Pratical 8

#include <iostream>

using namespace std;

struct node

{

int roll;

struct node \*next;

};

class info

{

node \*head1 = NULL, \*temp1 = NULL, \*head2 = NULL, \*temp2 = NULL, \*head =

NULL, \*temp = NULL, \*h1 = NULL, \*head3 = NULL, \*temp3 = NULL;

int c, i, f, j, k;

public:

node \*create();

void insert();

void allstud();

void vanila();

void butters();

void uice();

void nice();

void notice();

void ovanila();

void obutters();

void display();

};

node \*info::create()

{

node \*p = new (struct node);

cout << "Enter student rollno: ";

cin >> c;

p->roll = c;

p->next = NULL;

return p;

}

void info::insert()

{

node \*p = create();

if (head == NULL)

{

head = p;

}

else

{

temp = head;

while (temp->next != NULL)

{

temp = temp->next;

}

temp->next = p;

}

}

void info::display()

{

temp = head;

while (temp->next != NULL)

{

cout << "\n"

<< temp->roll;

temp = temp->next;

}

cout << "\n"

<< temp->roll;

}

void info::allstud()

{

cout << "Enter no. of students: ";

cin >> k;

head = NULL;

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

{

insert();

h1 = head;

}

display();

head = NULL;

}

void info::vanila()

{

cout << "Enter no. of students who like vanila: ";

cin >> k;

head = NULL;

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

{

insert();

head1 = head;

}

display();

head = NULL;

}

void info::butters()

{

cout << "Enter no. of students who like butterscotch: ";

cin >> j;

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

{

insert();

head2 = head;

}

display();

head = NULL;

}

void info::uice()

{

cout << "Students who like vanila or butterscotch: \n";

temp1 = head1;

while (temp1 != NULL)

{

node \*p = new (struct node);

p->roll = temp1->roll;

p->next = NULL;

if (head3 == NULL)

{

head3 = p;

}

else

{

temp3 = head3;

while (temp3->next != NULL)

{

temp3 = temp3->next;

}

temp3->next = p;

}

temp1 = temp1->next;

}

temp2 = head2;

while (temp2 != NULL)

{

f = 0;

temp1 = head1;

while (temp1 != NULL)

{

if (temp2->roll == temp1->roll)

{

f = 1;

}

temp1 = temp1->next;

}

if (f == 0)

{

node \*p = new (struct node);

p->roll = temp2->roll;

p->next = NULL;

if (head3 == NULL)

{

head3 = p;

}

else

{

temp3 = head3;

while (temp3->next != NULL)

{

temp3 = temp3->next;

}

temp3->next = p;

}

}

temp2 = temp2->next;

}

temp3 = head3;

while (temp3->next != NULL)

{

cout << "\n"

<< temp3->roll;

temp3 = temp3->next;

}

cout << "\n"

<< temp3->roll;

}

void info::ovanila()

{

cout << "\nStudents like only vanila: \n";

temp1 = head1;

while (temp1 != NULL)

{

temp2 = head2;

f = 0;

while (temp2 != NULL)

{

if (temp1->roll == temp2->roll)

{

f = 1;

}

temp2 = temp2->next;

}

if (f == 0)

{

cout << "\n"

<< temp1->roll;

}

temp1 = temp1->next;

}

}

void info::obutters()

{

cout << "\nStudents like only butterscotch: \n";

temp2 = head2;

while (temp2 != NULL)

{

temp1 = head1;

f = 0;

while (temp1 != NULL)

{

if (temp2->roll == temp1->roll)

{

f = 1;

}

temp1 = temp1->next;

}

if (f == 0)

{

cout << "\n"

<< temp2->roll;

}

temp2 = temp2->next;

}

}

void info::nice()

{

cout << "\nStudents who like both vanila and butterscotch: \n";

temp1 = head1;

while (temp1 != NULL)

{

temp2 = head2;

while (temp2 != NULL)

{

if (temp1->roll == temp2->roll)

{

cout << "\n"

<< temp1->roll;

}

temp2 = temp2->next;

}

temp1 = temp1->next;

}

}

void info::notice()

{

cout << "\nStudents who like neither vanila nor butterscotch: \n";

temp = h1;

while (temp != NULL)

{

temp3 = head3;

f = 0;

while (temp3 != NULL)

{

if (temp->roll == temp3->roll)

{

f = 1;

}

temp3 = temp3->next;

}

if (f == 0)

{

cout << "\n"

<< temp->roll;

}

temp = temp->next;

}

}

int main()

{

info s;

int i;

char ch;

do

{

cout << "\n 1. To enter all students rollno ";

cout << "\n 2. To enter the rollno of student who like vanila";

cout << "\n 3. To enter the rollno of student who like butterscotch";

cout << "\n 4. To display the rollno of student who like vanila or butterscotch";

cout << "\n 5. To display the rollno of student who like only vanila";

cout << "\n 6. To display the rollno of student who like only butterscotch";

cout << "\n 7. To display the rollno of student who like both vanila and butterscotch ";

cout << "\n 8. To display the rollno of student who neither like vanila nor butterscotch";

cout << "\n Choice the options: ";

cin >> i;

switch (i)

{

case 1:

s.allstud();

break;

case 2:

s.vanila();

break;

case 3:

s.butters();

break;

case 4:

s.uice();

break;

case 5:

s.ovanila();

break;

case 6:

s.obutters();

break;

case 7:

s.nice();

break;

case 8:

s.notice();

break;

default:

cout << "\n unknown choice";

}

cout << "\n Do you want to continue enter y/Y \n";

cin >> ch;

} while (ch == 'y' || ch == 'Y');

return 0;

}

Output

