**#include <bits/stdc++.h>**

**using namespace std;**

**long long max(long long num1, long long num2) {**

**if(num1 >= num2){**

**return num1;**

**}**

**return num2;**

**}**

**int countCows(vector<int>&vec, int val){**

**if(vec.empty()){**

**return 0;**

**}**

**int cnt = 1;**

**int prev = vec[0];**

**for(int i=1;i<vec.size();i++){**

**if(vec[i] - prev >= val) {**

**cnt++;**

**prev = vec[i];**

**}**

**}**

**return cnt;**

**}**

**int main() {**

**cout<<"Hello I am starting"<<endl;**

**/\* // Task to find sqrt of any number**

**long long number;**

**cout<<"Enter the number for which you need to find sqrt"<<endl;**

**cin>>number;**

**int start = 1, end = 1e9;**

**int ans = start;**

**while(start < end) {**

**int mid = (start + end)/2;**

**long long val = 1ll\*mid\*mid;**

**if(val <= number) {**

**ans = max(ans, mid);**

**start = mid + 1;**

**} else {**

**end = mid - 1;**

**}**

**}**

**cout<<"The decimal value is: "<<ans<<endl;**

**double startD = 0, endD = 1e9;**

**double ansD = startD;**

**while(startD < endD) {**

**double midD = (startD + endD)/2;**

**double val = midD \* midD;**

**if(val <= number) {**

**ansD = max(ansD, midD);**

**startD = midD + 1e-10;**

**} else {**

**endD = midD - 1e-10;**

**}**

**}**

**// Set pri**

**cout<<"The ans in floating points is: "<< fixed<<setprecision(10)<<ansD<<endl;**

**printf("%.10f", ansD);**

**\*/**

**// Aggresive cows**

**int numOfCows, numOfStalls;**

**cin>>numOfCows>>numOfStalls;**

**vector<int>positionOfStalls(numOfStalls);**

**for(int i=0; i<numOfStalls; i++){**

**cin>>positionOfStalls[i];**

**}**

**sort(positionOfStalls.begin(), positionOfStalls.end());**

**int lowerBound = positionOfStalls[numOfStalls - 1] - positionOfStalls[0];**

**int upperBound = lowerBound;**

**for(int i=1; i <numOfStalls;i++) {**

**lowerBound = min(lowerBound, positionOfStalls[i] - positionOfStalls[i-1]);**

**}**

**int ans = lowerBound;**

**while(lowerBound < upperBound) {**

**int mid = (upperBound + lowerBound)/2;**

**int numCows = countCows(positionOfStalls, mid);**

**if(numCows < numOfCows) {**

**upperBound = mid - 1;**

**} else {**

**ans = max(ans, mid);**

**lowerBound = mid + 1;**

**}**

**}**

**cout<<ans<<endl;**

**}**

**// n = 5 d = 10**

**// (1, 10), (4, 17), (6, 13), (8, 100), (100, 120)**