#include<iostream>

#include<vector>

#include<algorithm>

#include<conio.h>

using namespace std;

int main(){

int n;

cout<<"Enter the number of users"<<endl;

cin>>n;

vector<double> arrival\_time(n);

vector<double> duration(n);

vector<double> completion(n);

cout<<"Enter the arrival time and durations of the packets: "<<endl;

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

cin>>arrival\_time[i]>>duration[i];

}

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

completion[i]=arrival\_time[i]+duration[i];

}

vector<int> count(n,0);

for(int i=1;i<n;i++){

int k=i;

while(k>0){

if((arrival\_time[k] >= arrival\_time[k-1]) && (arrival\_time[k]<=completion[k-1])){

count[k]=1;

count[k-1]=1;

}

k--;

}

}

int min\_time=arrival\_time[0];

int max\_time=completion[0];

cout<<"Collision between packets: "<<endl;

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

for(int j=i+1;j<n;j++){

if(count[i]==1 && count[j]==1){

cout<<i+1<<" "<<j+1<<" ";

cout<<"from time "<<max(arrival\_time[i],arrival\_time[j])<<" and "<<min(completion[i],completion[j])<<endl;

}

}

}

\_getch();

}

Output:

Enter the number of users

3

Enter the arrival time and durations of the packets:

0.5 2.5

1 1

1 3

Collision between packets:

1 2 from time 1 and 2

1 3 from time 1 and 3

2 3 from time 1 and 2

Enter the number of users

3

Enter the arrival time and durations of the packets:

0.5 2.5

1 1

3.7 1.3

Collision between packets:

1 2 from time 1 and 2