RAJALAKSHMI ENGINEERING COLLEGE

RAJALAKSHMI NAGAR, THANDALAM 602 105

CS23331 Design and Analysis of Algorithms

Laboratory Record Note Book

Name :

Year / Branch / Section :

University Register No. : ..

College Roll No. : .

Semester : .

Academic Year : .

RAJALAKSHMI ENGINEERING COLLEGE

An Autonomous Institution

BONAFIDE CERTIFICATE

Name: ………………………………………………………………………………

Academic Year: …………… Semester: …………… Branch: ………………

Register No.

Certified that this is the bonafide record of work done by the above student in

the..Laboratory

during the academic year 2025- 2026

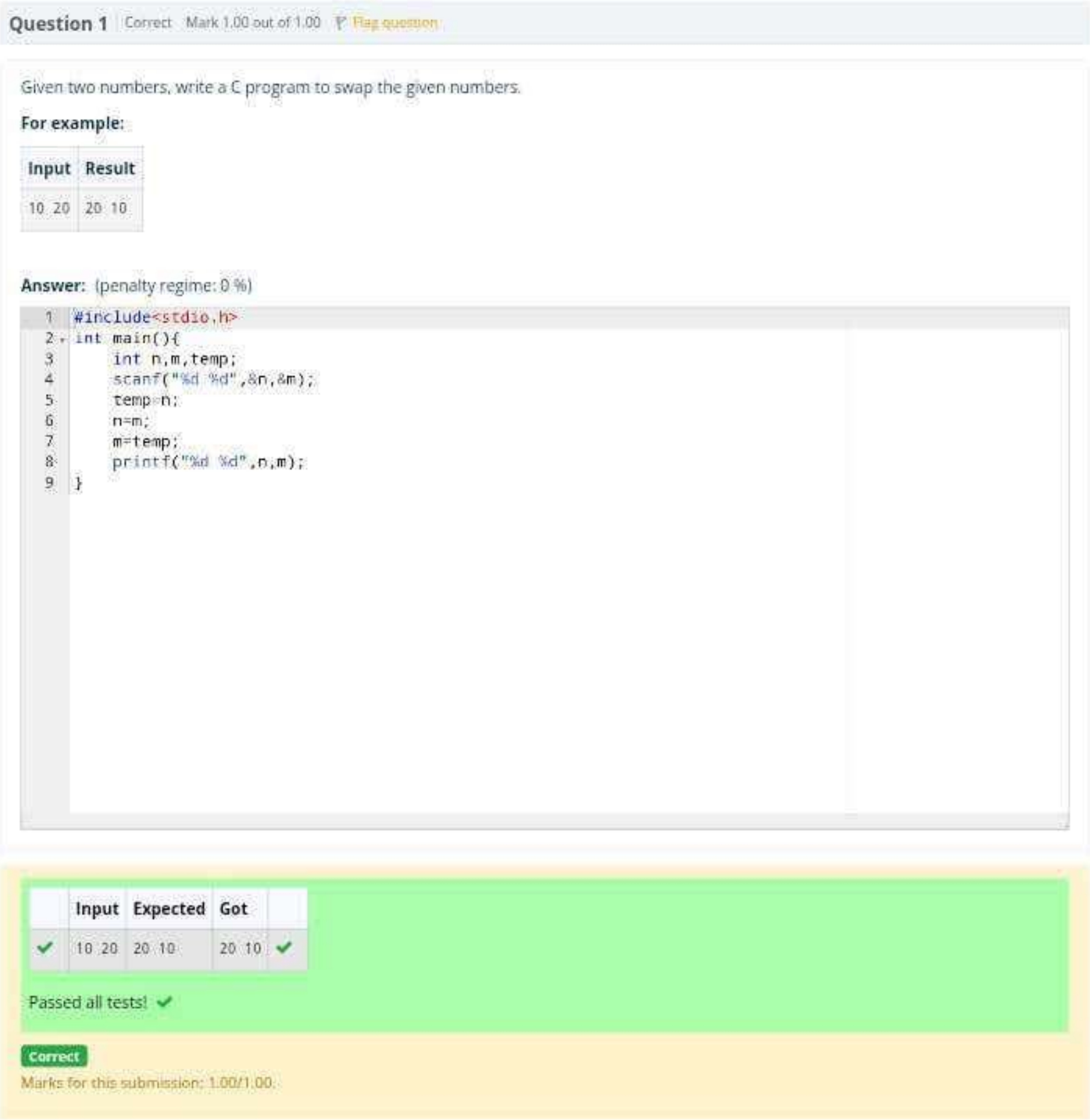
Signature of Faculty in-charge

Submitted for the Practical Examination held on……………………………

Internal Examiner

External Examiner

INDEX



Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given two numbers, write a C program to swap the given numbers.

For example:

Input	Result
10 20	20 10

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int n,m,temp;
    scanf("%d %d",&n,&m);
    temp=n;
    n=m;
    m=temp;
    printf("%d %d",n,m);
}
```

	Input	Expected	Got	
✓	10 20	20 10	20 10	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

Question 2 Correct Mark 1.00 out of 1.00 Flag question

Write a C.program to find the eligiLi:liry of a Missile for e prcifesstonal course dased on the follows++g criteria!

Marks in Maths >= 65

Marks in Physics >= 55

Marks in Chemistry >= 50

Total in all three subjects >= 180

TestCassl

7Ei 60 BO

Output

The candidate is eligib:c

Test Case 2

lnpu‹

50 80 B0

OutpuE

The candi aaie is eligib e

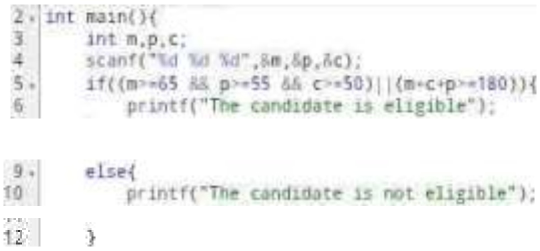
50 60 40

Output

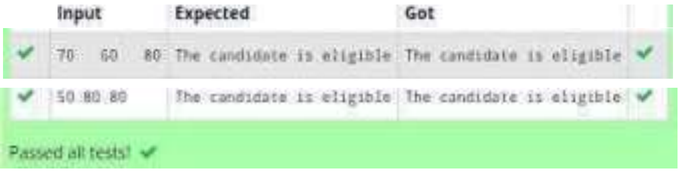
The candidate is not eligible

Answer: (penalty regime: 0 %)

```
1'.' %%nciu0?•stdio.h›
```



```
int main(){
    int m,p,c;
    scanf("%d %d %d",&m,&p,&c);
    if((m>=65 && p>=55 && c>=50)||(m+c+p>=180)){
        printf("The candidate is eligible");

    else{
        printf("The candidate is not eligible");

    }
```



	Input	Expected	Got	
✓	70 60 80	The candidate is eligible	The candidate is eligible	✓
✓	50 80 80	The candidate is eligible	The candidate is eligible	✓

Passed all tests! ✓

Question 3 Correct Mark 1.00 out of 1.00 Flag question

Mail'nl gces to BesrSave hyper ma4et to buygrnce¿'.iierns. Besr5âve nyper market p'rovides' fB%.discount on roe bill amotin^'Ei when eyer the bill amount B'is more.Wn Rs.2000.

The'bill'am'ciLin't B:is passed a>'tfie input'to the orogram. The p o@arii must gript'the fin'al a'mouitt A pa'yable b'y Mal›n‹.

Input Format

The first line denotes the value of B.

The first line contains the value of the final payable amount A.

mple Input/Outqur I :

Input:

•9DD

T900

Example Imput"C'utq¿r 2:

Input:

3000

2700

```
;,]:' 8EñtIwde<s.tdI’%.h•:
rnt main()[
    int n,m;
    scanf("%d",&n);
    if(n›2000}(

        n=n-m;
        printf("%d",n);
    )
    .else(

        printf("%d",n);
```

:fnput	E	éfitéd	Got	
✓	3000	2700	2700	✓

Question 4 Correct Mark 1.00 out of 1.00 Flag question

8aEa ¿ very fil d ts;b•.ggars and e ery'üay Baba.donat half oi the amount he fias•aitien ey.er a Wggar req;ests him. The mnrey M IeFt in 8aha's Hand.is'passea.as rie .npur an'd:che numGer:of.begggrs'.B who received :Ke a!ms are passed.as the.inpur Tfie prcgram musr.print' the 'm'o'rij;zy Baba'üa'd \n Ehe bäg|nFiJMg of é"day.

The first Fine denotes the value of M.
The second line denotes the value of B.

Ootpu Eohmat

The first line denotes the value of money with Baba in the beginning of the day.

f-ii**ample InputfÖutpüt:**

input:

' 0 ’ 0

400

.E›ütanaltan:.,.

8aEa 4g?ared to Mo.beggars. 5o wh'en fi'e e?cour.tered:seccnd beggar he' had 100‘? = Rs.?00 end when he encounter d 1st he I no:2OO‘2 = Rs.:40 .

Answer: (penalty regime: 0 %)

```
’’’’1’:’’|#0üCiü##'StAl0.,h
int main(){
    int m,n;
    scanf("%d %d",&m,&n);;
    int a,t;
    a=m*n;
    t=a*2;
    printf("%d",t);

}
```

Input	Expected	Got

Question 5 Correct Mark 1.00 out of 1.00 Flag question

The CCO of comparry ABC Inc warred łoencourage theemptoş'ees coming on time. to:theo.fficc. Sc' he omnciunced that for c'vcry consec drive dav'an employee worries on Lime'in a we-éŁ fstarri g'frcm k anoay to SatţJrdày), hé'wIII be Warded Rsú00 more *hän the previôus.day aś "Punctu,l›ry IncëntŃe™. The incén e I tõr the starting day (iÄ'on Mondayj is passed as rhe ifiout to thîe progräm. The ńúḿber of days N õń emplc^/ee came en hrŢie consecutively:sLarting from k1önday Is also p-asseĉî as rŁtc inp c The pţg°ram must calculate and print the "Púnctu'aliÇ IncenMe" P of Łhe.employee:

lMpu&Formmz:

Th fsi Ill+e üćnöüs the väiue of I.
Thé s'econ'd I ne öeńóïeś the value of'łd.

Output Format:

Tfie firsţ IIne denoŁes D+e value öf P,

Example Input/Output:

Inpuc:

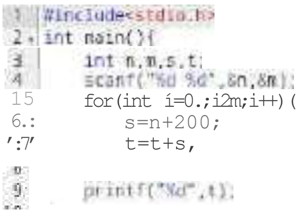
500

Exqlań'äti :

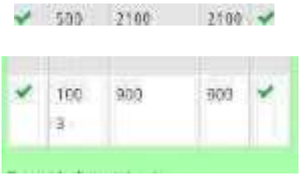
.On .Monday'rÜê êmplöy'ge' reLëiveş Rs.500. on Tuësóaÿ.Rs.70Ô, of We'dnesday Rś.9.LO

5ofotal=Rr210$

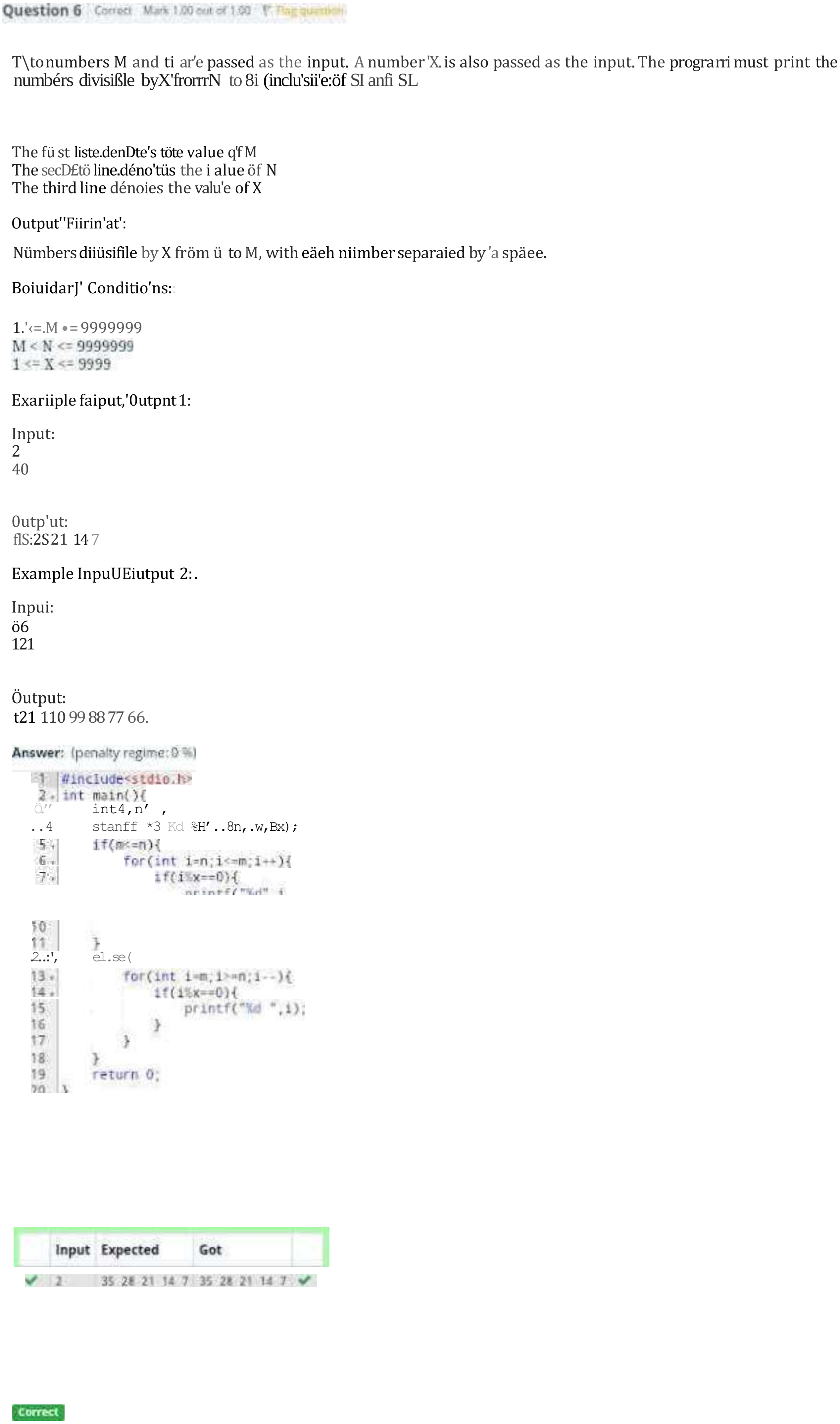
brewer: [penafty. regime:Ö 6)



