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#include <stdio.h>
#include <ctime>
#include <cstdlib>
#include <cstring>

#define MAX_VAL 10000

void genTest(char * fileName, int n, int S, int max_val);
void solve(char * inFile, char * outFile); // bai 1
void solve2(char * inFile, char * outFile); // bai 2: Day so Jolly
int col[100];
bool isChecked[100];
bool inSolution[100];
bool isLoop(int i);
void solve3(char * inFile, char * outFile); // bai 3: tap so chung

int main()
{
	//genTest("bai1inp1.txt", 1000, 120, 150);
	//solve("bai1inp1.txt", "bai1out1.txt");
	//solve2("jollyJumper.in", "bai2out.txt");
	solve3("bai2inp4.txt", "bai2out4.txt");
	return 0;
}

void solve(char * inFile, char * outFile)
{
	int * a;
	bool b[30000];
	int n, S;
	int i, j;
	FILE * fin = fopen(inFile, "rt");
	fscanf(fin, "%d %d", &n, &S);
	a = new int[n];
	memset(b, false, 30000);
	for(i=0;i<n;i++)
	{
		fscanf(fin, "%d", &a[i]);
		b[a[i]] = true;
	}

	fclose(fin);

	FILE * fout = fopen(outFile, "wt");
	// phan a
	for(i=0;i<n;i++)
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	{
		bool check = true;
		for(j=0;j<i;j++)
			if(a[j]==a[i])
			{
				check = false;
				break;
			}
		if(check)
			fprintf(fout, "%d ", a[i]);
	}
	fprintf(fout, "\n");
	// phan b
	for(i=0;i<n;i++)
		if(b[2*a[i]])
			fprintf(fout, "%d ", a[i]);
	fprintf(fout, "\n");
	// phan c
	for(i=0;i<n;i++)
	{
		bool check = false;
		for(j=i+1;j<n;j++)
			if(a[j]==S-a[i])
			{
				check = true;
				break;
			}
		if(check)
			fprintf(fout, "%d %d ", a[i], S-a[i]);
	}
	fclose(fout);
	delete [] a;
}
void solve2(char * inFile, char * outFile)
{
	int * a;
	bool b[3000];
	int n;
	int i, j;
	int count;
	FILE * fin = fopen(inFile, "rt");
	FILE * fout = fopen(outFile, "wt");
	while(true)
	{
		fscanf(fin, "%d", &n);
		if(n>0)
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		{
			a = new int[n];
			count = 0;
			memset(b, false, 3000);
			for(i=0;i<n;i++)
				fscanf(fin, "%d", &a[i]);
			for(i=0;i<n;i++)
				for(j=i+1;j<n;j++)
				{
					int tam = abs(a[j]-a[i]);
					if((tam>0)&&(tam<n)&&!b[tam])
					{
						b[tam] = true;
						count ++;
					}
				}
			if(count==(n-1))
				fprintf(fout,"Jolly\n");
			else
				fprintf(fout,"Not Jolly\n");
			delete [] a;
		}else
			break;
	}
	fclose(fin);
	fclose(fout);
}

bool isLoop(int i)
{
	int start = i;
	memset(isChecked, false, 100);
	while(true)
	{
		if(!isChecked[start])
		{
			isChecked[start] = true;
			start = col[start];
		}else
			break;
	}
	if(start==i)
		return true;
	return false;
}
```

```
void solve3(char * inFile, char * outFile)
{
	FILE * fin = fopen(inFile, "rt");
	FILE * fout = fopen(outFile, "wt");
	int n;
	int i;
	int count = 0;
	memset(inSolution, false, 100);
	fscanf(fin, "%d", &n);
	for(i=0;i<n;i++)
		fscanf(fin, "%d", &col[i+1]);
	fclose(fin);
	for(i=1;i<=n;i++)
	{
		inSolution[i] = isLoop(i);
		if(inSolution[i])
			count ++;
	}
	fprintf(fout, "%d\n", count);
	for(i=1;i<=n;i++)
		if(inSolution[i])
			fprintf(fout, "%d ", col[i]);
	fclose(fout);
}
void genTest(char * fileName, int n, int S, int max_val)
{
	// genTest("bai1inp1.txt", 1000, 300, 500);
	FILE * f = fopen(fileName, "wt");
	srand(time(NULL));
	fprintf(f, "%d %d\n", n, S);
	for(int i=0;i<n;i++)
		fprintf(f, "%d ", rand() % max_val);
	fclose(f);
}
```