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FDS Assignment No. 9

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#include <iostream>

using namespace std;

class myclass

{

public:

int a[20], n, i, rollno;

void input();

void linear();

void binary();

};

void myclass::input()

{

cout << "Enter the number of student present in class:" << endl;

cin >> n;

cout << "Enter roll number of student:" << endl;

for (i = 0; i < n; i++)

{

cin >> a[i];

cout << endl;

}

}

void myclass::linear()

{

cout << "Enter the roll number of student to find" << endl;

cin >> rollno;

for (i = 0; i < n; i++)

{

if (rollno == a[i])

{

cout << "student is present at index " << i << endl;

break;

}

}

if (i == n)

{

cout << "student is absent" << endl;

}

}

void myclass::binary()

{

int L = 0, H = n - 1, M;

cout << "enter the roll number of student to find" << endl;

cin >> rollno;

do

{

M = (L + H) / 2;

if (rollno == a[M])

{

cout << "student is present" << endl;

break;

}

else if (rollno > a[M])

{

L = M + 1;

}

else

{

H = M - 1;

}

} while (L <= H);

if (L > H)

{

cout << "student is absent" << endl;

}

}

int main()

{

int ch;

myclass ob;

while (1)

{

cout << "1.Linear search" << endl;

cout << "2.Binary search" << endl;

cout << "enter your choice" << endl;

cin >> ch;

switch (ch)

{

case 1:

ob.input();

ob.linear();

break;

case 2:

ob.input();

ob.binary();

break;

}

}

}