```
#include<stdio.h>
int main(){
    int n,m,s,t;
    scanf("%d %d",&n,&m);
    for(int í=0.;i2m;i++)(
        s=n+200;
        t=t+s,

    printf("%d",t);
```



✓	500	2100	2100	✓
✓	100 3	900	900	✓



Question 6 Correct Mark 1.00 out of 1.00 Flag question

T\tonumbers M and ti ar'e passed as the input. A number 'X. is also passed as the input. The prograrri must print the numbérs divisißle byX'frorrrN to 8i (inclu'sii'e:öf SI anfi SL

The fü st liste.denDte's töte value q'f M
The secD£tö line.déno'tüs the i alue öf N
The third line dénoies the valu'e of X

Output''Fiirin'at':

Nümbers diiüsifile by X fröm ü to M, with eäeh niimber separaied by 'a späee.

BoiuidarJ' Conditio'ns:

1.'<=.M •= 9999999
M < N <= 9999999
1 <= X <= 9999

Exariiple faiput,'0utpnt 1:

Input:
2
40

0utp'ut:
flS:2S 21 14 7

Example InpuUEiutput 2:.

Inpui:
ö6
121

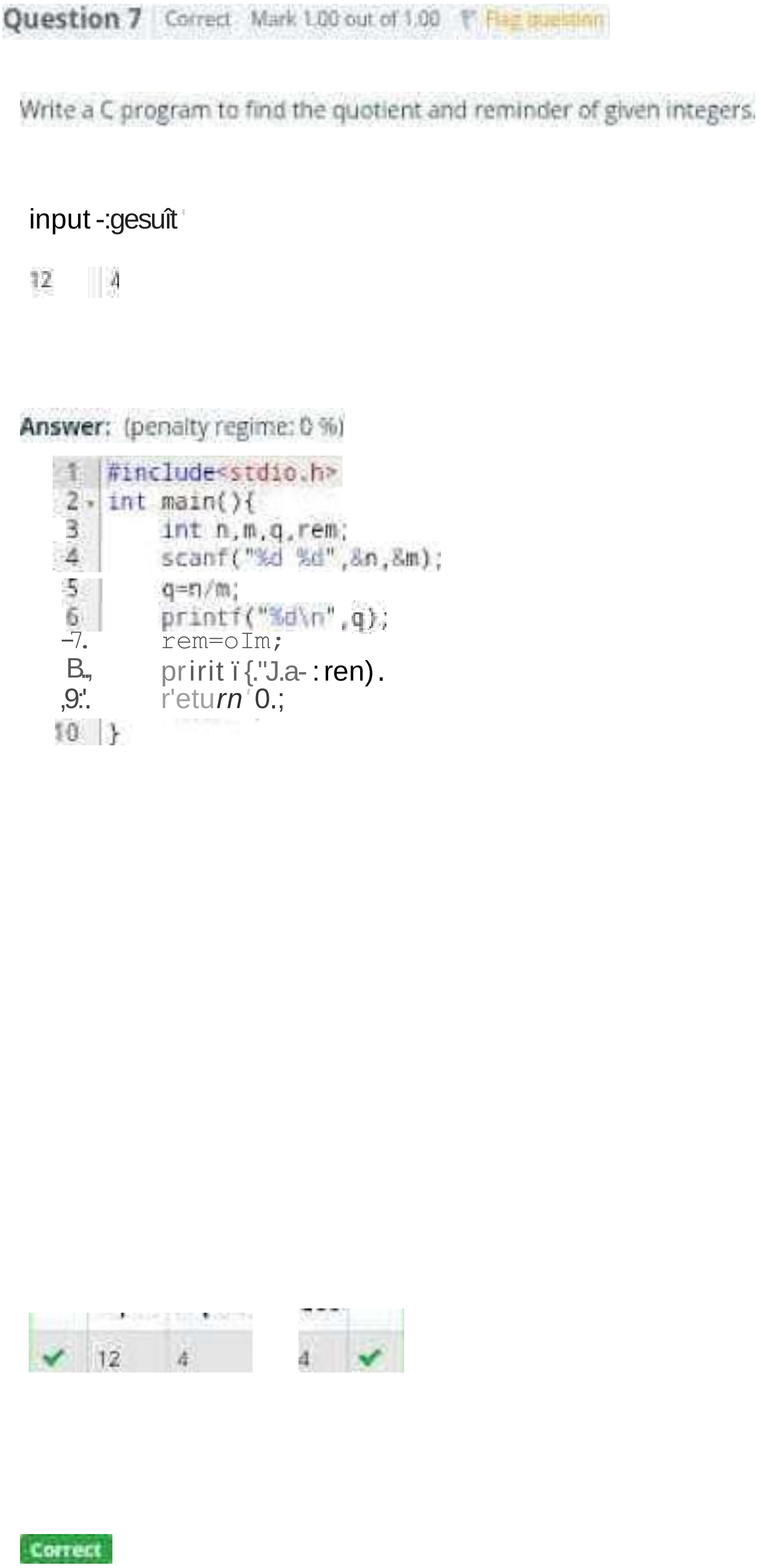
Öutput:
t21 110 99 88 77 66.

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int4,n'  ,
    stanff *3 Kd %H'..8n,.w,Bx);
    if(m<=n){
        for(int i=n;i<=m;i++){
            if(i%x==0){
                printf("%d",i


    }
    el.se(
        for(int i=m;i>=n;i--){
            if(i%x==0){
                printf("%d ",i);
            }
        }
    }
    return 0;
}
```

	Input	Expected	Got	
✓	2	35 28 21 14 7	35 28 21 14 7	✓

Correct



Question 7 Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the quotient and reminder of given integers.

input -:gesuît

12	4

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int n,m,q,rem;
    scanf("%d %d",&n,&m);
    q=n/m;
    printf("%d\n",q);
    rem=oIm;
    pririt ï{."J.a- : ren) .
    r'eturn ' 0.;
}
```

✓	12	4	4	✓

Correct

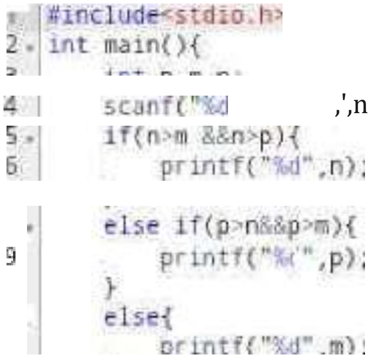
Question 8 Correct Mark 1.00 out of 1.00

Write a C program to find the biggest among the given 3 integers?

For example:

laput	Result

Answer: (penalty regime: 0 %)

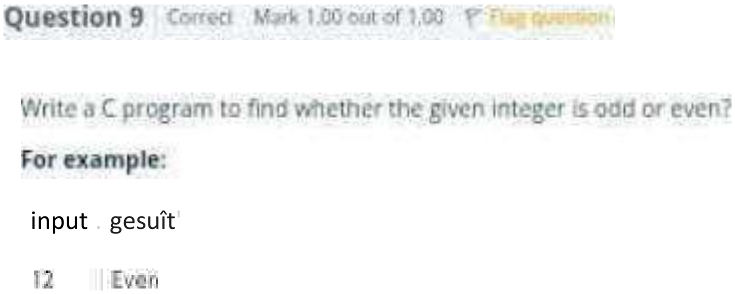


```
#include<stdio.h>
int main(){
    int n,m,p;
    scanf("%d                ,',n,:•!n,‹.»i.
    if(n>m &&n>p){
        printf("%d",n);

    else if(p>n&&p>m){
        printf("%(",p);
    }
    else{
        printf("%d",m);
```

	Inpur	Expected	Got	
✓	10 20 30	30	30	✓

Passed all tests: r

Correct



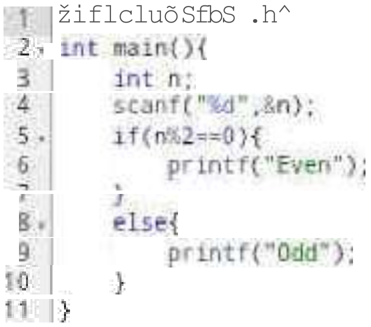
Question 9 Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find whether the given integer is odd or even?

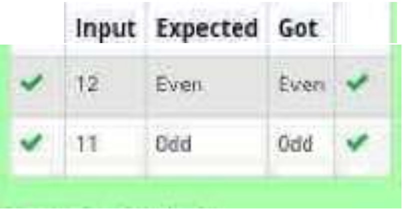
For example:

input	gesuît
12	Even

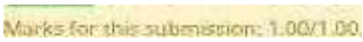
Answer: Ipenalty •girnc: 0 Âi



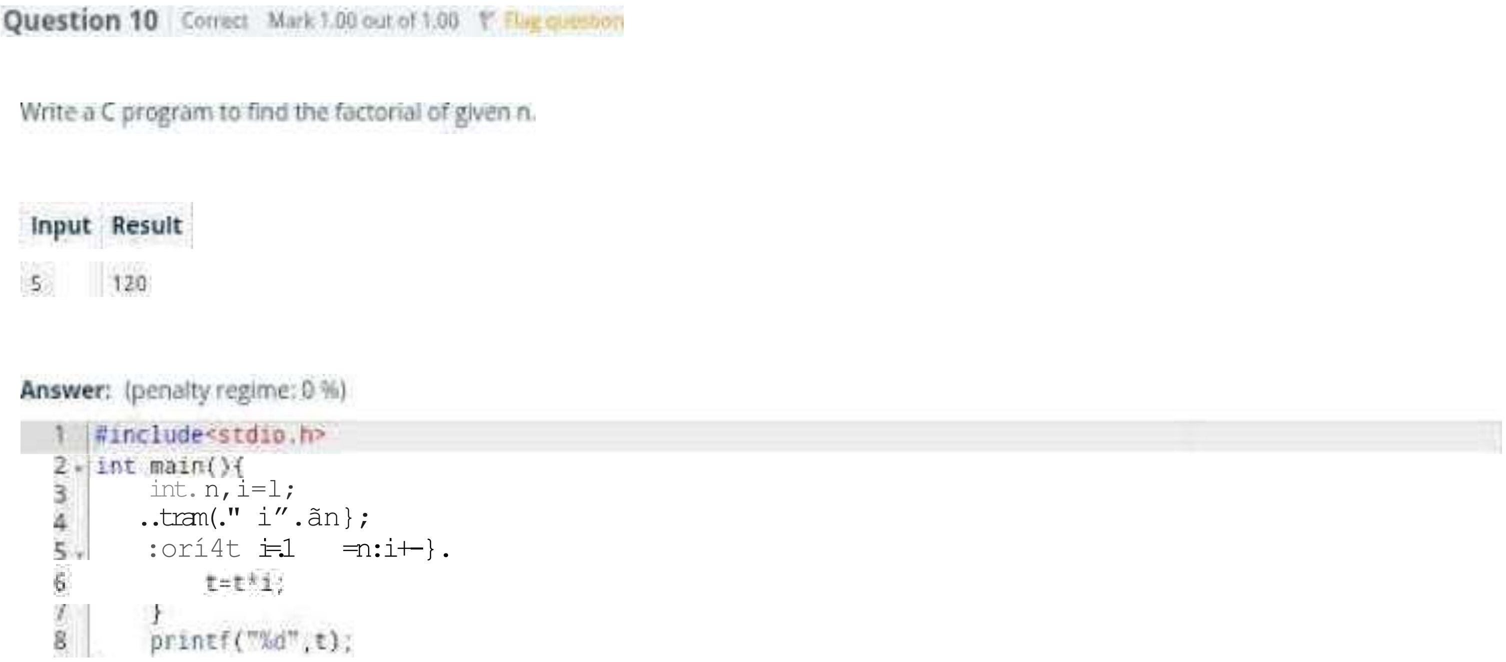
```
žiflcluõSfbS .h^
int main(){
    int n;
    scanf("%d",&n);
    if(n%2==0){
        printf("Even");
    }
    else{
        printf("Odd");
    }
}
```



	Input	Expected	Got	
✓	12	Even	Even	✓
✓	11	Odd	Odd	✓



Marks for this submission: 1.00/1.00.



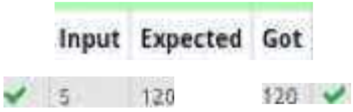
Question 10 Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the factorial of given n.

Input	Result
5	120

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int. n,i=1;
   ..tram(." i”.ãn};
    :orí4t i=.1    =n:i+–}.
        t=t*i;
    }
    printf("%d",t);
```



	Input	Expected	Got	
✓	5	120	120	✓

Question 11

Correct Mark 1.00 out of 1.00 Flag quest...

Write.a C qrogram to find the *um fir*t N natural numbers.

