SOURCE CODE:

#include <iostream> using namespace std; class node{

public:

int data; node \*next; node(){

next = NULL;

}

node(int data){

this->data = data; this->next = NULL;

}

};

int setmaking(node \*head, int val){ node \*temp = new node;

temp = head; int index = 0;

while (temp != NULL){

if (temp->data == val){ return index;

}

index++;

temp = temp->next;

}

return -1;

}

void addingset(node \*&head, int val)

{

if (setmaking(head, val) == -1)

{

node \*temp = new node(); temp = head;

node \*newnode = new node(val); while (temp->next != NULL)

{

temp = temp->next;

}

temp->next = newnode;

}

}

void display(node \*head)

{

node \*temp = new node; temp = head;

while (temp != NULL)

{

cout << temp->data << " "; temp = temp->next;

}

cout << endl;

}

void inputing(node \*&head, string flavour)

{

int n, rollno;

cout << "ENTER THE NUMBERS OF STUDENTS WHO LIKE " << flavour << " ICECREAM:";

cin >> n;

cout << "ENTER ROLL.NO OF THAT STUDENT:" << endl;

cin >> rollno;

head = new node(rollno); for (int i = 1; i < n; i++)

{

cin >> rollno; addingset(head, rollno);

}

}

void set\_only\_one(node \*set1, node \*set2)

{

node \*temp = new node; temp = set1;

while (temp != NULL)

{

if (setmaking(set2, temp->data) == -1)

{

cout << temp->data << " ";

}

temp = temp->next;

}

node \*temp2 = new node; temp2 = set2;

while (temp2 != NULL)

{

if (setmaking(set1, temp2->data) == -1)

{

cout << temp2->data << " ";

}

temp2 = temp2->next;

}

cout << endl;

}

void intersection(node \*set1, node \*set2)

{

node \*temp = new node;

temp = set1;

while (temp != NULL)

{

if (setmaking(set2, temp->data) != -1)

{

cout << temp->data << " ";

}

temp = temp->next;

}

cout << endl;

}

int neithernor(node \*set1, node \*set2, int total)

{

int count = 0;

for (int i = 1; i <= total; i++)

{

if ((setmaking(set1, i) != -1) and (setmaking(set2, i) != -1))

{

count++;

}

}

return count;

}

int main()

{

node \*seta; node \*setb; int choice, t; bool i = true;

cout << "ENTER TOTAL NUMBER OF STUDENTS:";

cin >> t;

inputing(seta, "VANILLA"); inputing(setb, "BUTTERSCOTCH"); while (i)

{

cout << "1.DISPLAY UR DATA" << endl;

cout << "2. SET OF STUDENTS WHO LIKE BOTH VANILLA AND BUTTERSCOTCH ICECREAM" << endl;

cout << "3. SET OF STUDENTS WHO EITHER LIKE VANILLA OR BUTTERSCOTCH

,NOT BOTH" << endl;

cout << "4. SET OF STUDENTS WHO NEITHER LIKE VANILLA NOR BUTTERSCOTCH"

<< endl;

cout << "5. EXIT" << endl; cout << "ENTER YOUR CHOICE:";

cin >> choice; switch (choice)

{

case 1:

cout << "STUDENTS WHO LIKE VANILLA FLAVOUR ARE:";

display(seta);

cout << "STUDENTS WHO LIKE BUTTERSCOTCH FLAVOUR ARE: ";

display(setb); break;

case 2:

cout << "ROLL.NO OF STUDENTS WHO LIKE BOTH VANILLA AND BUTTERSCOTCH ICECREAM ARE: " << endl;

intersection(seta, setb); break;

case 3:

cout << "ROLL.NO OF STUDENTS WHO EITHER LIKE VANILLA OR BUTTERSCOTCH ,NOT BOTH" << endl;

set\_only\_one(seta, setb); break;

case 4:

cout << "SET OF STUDENTS WHO NEITHER LIKE VANILLA NOR BUTTERSCOTCH

ARE: " << neithernor(seta, setb, t) << endl; break;

case 5:

i = false; break;

default:

cout << "ENTER VALID CHOICE" << endl;

break;

}

}

return 0;

}

OUTPUT:



