };
```

```

class A
{
 int x;
public:
 A()
 {
 x = 41;
 }
 friend void B :: display(A);
};

void B :: display(A obj)
{
 cout << obj.x << endl;
}

int main()
{
 A obj1;
 B obj2;
 obj2.display(obj1);
 return 0;
}

```

Q 64

```

#include <iostream>
#include <map>
using namespace std;

```

```

int main()
{
 map<int, int> m; // in this code pos = Stud ID
 // and name = Name of student
 while (1) {
 int choice;
 cout << "1) Insert record ";
 cout << "2) Delete record ";
 cout << "3) modify record in map ";
 cout << "4) display record by key ";

```

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~~cout << "5) exit";~~

~~else if (choice == 6)~~

\* cout << "Enter your choice : ";

cin >> choice;

switch (choice)

{

case 1:

int pos; string name;

cout << "Enter name to enter:";

cin >> name;

~~cout << "Enter position:";~~

cout << "Enter position:";

cin >> pos;

m.insert (pair<int, string>(pos, name));

break;

~~case 2:~~

~~cout << "Deleting record from map";~~

~~map<int, int> :: iterator it1;~~

~~for (it1 = m.begin(); it1 != m.end(); it1++)~~

~~cout~~

~~case 2:~~

~~int pos = 0;~~

~~cout << "Enter position to delete record:";~~

~~cin >> pos;~~

~~m.erase (pos);~~

~~break;~~

~~case 3:~~

~~int pos; string name;~~

~~cout << "Enter position to modify:";~~

~~cin >> pos;~~

```
m.erase(pos);
```

⑧

```
cout << "Enter record to modify : ";
cin >> name;
```

```
m.insert (pair<int, string>(pos, name));
break (pos & ch, int) (pos, name));
break;
```

case 4 :

```
cout << "Displaying record by key ";
int pos = 0;
cout << "Enter position to display record: ";
cin >> pos;
m.find (pos);
```

case 5 :

~~break (pos)~~

```
exit (0);
```

default :

```
cout << "Invalid ";
```

3

3

```
return 0;
```

3

Q2  
#include <iostream>  
#include <cstring>  
using namespace std;

```
class library {
```

public:

```
string book_name [];
int price [];
```

};

Date: / /  
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class book : public library {  
int page - num ;  
};

class recording : public library {  
public :  
int rec ;  
};