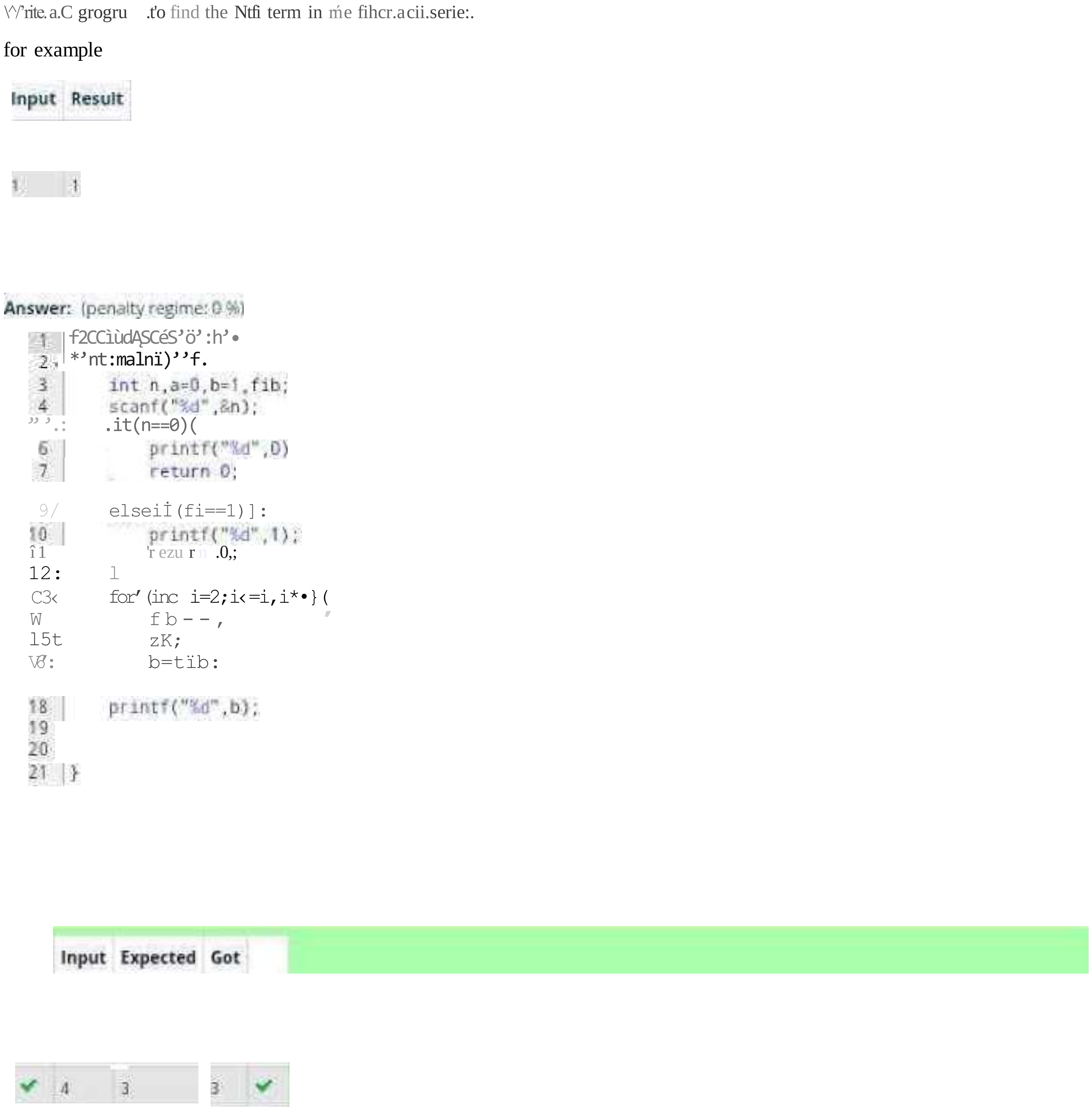
Input	Result

Answer: tpenalty regime: 0 él

```
#tnC1   .sf¢lo h*
int main(){
    int n,t=0;
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        t=t+i;

    printf("%d",t);
```

	Input	Expected	Got

Correct



\/'rite. a.C grogru .t'o find the Ntfi term in ḿe fihcr.acii.serie:.

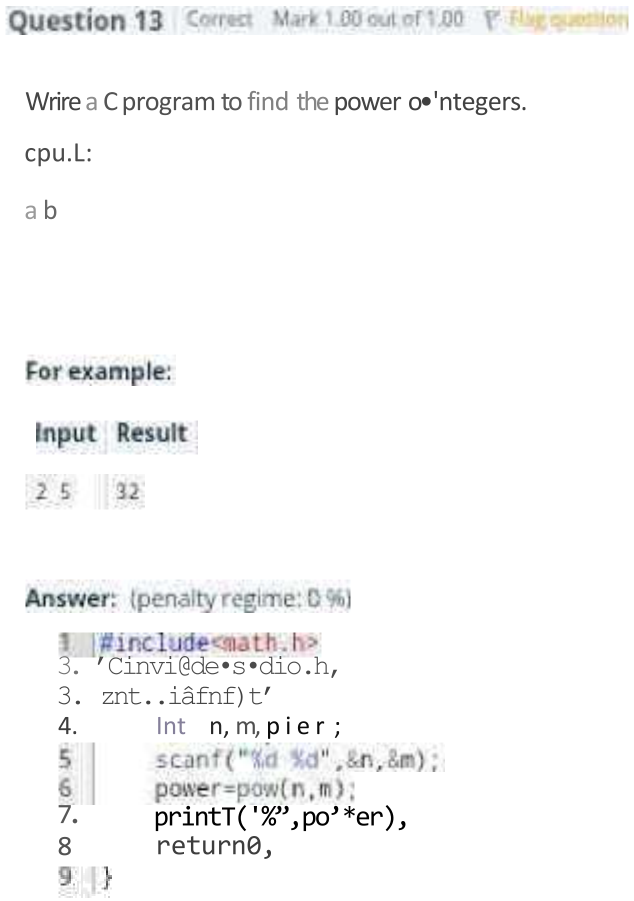
for example

Input	Result
1	1

Answer: (penalty regime: 0 %)

```
f2CCìùdĄȘCéS'ö':h'•
*'nt:malnï)''f.
    int n,a=0,b=1,fib;
    scanf("%d",&n);
    .it(n==0)(
        printf("%d",0)
        return 0;

    elseiİ(fi==1)]:
        printf("%d",1);
        'r ezu r n .0,;
    l
    for'(inc i=2;i<=i,i*•}(
        f b - - ,
        zK;
        b=tïb:

    printf("%d",b);



}
```

	Input	Expected	Got	
✓	4	3	3	✓



Question 13 Correct Mark 1.00 out of 1.00 Flag question

Wrire a C program to find the power o•'ntegers.

cpu.L:

a b

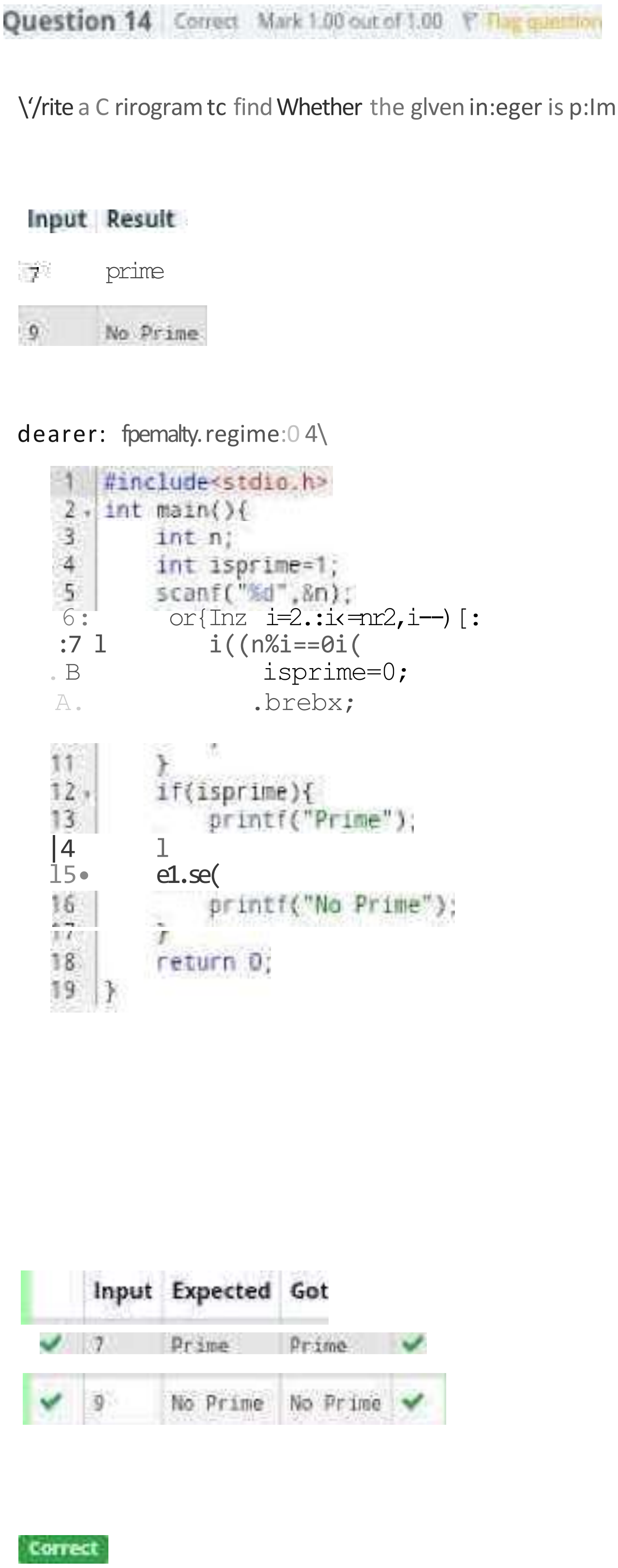
For example:

Input	Result
2 5	32

Answer: (penalty regime: 0 %)

```
#include<math.h>
'Cinvi@de•s•dio.h,
znt..iâfnf)t'
     Int  n, m, pier;
     scanf("%d %d",&n,&m);
     power=pow(n,m);
     printT('%",po'*er),
     return0,
}
```

Correct



Question 14 Correct Mark 1.00 out of 1.00 Flag question

\'/rite a C rirogram tc find Whether the glven in:eger is p:Ime sr n'ot.

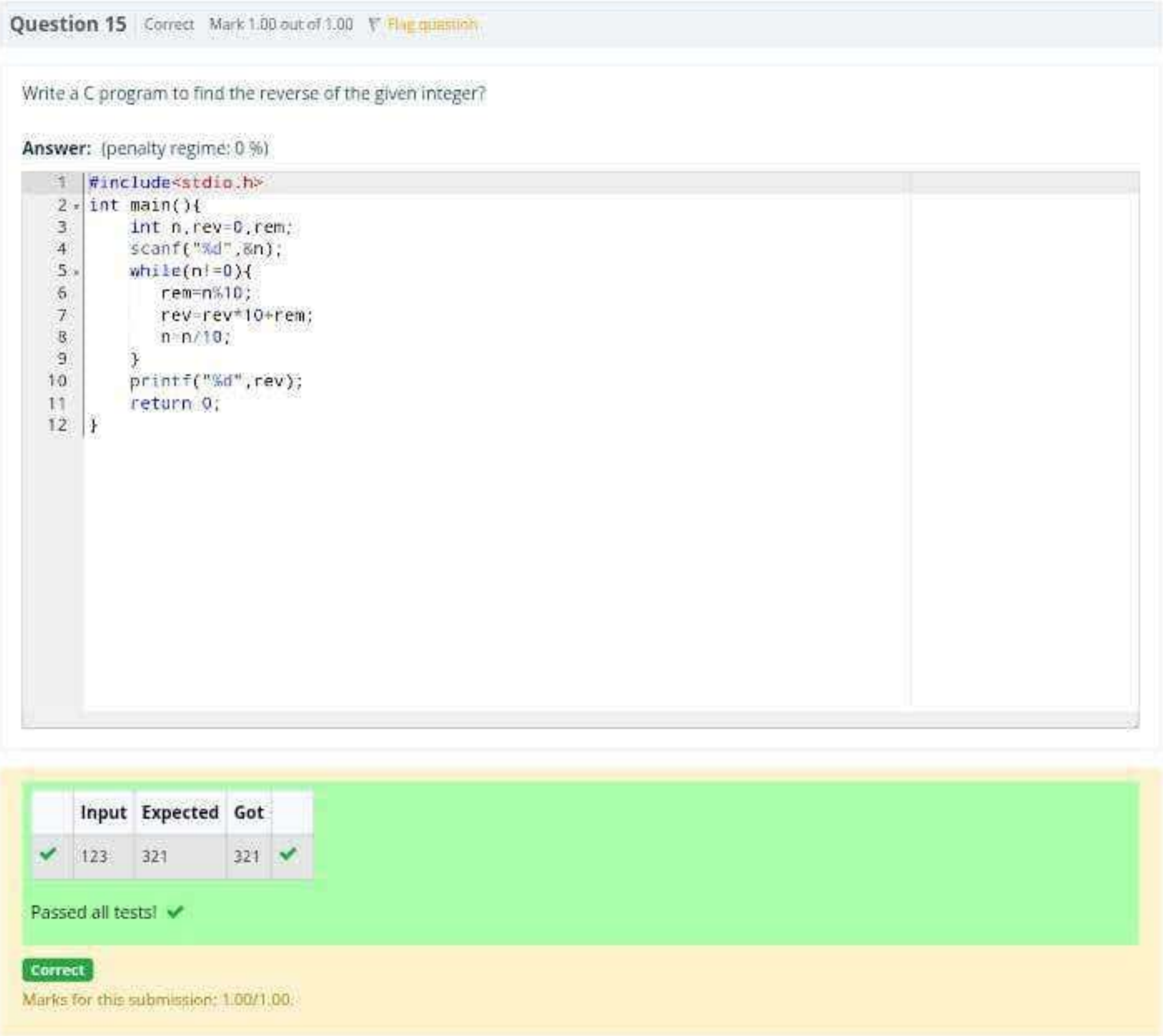
Input	Result
7	prime
9	No Prime

dearer: fpemalty.regime:0 4\

```
#include<stdio.h>
int main(){
    int n;
    int isprime=1;
    scanf("%d",&n);
     or{Inz  i=2.:i<=nr2,i--)[:
        i((n%i==0i(
            isprime=0;
           .brebx;

    }
    if(isprime){
        printf("Prime");
    l
    e1.se(
        printf("No Prime");
    }
    return 0;
}
```

	Input	Expected	Got	
✓	7	Prime	Prime	✓
✓	9	No Prime	No Prime	✓

Correct



Question 15 Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the reverse of the given integer?

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int n,rev=0,rem;
    scanf("%d",&n);
    while(n!=0){
       rem=n%10;
       rev=rev*10+rem;
       n=n/10;
    }
    printf("%d",rev);
    return 0;
}
```

	Input	Expected	Got	
✓	123	321	321	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

1-DP-Playing with Numbers

Started on	Wednesday, 8 October 2025. 6:T6.4M
State	Finished
Completed on	Wednesday, 8 October 2025. 6:54 .4M
Time taken	37 mins 42 secs
Grade	10.00 our of 10.00 (1004}

Question 1 Correct Mark 10.00 out of 10.00 Flag question

Playing with Numbers:

Ram and Sara are playing with numbers by giving puzzles to each other. Now it was Ram tern, so he gave Site a positive integer'n" and rwo numbers 1 and 3. He asked her to find the possible ways by which the number n can be represented using 1 and 3.Wri‹e any efficient algorithm to fino the possible ways.

Example I:

Input: *6*
Output:*6*
Explanation: *There are 6 ways to 6 represent number with 1 and 3*

1+1+1+1+1+1

3+3

1+1+1+3

i .“3• i.“i

3 •l- i+i

input Format

First Line contains the number n

Output Format

Print: The number of possible ways 'n' can be represented using 1 and 3

Sampie Input

Sample Outpur

6

Answer: (penalty rem•ime: 0 %)

Are editor not ready. Perhaps reload page?
Falling back to raw texcarea.

	Input	Expected	Got	
✓	25	8641	8641	✓
s*'	\00	24382a1 9s9672 \629	243828 \9596721 629	••^

Correct

2-DP-Playing with chessboard

Started on Wednesday, 8 October 2025. 8:54 AM

State Finished

Completed on Wednesday, 8 October 2025. 9:15 AM

Time taken 20 mins 25 secs

Grade 10.00 out of 10.00 (100Poj

Question 1 c• •u Msrk T0.00 ouc of 10 00 I" » o.-<..u•

Playing with Chessboard:

Ram is given with an non chessboard with each cell with a monetary va1ue. Ram stands at the (0,0), that the position of the top left white rook. He is been given a task to reach the bottom right b1ack rook position (n-J, n-1) constrained that he needs to reach the position by traveling the maximum monetary path under rhe condition that he can only tfaveI one step right or one step down the board. Help ram to achieve it by providing an efficient DP algorithm.

Example:

Input

1 2 4

2 3 4

8 7 1

Output:

19

Explanation:

Totally there will be 6 paths among that the optimal is

Optimal path value:J+2+8•7+1=19

Input Format

Flrst Line contains the integer n

The next n lines contain the non chessboard values

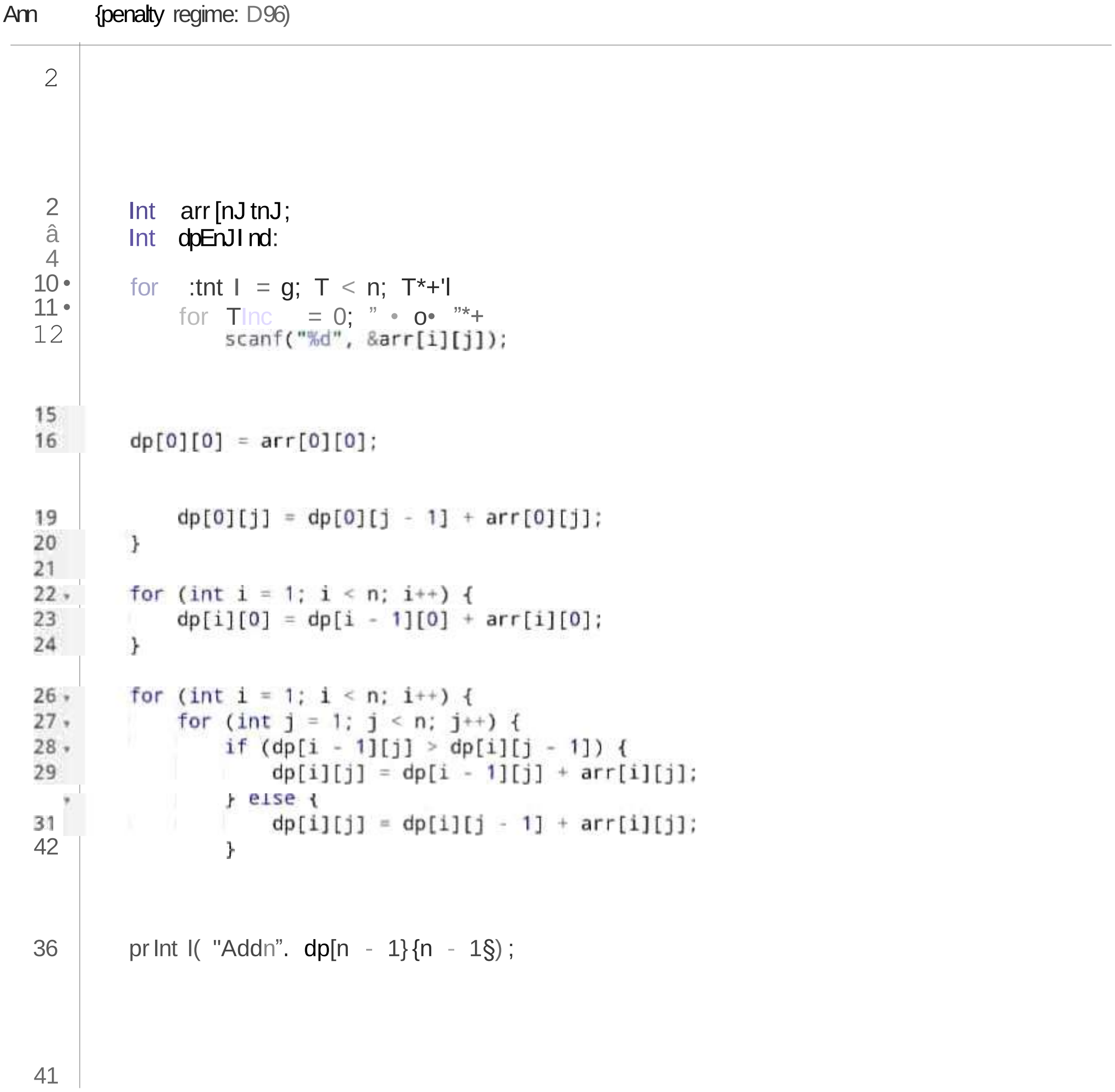
Output Format

Print Maximum monetary value of the path

Answer: (penalty regime: 0 %)

```
Pznc1ude <std o.h>

int main() (
    1nt n;
    scanff "°+d" , &n);

    int arr [nJ [n} ;
    1nt dp[n} {n} ;

    for (int i - 0; i ‹ n; i++) (
        fa r (ink j = 0; j < n; j ++) {
            scanf( "Sd", &arr {iJ Ej J );
        }
    }

    dp f0J Vol • ‹ t0! \0 :

    for (ant y = 1; j < n; j•+ ) {
        dp[OJ {j J = dp[0} [j 1} • arr [0] [j } ;
    }

    for (int i = 1; i< n; i-*) (
        dp[i} {0J = dp[i —1} [0} - arr [1}[0] ;
    }

    for (int i = 1; i< n; i ) (
        far (Int j - 1; j n; j++ ) {
            if (dp [i \ IjJ > dp[IJ [j - 1} ) {
                dp[1} {j } = dp[i — } [j } - ar r [1} [j} :
            ? else {
                dp[i]{j] = dp[i]{j - 1] - arr[i][j];
            }
        }
    )

    print f( "Rd\n", dp[n 1)(n I));

    return 0;


```

Ann {penalty regime: D96)



```
    Int   arr [nJ tnJ;
    Int   dpEnJI nd:

    for    :tnt I  = g;  T  <  n;  T*+'I
        for  TInc     = 0;  ”  •  o•  ”*+
            scanf("%d", &arr[i][j]);


    dp[0][0] = arr[0][0];


        dp[0][j] = dp[0][j - 1] + arr[0][j];
    }

    for (int i = 1; i < n; i++) {
        dp[i][0] = dp[i - 1][0] + arr[i][0];
    }

    for (int i = 1; i < n; i++) {
        for (int j = 1; j < n; j++) {
            if (dp[i - 1][j] > dp[i][j - 1]) {
                dp[i][j] = dp[i - 1][j] + arr[i][j];
            } else {
                dp[i][j] = dp[i][j - 1] + arr[i][j];
            }


    pr Int I(  "Addn”.  dp[n  -  1}{n  -  1§) ;
```

3-DP-Longest Common Subsequence

Started on	Wednesday, 15 October 2025, B:34 AM
State	Finished
Completed on	Wednesday, 15 October 2025, 9:03 AM
Time taken	28 mins ^i1 secs
Marks	1.00/1.00
GEBdB	10.00 OLft Of 10.00 (100%)

Question 1 correct Mark 1.0o oucof \.00 P y 4.n• •+s

Given two strings find the length ofche common longest subsequence{need not be conLlguous) between the two.

s1: ggtabe

s2: tgatasb

s1	a	g	g	t	a	b	
s2	g	x	l	x	a	y	b

The length Is 4

So1veing iL using Dynamic Programming

Input Result

Answer: (pena\y reglme: 0 %)

```
P"znc1ude <stdio.h>
 81ncJude <s tr*ng.h>
#de{ine HAX 100
int  max(int a, *nt b)
‹
    return (a > b) ? a : b;

1nt LCS(char *X, char *Y) {
    int o = strlen(X);
    int n = strlen(Y);
    int L[MAX][MAX];
    int i, j;
    for (i = 0; i <= m; i++) {
        for (j = 0; j <= n; j++) {
            if (i == 0 || j == 0)

            else iI (Mi - 1]   Yj   1])
                L i ] Q ] = L|l - 1][j - lj • 3;
            else
                L [1} tJ J '  max( L[i  — 1§[j} , L[*][j - 1} ):
        }
    F
    return L[m} [n} ;
1
int  main( ) {
    char X[&AXj , Y[MAXj ;
    scanf("gs™", X) ;
    scanf("&s", Y} ;

    int length = LCS(X, Y):
    print}(”%d\n’, lRngth);

    return 0;
1
```

	Input	Expected	Got	)’’
✓	aab azb	2	2	✓
				✓

4-DP-Longest non-decreasing Subsequence

Started on	Wednesday, 22 October 2025, 7:31 PM
State	finished
Completed on	Wednesday, 22 October 2025, 7:41 PM
Time taken	10 wins 0 secs
Marks	T.00/1.00
Grade	10.00 out of T0.00 (1004)

question 1 C»rrect Mark 100 out uf" 100 I" ' +r u •• •.

Problem statement:

FInd the length of the Longest Non-decreasing Subsequence in a given Sequence.

Input:9

Sequence:{-1,3,4,5,2,2,2,2,3]

the sul›sequence Is {-1,2,2,2,2,3a

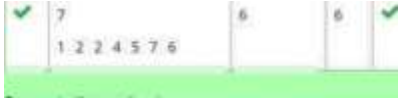
Output:6

Answer: (penalty regime: 0 %l

```
#inc lude <stdio.h›

int ub( int a[] . Int ten. int key) ‹
    int 1 - 0, h • 1en:
    while (1 • h) f
        int m = 1 + (h - 1) / 2;
        If (atmJ ° key)
            l = m + 1;
        else
            h - m;
    }
    return 1;
}

int 1nds(Int a[ J, int n) f
    i f (n =- 0) return 0:
    int t {nJ , 1en = 0;
    for (In t 1- 0: ”L Fi; -+1) {
        1nt p - ub( t , 1en, a[ iJ ) ;
        t tp J —a[1} :
        If (p =- ten) ten *+;
    }
    return 1en;
}

Inc main( ) f

    Int ntJ ‹ -1, 3, 4, S, 2, 2. 2, 2, 3 }:
                ', 1nds(a, nj ):
    r eturn!0;
}
```

Input Expected Got

-1 3 4 5 2 2 2 2 3



✓	7 1 2 2 4 5 7 6	6	6	✓

Correct

Marks for this submission: 1.00/1.00.

1-G-Coin Probl.em

Started on	Saturday, 23 August 2025, 6:48 PM
State	Finished
Completed on	Saturday, 23 August 2025, 7:34 PM
Tlme taken	4C mir.s 10 sers
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Write a program to take value V and we want to make change for V Rs, and we have infinite supply of each of the denominations in Indian currency, i.e., we have infinite supply of { 1, 2, 5, 10, 20, 50, 100, 500, 1000} valued coins/notes, what is rn'e mininium.numbe r.of'ŁDUs QĘld/or.notes needed tD take łhe cfiange..

łnput Format:

Take an. ncgger from stdin.

Óutyur Formac:

t+rint:che •ńteeer.which is change.of,the miJmber.

Exarfi'pl e Inpu.t

ó4;:.

Óutgut

Explanaton:

We need a 50 Rs note and a 10 Rs note and two 2 rupee coins.

Answer: (penalty regime: 0 %)

```
#include<stdiD..h>
int main(){
    int n;
    int count=0, c=0;
    scanf("%d",&n);
    int arr[]={1000,500,100,50,20,10,5,2,1};
    tori3F: ie0,ic9:,i++) (
        count=n/arr[i]
        c+=count;
        n%=arr[i];

    printf("%d",c);

```

	Input	Expected	Got	
✓	49	5	5	✓

Passed all tests! ✓

2-G-Cookies Problém

Started on	Saturday, 23 August 2025, 7:34 PM
State	Finished
Completed on	Saturday, 23 August 2025, 8:46 PM
Time taken	1 hour 12 mins
Grade	**10.00** out of 10.00 (**100%**)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Assümü you are an awesome 'p'arenc and.wani'ro'giÏ'your.cÏ itdren sórrie.còókies. Bur;;.yóu.sho'úld'give each rti!d at 'm'csr üni• còokie.

Each child i has a greed factor g[i], which is the minimum size of a cookie that the child will be content with; and each cookie j has a size s[j]. If s[j] >= g[i], we can assign the cookie j to the child i, and the child i will be content. Your goal is to maximize the number of your content children and output the maximum number.

Example 1:

Input:

3

1 2 3

2

Output:

Explanation: You have 3 children and 2 cookies. The greed factors of 3 children are 1, 2, 3.

And even though you have 2 cookies, since their size is both 1, you could only make the child whose greed factor is 1 content.

You need to output 1.

1 <= g.length <= 3 * 10^4

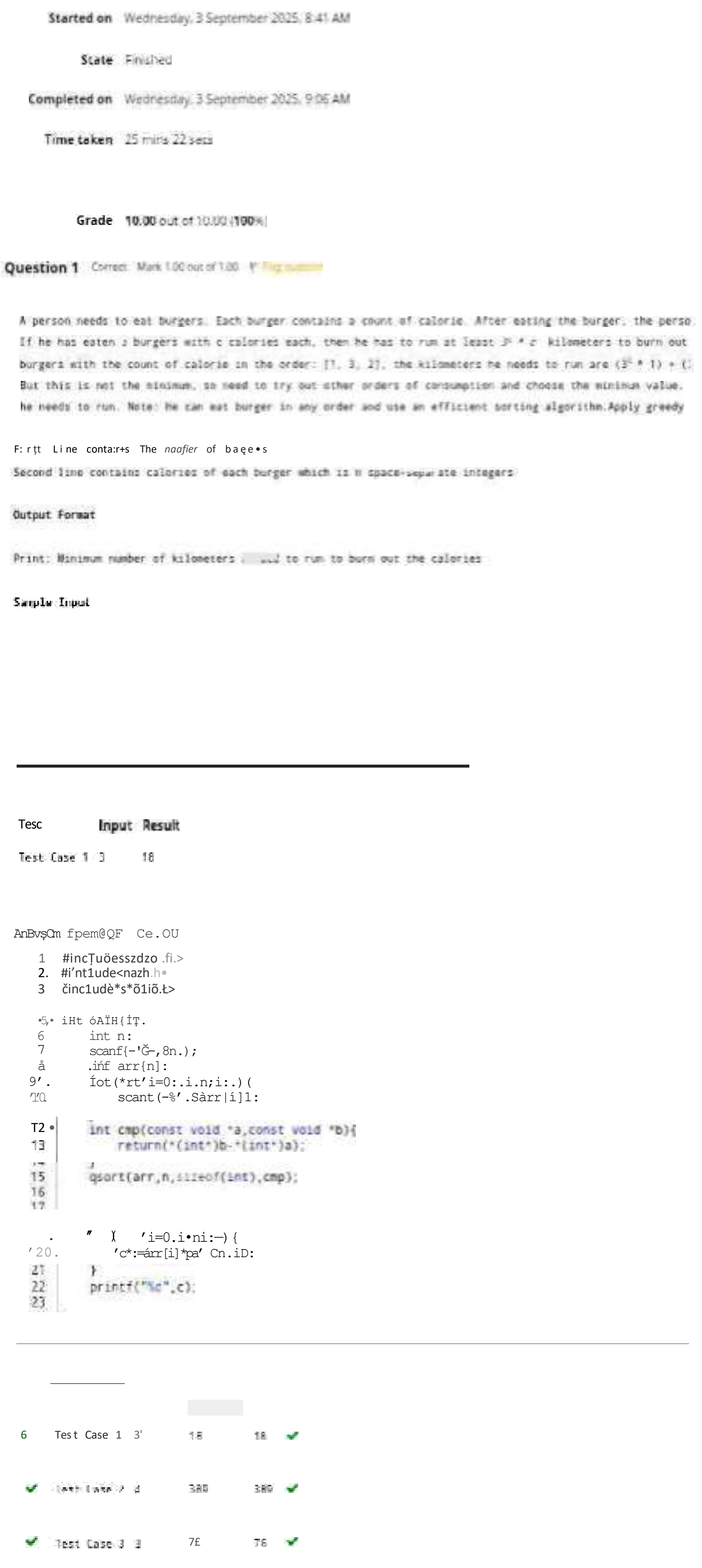
0 <= s.length <= 3 * 10^4

Answer: (penalty regime: 0 %)

```
#ioclude‹gtdio.h>
it'tain..
    int n,c,
    scanf("%
    in.t.g[n];
    f°"(›•C‘’I ơ;‘i’B1•’*i(‘:
     ’ ”.scànf d",g[i]Ç

    sc.anf’’f".%›J’,Rc],
   .’.i’ntj[c]
    for idc i= ;i F,iC+(
        s%Ff"Id,6|ij);
    }
    int i=0,j=0,count=0;
    while(i<n && j<c){
        if(s[i]>=g[j]){
            count++;


    ’)
    j+.+.;

   ’ret’rl'0,’!’””':
```

	Input	Expected	Got	
✓	2	2	2	✓

3-G-Burger Problem



Started on	Wednesday, 3 September 2025, 8:41 AM
State	Finished
Completed on	Wednesday, 3 September 2025, 9:06 AM
Time taken	25 mins 22 secs
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

A person needs to eat burgers. Each burger contains a count of calorie. After eating the burger, the perso
If he has eaten i burgers with c calories each, then he has to run at least $3^i * c$ kilometers to burn out
burgers with the count of calorie in the order: [1, 3, 2], the kilometers he needs to run are (3^0 * 1) + (
But this is not the minimum, so need to try out other orders of consumption and choose the minimum value.
he needs to run. Note: He can eat burger in any order and use an efficient sorting algorithm.Apply greedy

F: rțt Line conta:r+s The *naafier* of baęe•s

Second line contains calories of each burger which is n space-separate integers

Output Format

Print: Minimum number of kilometers ... to run to burn out the calories

Sample Input

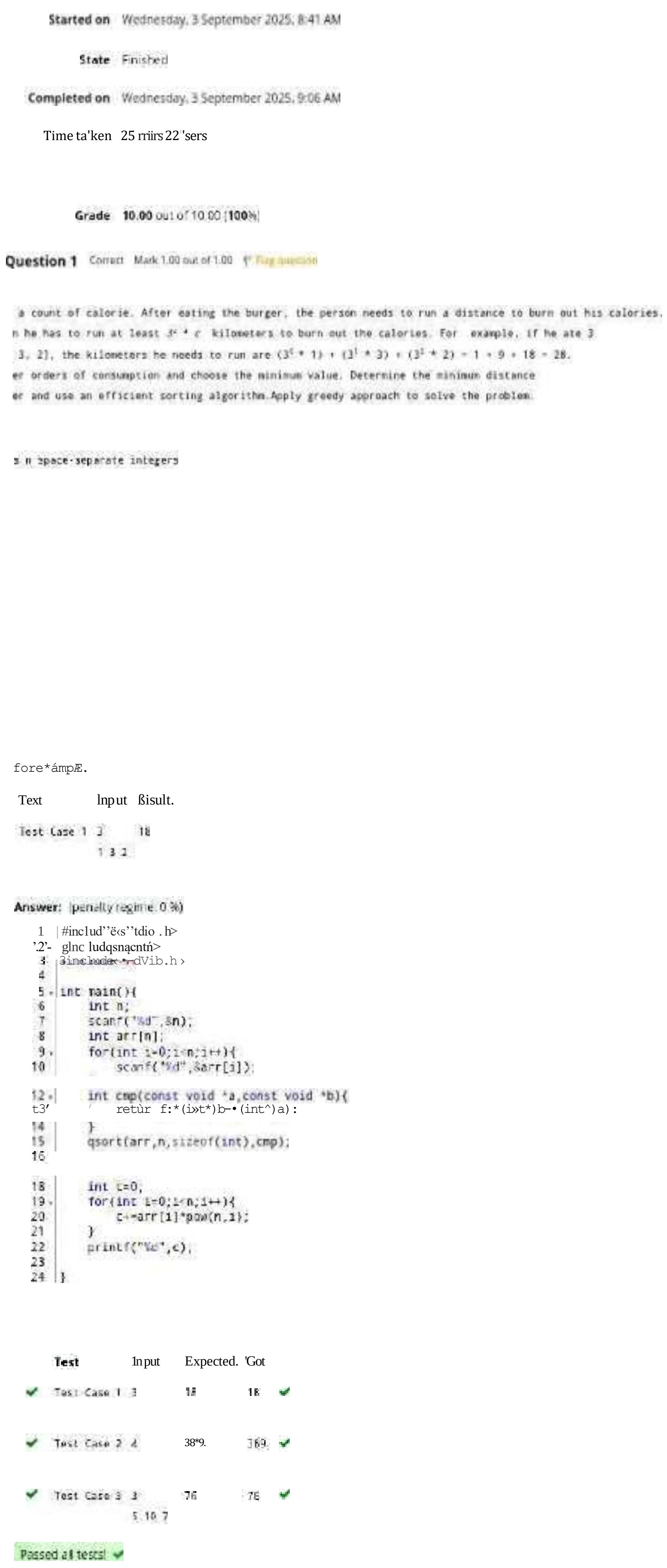
Tesc	Input	Result
Test Case 1	3	18

AnBvșCm fpem@QF Ce.OU

```
#incȚuöesszdzo .fi.>
#i’nt1ude<nazh.h•
činc1udè*s*õ1iõ.Ł>

iHt óAÏH{İȚ.
    int n:
    scanf{-'Ğ-,8n.);
   .ińf arr{n]:
    Íot(*rt’i=0:.i.n;i:.)(
        scant(-%’.Sàrr|í]1:

    int cmp(const void *a,const void *b){
        return(*(int*)b-*(int*)a);
    }
    qsort(arr,n,sizeof(int),cmp);


    ″  Ⅹ   ’i=0.i•ni:—){
        ’c*:=árr[i]*pa’ Cn.iD:
    }
    printf("%d",c);
```

6	Test Case 1	3'	18	18	✓
✓	Test Case 2	4	380	380	✓
✓	Test Case 3	3	7£	76	✓

3-G-Burger Problem



Started on	Wednesday, 3 September 2025, 8:41 AM
State	Finished
Completed on	Wednesday, 3 September 2025, 9:06 AM
Time ta'ken	25 rriirs 22 'sers
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

a count of calorie. After eating the burger, the person needs to run a distance to burn out his calories.
n he has to run at least $3^{i} * c$ kilometers to burn out the calories. For example, if he ate 3
3, 2], the kilometers he needs to run are $(3^{0} * 1) + (3^{1} * 3) + (3^{2} * 2) = 1 + 9 + 18 = 28$.
er orders of consumption and choose the minimum value. Determine the minimum distance
er and use an efficient sorting algorithm.Apply greedy approach to solve the problem.

s n space-separate integers

fore*ámpÆ.

Text	lnput	ßisult.
Test Case 1	3 1 3 2	18

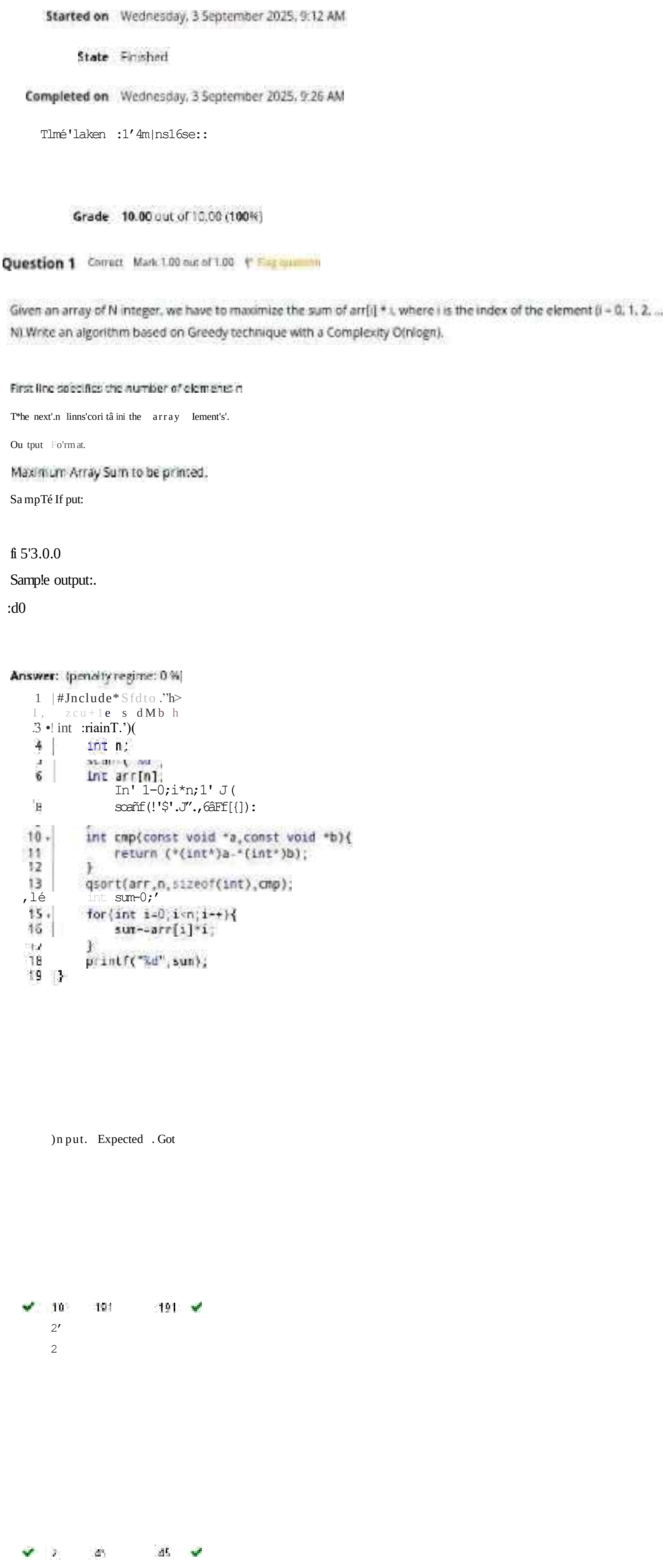
Answer: (penalty regime: 0 %)

```
#inc1ud’’ë‹s’’tdio . h>
glnc ludqsnącntń>
3include‹ •-dVib.h ›

int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);

    int cmp(const void *a,const void *b){
        retùr f:*(i»t*)b–•(int^)a):
    }
    qsort(arr,n,sizeof(int),cmp);


    int c=0;
    for(int i=0;i<n;i++){
        c+=arr[i]*pow(n,i);
    }
    printf("%d",c);

}
```

	Test	lnput	Expected.	'Got	
✓	Test Case 1	3	18	18	✓
✓	Test Case 2	4	38*9.	369	✓
✓	Test Case 3	3 5 10 7	76	76	✓

Passed all tests! ✓

4-G-Array Sum max problem



Started on Wednesday, 3 September 2025, 9:12 AM

State Finished

Completed on Wednesday, 3 September 2025, 9:26 AM

Tlmé'laken :1’4m|ns16se::

Grade **10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given an array of N integer, we have to maximize the sum of arr[i] * i, where i is the index of the element (i = 0, 1, 2, ... N).Write an algorithm based on Greedy technique with a Complexity O(nlogn).

First line specifies the number of elements-n

T*he next'.n linns'cori tâ ini the array Iement's'.

Ou tput Fo'rmat.

Maximum Array Sum to be printed.

Sa mpTé If put:

ﬁ 5'3.0.0

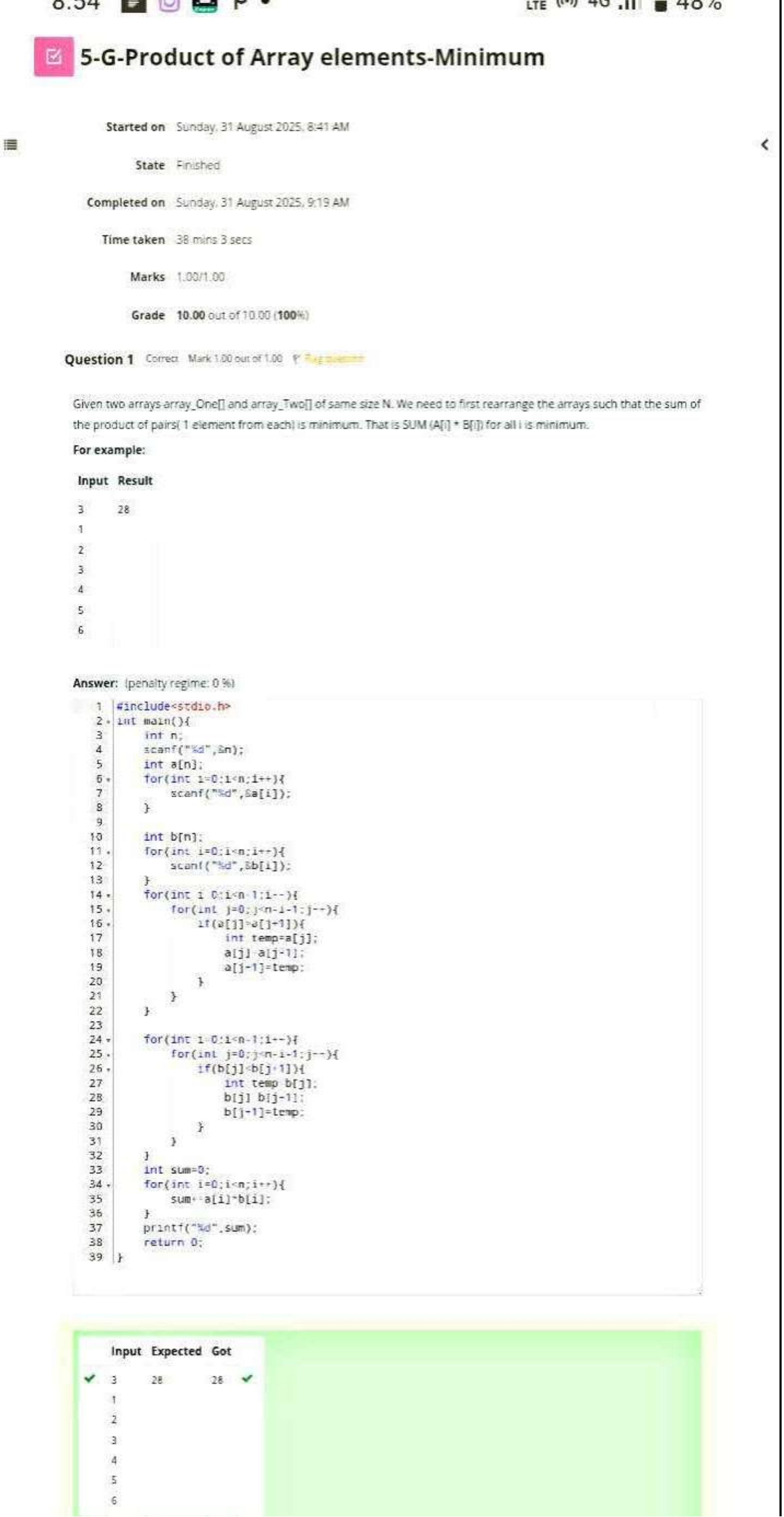
Samp!e output:.

:d0

Answer: (penalty regime: 0 %)

```
#Jnclude*Sfdto.”h>
zcu+1e s dMb h
int :riainT.’)(
    int n;
    [illegible]
    int arr[n];
        In' 1-0;i*n;1' J (
        soañf(!'$'.J”.,6âFf[{]):
    }
    int cmp(const void *a,const void *b){
        return (*(int*)a-*(int*)b);
    }
    qsort(arr,n,sizeof(int),cmp);
    int sum-0;’
    for(int i=0;i<n;i++){
        sum+=arr[i]*i;
    }
    printf("%d",sum);
}
```

	)nput.	Expected	. Got	
✓	10 2’ 2	191	191	✓
✓	7	45	45	✓



5-G-Product of Array elements-Minimum

Started on	Sunday, 31 August 2025, 8:41 AM
State	Finished
Completed on	Sunday, 31 August 2025, 9:19 AM
Time taken	38 mins 3 secs
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given two arrays array_One[] and array_Two[] of same size N. We need to first rearrange the arrays such that the sum of the product of pairs(1 element from each) is minimum. That is SUM (A[i] * B[i]) for all i is minimum.

For example:

Input	Result
3 1 2 3 4 5 6	28

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int a[n];
    for(int i=0;i<n;i++){
        scanf("%d",&a[i]);
    }

    int b[n];
    for(int i=0;i<n;i++){
        scanf("%d",&b[i]);
    }
    for(int i=0;i<n-1;i++){
        for(int j=0;j<n-i-1;j++){
            if(a[j]>a[j+1]){
                int temp=a[j];
                a[j]=a[j+1];
                a[j+1]=temp;
            }
        }
    }

    for(int i=0;i<n-1;i++){
        for(int j=0;j<n-i-1;j++){
            if(b[j]<b[j+1]){
                int temp=b[j];
                b[j]=b[j+1];
                b[j+1]=temp;
            }
        }
    }
    int sum=0;
    for(int i=0;i<n;i++){
        sum+=a[i]*b[i];
    }
    printf("%d",sum);
    return 0;
}
```

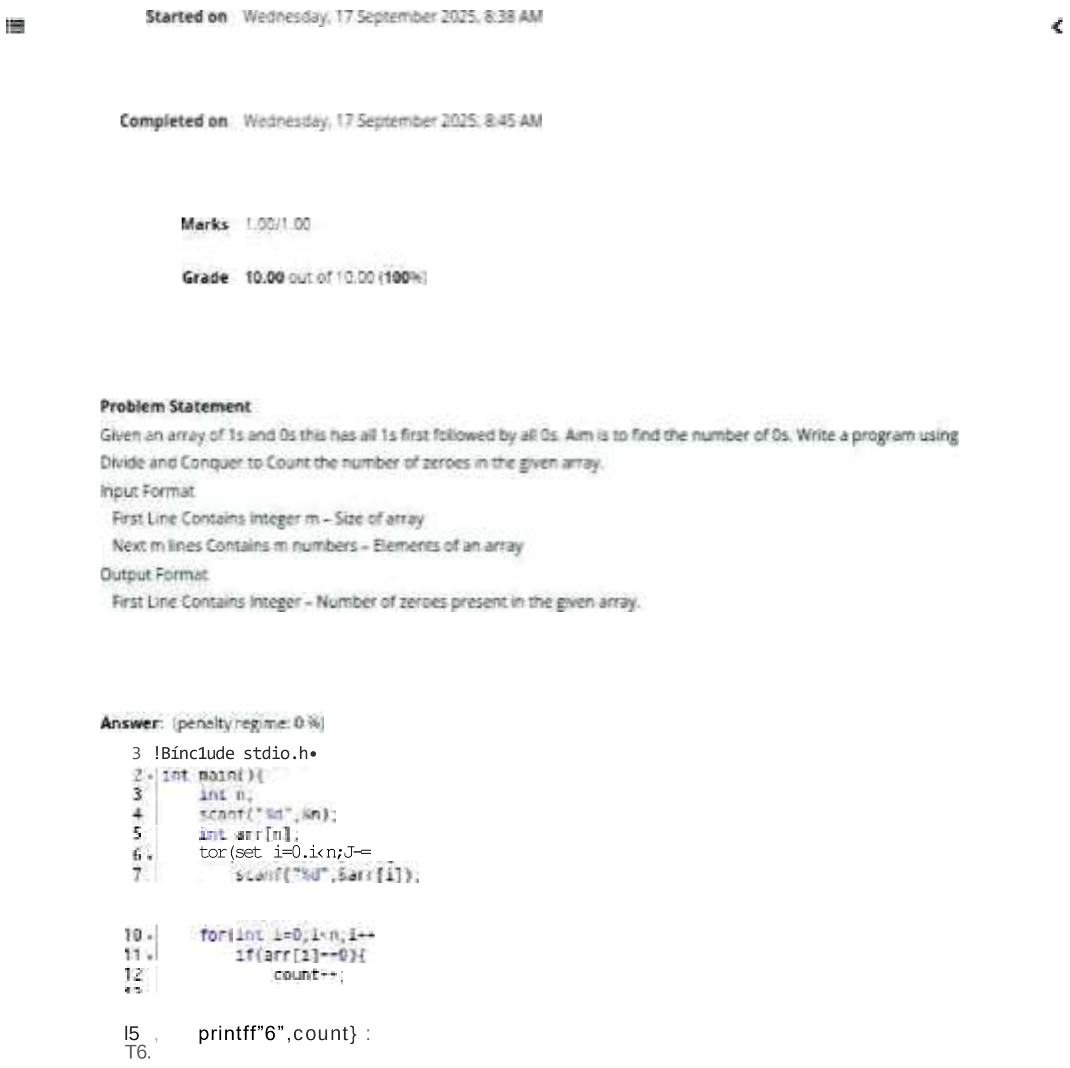
	Input	Expected	Got	
✓	3 1 2 3 4 5 6	28	28	✓

	Input	Expected	Got	
	2			
✓	4	22	22	✓
	7			
	2			
✓	5	590	590	✓
	20			
	30			
	10			

iö

Pässed alesLs4:Ÿ

1-Number of Zeros in a Given Array



Started on Wednesday, 17 September 2025, 8:38 AM

Completed on Wednesday, 17 September 2025, 8:45 AM

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100**%)

Problem Statement

Given an array of 1s and 0s this has all 1s first followed by all 0s. Aim is to find the number of 0s. Write a program using Divide and Conquer to Count the number of zeroes in the given array.

Input Format

First Line Contains Integer m – Size of array

Next m lines Contains m numbers – Elements of an array

Output Format

First Line Contains Integer – Number of zeroes present in the given array.

Answer: (penalty regime: 0 %)

```
!Bínc1ude stdio.h•
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    tor(set i=0.i‹n;J−=
        scanf("%d",&arr[i]);

    for(int i=0;i<n;i++
        if(arr[i]==0){
            count++;

    printff"6",count} :
```

1

1

✓ 5 2 2 ✓

1

1

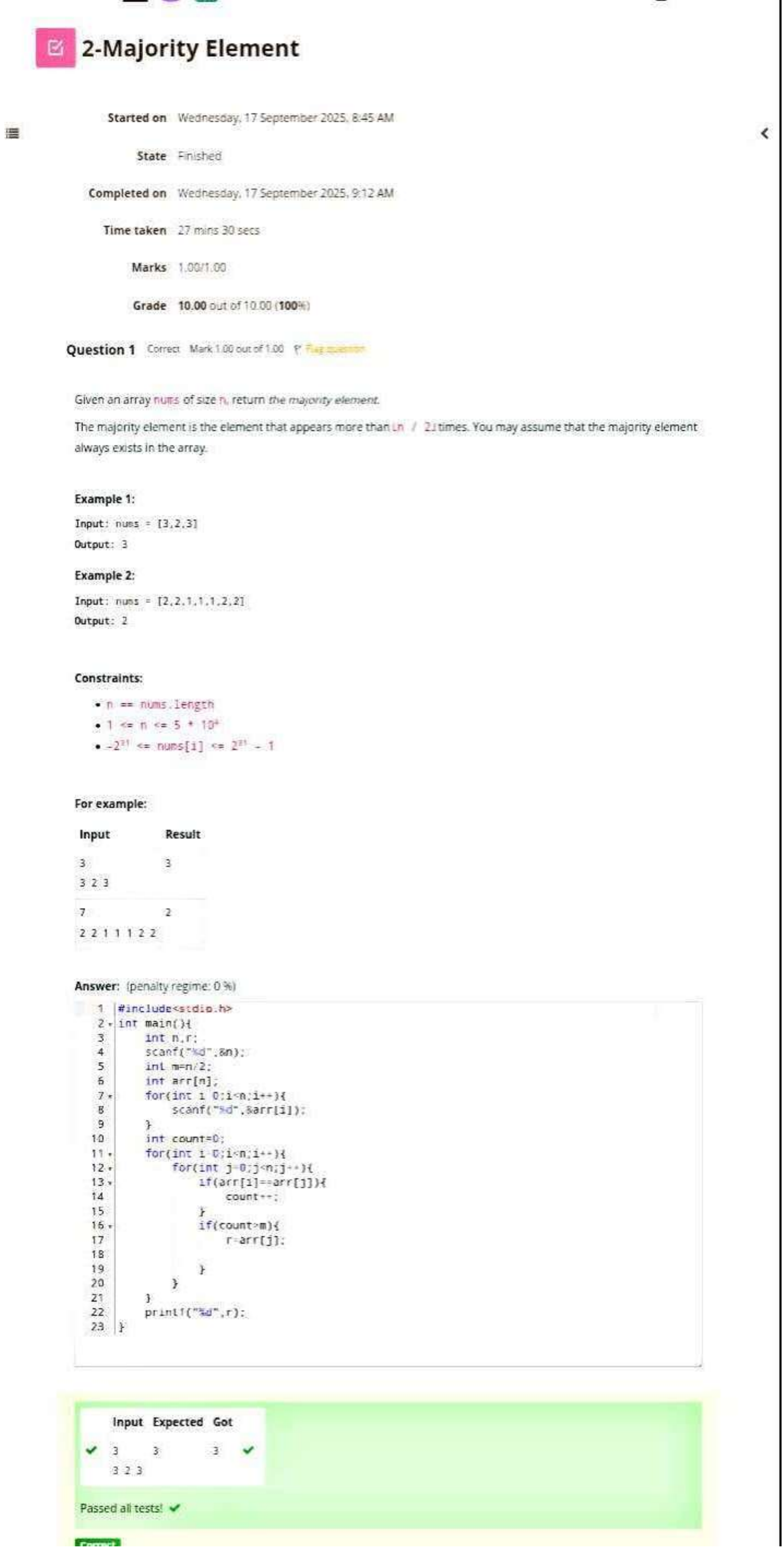
1

1

1

Correct

Marks for this submission: 1.00/1.00.



2-Majority Element

Started on	Wednesday, 17 September 2025, 8:45 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 9:12 AM
Time taken	27 mins 30 secs
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given an array nums of size n, return *the majority element.*

The majority element is the element that appears more than ⌊n / 2⌋ times. You may assume that the majority element always exists in the array.

Example 1:

```
Input: nums = [3,2,3]
Output: 3
```

Example 2:

```
Input: nums = [2,2,1,1,1,2,2]
Output: 2
```

Constraints:

- `n == nums.length`
- `1 <= n <= 5 * 10`^{4}
- `-2`^{31} `<= nums[i] <= 2`^{31} `- 1`

For example:

Input	Result
3 3 2 3	3
7 2 2 1 1 1 2 2	2

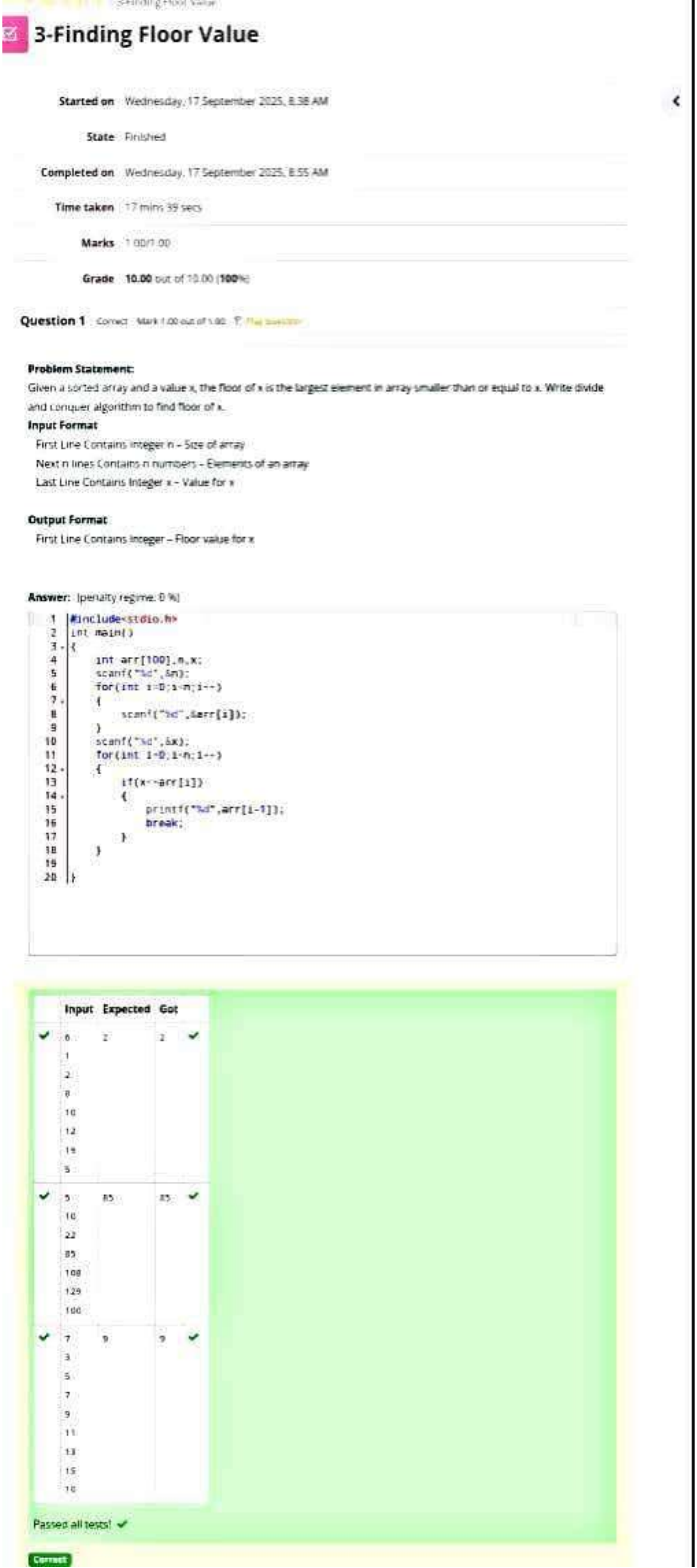
Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int n,r;
    scanf("%d",&n);
    int m=n/2;
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }
    int count=0;
    for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
            if(arr[i]==arr[j]){
                count++;
            }
            if(count>m){
                r=arr[j];

            }
        }
    }
    printf("%d",r);
}
```

	Input	Expected	Got	
✓	3 3 2 3	3	3	✓

Passed all tests! ✓

Correct



3-Finding Floor Value

3-Finding Floor Value

Started on	Wednesday, 17 September 2025, 8:38 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 8:55 AM
Time taken	17 mins 39 secs
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Problem Statement:

Given a sorted array and a value x, the floor of x is the largest element in array smaller than or equal to x. Write divide and conquer algorithm to find floor of x.

Input Format

First Line Contains Integer n – Size of array

Next n lines Contains n numbers – Elements of an array

Last Line Contains Integer x – Value for x

Output Format

First Line Contains Integer – Floor value for x

Answer: (penalty regime: 0 %)

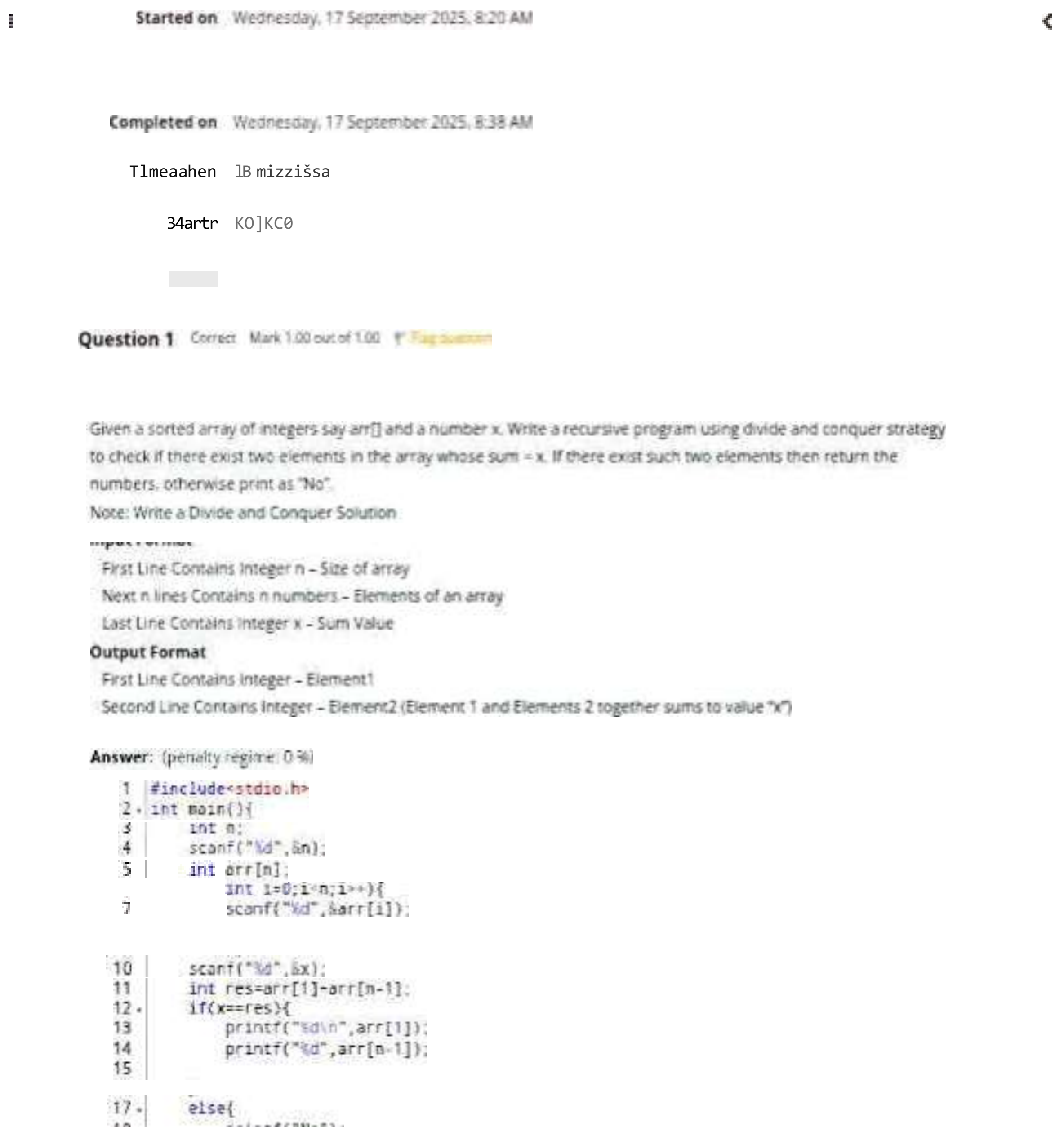
```
#include<stdio.h>
int main()
{
    int arr[100],n,x;
    scanf("%d",&n);
    for(int i=0;i<n;i++)
    {
        scanf("%d",&arr[i]);
    }
    scanf("%d",&x);
    for(int i=0;i<n;i++)
    {
        if(x<=arr[i])
        {
            printf("%d",arr[i-1]);
            break;
        }
    }

}
```

	Input	Expected	Got	
✓	6 1 2 8 10 12 19 5	2	2	✓
✓	5 10 22 85 108 129 100	85	85	✓
✓	7 3 5 7 9 11 13 15 10	9	9	✓

Passed all tests! ✓

Correct

4-Two Elements sum to x



Started on Wednesday, 17 September 2025, 8:20 AM

Completed on Wednesday, 17 September 2025, 8:38 AM

Tlmeaahen 1B mizzišsa

34artr KO]KC0

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given a sorted array of integers say arr[] and a number x. Write a recursive program using divide and conquer strategy to check if there exist two elements in the array whose sum = x. If there exist such two elements then return the numbers, otherwise print as "No".

Note: Write a Divide and Conquer Solution

First Line Contains Integer n – Size of array

Next n lines Contains n numbers – Elements of an array

Last Line Contains Integer x – Sum Value

Output Format

First Line Contains Integer – Element1

Second Line Contains Integer – Element2 (Element 1 and Elements 2 together sums to value "x")

Answer: (penalty regime: 0 %)

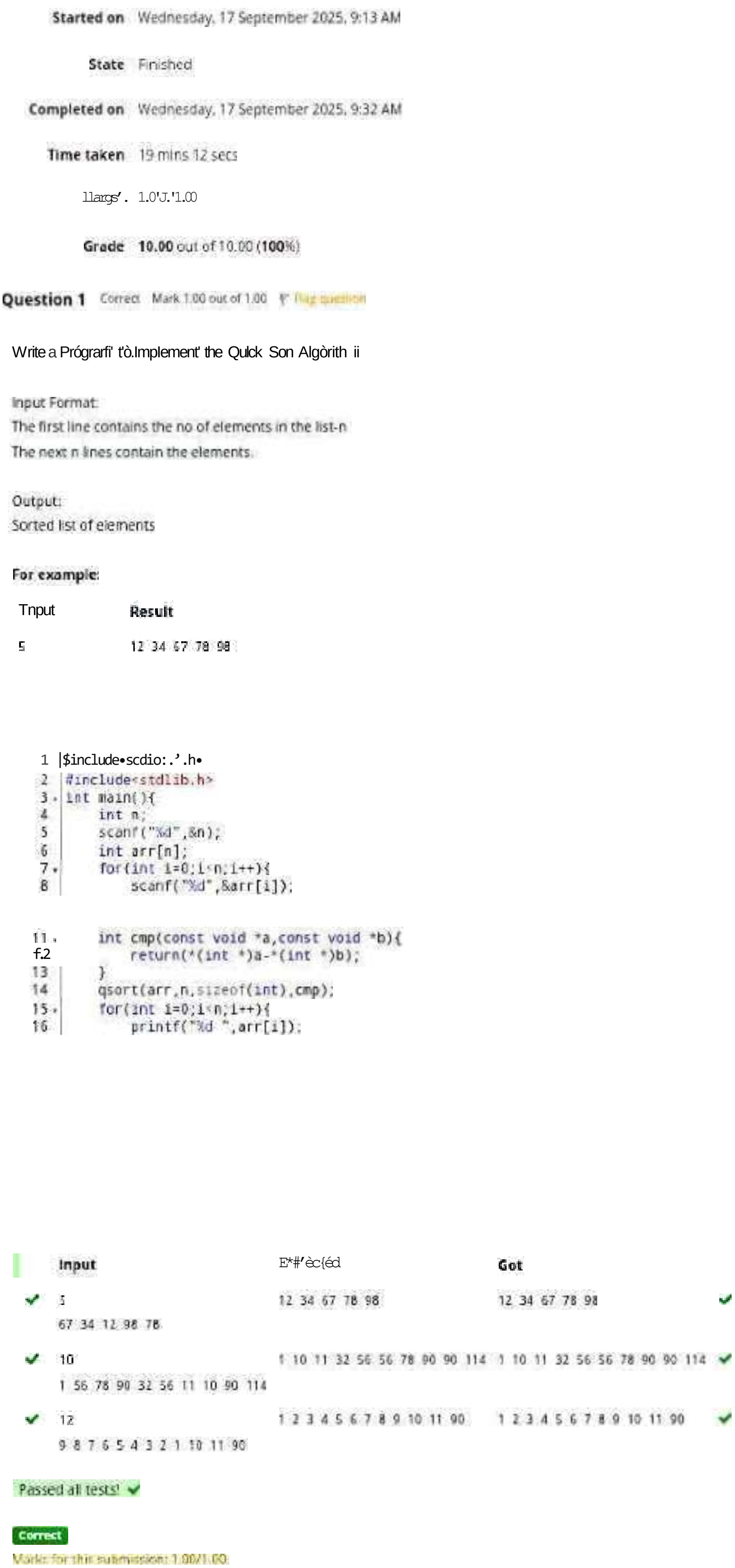
```
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
        int i=0;i<n;i++){
        scanf("%d",&arr[i]);

    scanf("%d",&x);
    int res=arr[1]-arr[n-1];
    if(x==res){
        printf("%d\n",arr[1]);
        printf("%d",arr[n-1]);


    else{
```

'2Ó
.2
22
2J ;T

2 10 1?

z

5-Impiementation of quick Sort



Started on	Wednesday, 17 September 2025, 9:13 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 9:32 AM
Time taken	19 mins 12 secs
llargs'.	1.0'J.'1.00
Grade	**10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Write a Prógrarfi' tò.Implement' the Qulck Son Algòrith ii

Input Format:
The first line contains the no of elements in the list-n
The next n lines contain the elements.

Output:
Sorted list of elements

For example:

Tnput	**Result**
5	12 34 67 78 98

```
|$include•scdio:.’.h•
#include<stdlib.h>
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);

    int cmp(const void *a,const void *b){
        return(*(int *)a-*(int *)b);
    }
    qsort(arr,n,sizeof(int),cmp);
    for(int i=0;i<n;i++){
        printf("%d ",arr[i]);
```

	Input	E*#'èc{éd	**Got**	
✓	5 67 34 12 98 78	12 34 67 78 98	12 34 67 78 98	✓
✓	10 1 56 78 90 32 56 11 10 90 114	1 10 11 32 56 56 78 90 90 114	1 10 11 32 56 56 78 90 90 114	✓
✓	12 9 8 7 6 5 4 3 2 1 10 11 90	1 2 3 4 5 6 7 8 9 10 11 90	1 2 3 4 5 6 7 8 9 10 11 90	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

M 1-Finding Duplicates-0(n^2) Time Complexity,O(1) Space Complexity

Started on	Wednesday. 8 October 2025. 3:22 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:22 PM
Tlme **taken**	32 secs
Marks	1.00/1.00
Grade	4.00 out of 4.00 {100%)

Question 1 cor •rt fvlark 1.00 out of 1.00 \"

Flnd Duplicate in Array.

Given a read only array of n integers between 1 and n, Gnd one number that repents.

Input Format'

Flrst Llne - Number of elements

n Lines - n Elements

Output Format:

Element x - That is repeated

For example:

Input	**Result**
\ 1 2 3 4	

Answer: (penalty regime: 0 %)

```
fi1ncdude -s tdIO ,h -

z‹Jt main( )
      \rtt n ;
      scanf( "'.  " , 8n):

      int arr[n];
      for ( hot i-0 ;  ion:  1+•)  {
           scanf( " ..!",  &arr [i}  );


      Int  slow  =  arr  E0];
      int  fast  =  arr  Earr E0]] ;

      // Find intersection point in cycle
      while (slow != fast) {
           slow = arr[slow];
           fast  =  arr  [arr[fast ]J;


      // Find entrance to cycle (duplicate)
      slow = 0;
      while (slow != fast) {
           s1ow  -  arr[slow] :
           fast  -  arr[fast] :
      }

     prlntf(" .\  .". slo*) :

      return 0;
 }

```

Input	Expected	Got
10 7 7 6 5 1 2 3 8 4 7		
1 I 2 3 #		

Passed al tests •*

1ui - r' ’ N I i -i ii

2-Finding Duplicates-0(n) Time Complexity,O(1) Space Complexity

Started on	Wednesday, 8 October 2025, 3:22 PM
State	Finished
Completed on	Wednesday, 8 October 2D25, 3:23 PM
T]me taken	33secs
Marks	1.00/1.00
Grade	4.00 out of 4.00 [100'I6)

qMestiofl 1 Correct Mark ›.o0 out of I.00 P .r -

Flnd Duplicate In Array.

Given a read only array of n integers between 1 and n, find one number that repeats.

Input Format:

Flrst Llne - Number of elements

n Lines - n Elements

Output Format:

Element x - That 1s repeated

Input	Result
5 1 1 2 3 #	1

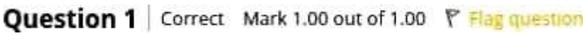
Answer: (penalty reglme: 0 %)

```
 Zinclude <std o.h>

int main() {
    int n;
    scanf(",+.d", &n);

    inc arr[n];
    for(int i = 0: 1 < n: i•+) t
        scanf("id", &arr[iJ ):
    }

    int s1ow = arr[OJ;
    Int fast = arr[arr[0J};

    // Detec£ Cyc}e in rersec t on
    while(slow != fast) T
         slow = arr[sLowJ:
        fast = arr tarr tlast );
    }

    // Feud stai t of °yc1e (dup1zcate)
    sLow = 0:
    while(slow != fast) T
        slow = arr [ sLow};
        fast = arrtlast ;
    T

    print f( "*.d\n", slow);

    return 0;
}

```

	Input	Expected	Got	
	7 6 S 1 2 3 8 4 7			
✓				✓
	4 4			
✓	5 1 1 2 3 4			

3-Print Intersection of 2 sorted arrays-O(m^n)Time Complexity.O(1) Space Complexity

5taete6 or	Wednesday, 8 October 2025. 3:23 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:24 PM
Time taken	44 secs
Marks	1.00/T.00



Question 1 | Correct Mark 1.00 out of 1.00 Flag question

Nnd the ihtersec0on of M o sorted arrays.

DR in omer words,

GNen 2 sorted arrays, find all the element which occur In badly rhe arrays.

The first line ‹on+ains T, the number of test cases. Following I lines contain:

1. Line 1 tannins NI , followed by NI Integers of be frst array
2. Line 2 ¢onuins N2, followed by N2 integers of be second array

Output Format

The Intersection of The arrays In a single line

Example

input:

3 10 17 57

6 2 7 40 15 57 246

outgut:

10 57

Input:

6 1 Z 3 4 5 6

2 1 6

Ourput:

1 6

Input	**Result**

Answer: (penal regime: 0 %)

```
#inc1ude ‹s td zo .h>

in t na in( ) {
    in t T;
    scanf ( "'‹1" , &T);

    whiie (T- - › ‹
        int N1 ,
        scanf ( "z‹I" , &N1 ) ;
        int ar r1 [NJ ] ;
        fa r ( Int 1 = 0; 1 < NJ ; 1‹ ›)
            scanf( ""‹.‹I", aarrl [1] j:
        }

        int N2;
        scanf ( 'Fd " , &N2) ;
        i nt ar r2[N2] ;
        fo r tin t i = 0, i < N2, i++ ) {
            sc an( 'W &arr2 i] );
        }

        int i = 0, j = 0;
        int first = 1, / f\ ag to avoi‹l ext ra spaces he fnre lii r. e tement

        while (i < N1 && j < N2) {
            if (arr1[i] == arr2[j]) {
                if (!first) printf(" ");
                printf("%d", arr1[i]);
                Si rst = 0;
                1*+ :
                j ++;
            } e.t se i f (ar r1 [ 1] < ar r 2[j } ) {
                1++;
            } e1se {


        }
        printf("\n");
    }

    Set ur n 0;
```

	Input	Expected	Got	
✓	1 3 10 17 57 2 7 \0 15 57 246	10 57	10 57	
	1 6 1 2 3 4 5 6 2 1 6	6	1 6	✓

Passed all tests! • '

Correct

VJl'1 i'4 Il‹.O \«LTlil ‹l’ 1 u'ü/ üü

4-Print Intersection of 2 sorted arrays-O(m+n)Time Complexity,O(1) Space Complexity

Started on	Wednesday, 8 October 2025, 3:24 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:25 PM
Time taken	53 secs
MarM	1.00/1.00
	30.00 out of 30.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag questio

nnd the intersection of two sorted arrays.

OR in other words.

Given 2 sorted arrays, IInd all rhe elements which orcur in both rhe arrays.

The [lrst line contains T, rhe number of rest cases. Following T lines contain:

1. Line contains NI, followed by NI integers of rhe lirst array

   LIne 2 contains N2, followed by N2 integers of rhe second array

Output Format

The Intersection of the arrays In a since line

Gample

3 10 17 57

6 2 7 10 15 57 246

Output:

40 57

6 1 2 3 4 5 6

2 1 6

{penalty regime: 0 %)

```
#1nc1ude  <std la .h>

in t  main[) {
    in t  T,
    scanf f"-*d™, BT) ;

    whi 1e  (T --) {
        i nt  N1 ;
        scanf  "v  ", &N1) ;
        1nt  ar r1[N1} ;
        fpr  (in c 1 - 0; 1 < NI ; 1•* ) {
            stanf(" .‹i", aarrl [IJ j:
        }

        in t  N2;
        sc anf ( ”*.rJ ”,  8lJ2) ;
        I nI  ar r2[N2J ;
        for  ( In E 1 = 0; } < N2; 1* r) {
            scanf ( "’\.‹I",  &arr2  1} ) ;


        *nt *  = 0,  j  = 0;
        in t  f1 r st  = 1;   .‘/  co avuid 1eadir g space
        while  (i < N1 && j < hl2) {
            i f  (ar r1 [1}   == arr2 [j ] ) (
                Jf  ( !f1 r st)  pr In t f  "  ") ;
                print f( "id" ,  ar r1[*}  ):
                f1 r st  = 0;


            T e1se  i f  (ar r1 [1]  < ar r 2[j } j
                1++ ;
            }  e1se  (
                §++ ;
            }
        }
        printf("\n");
    }

    re turn  0 ;
}

```

	Input	Expected	Got	
✓	1 3)0 17 57 2 7 \0 15 57 2d6	i0 57	;O 57	
✓	1	\ 6	1 6	✓

Correct

Marks for this submission: 1.00/1.00

5-Pair with Difference-O(n^2)Time Complexity,O(1) Space Complexity

Started on	Wednesday, 8 October 2025. 3.2S PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:26 PM
Time taken	39 secs
Marks	\.00/1.00
Grade	4.00 out of 4.00 (100%)

Question 1 correct Mark I.00 out of 1.00 V

Given an array A of soned integers and another non negative Integer k, find if there exists 2 indices i and j such that A§] - A[i] = k, i != j.

Input rormat:

First Llne n - Number of eiements In an array

Next n Lines - N elements in the array

k Non Negative Inceger

Output Format:

1 - If pair exists

0 - If no pair exists

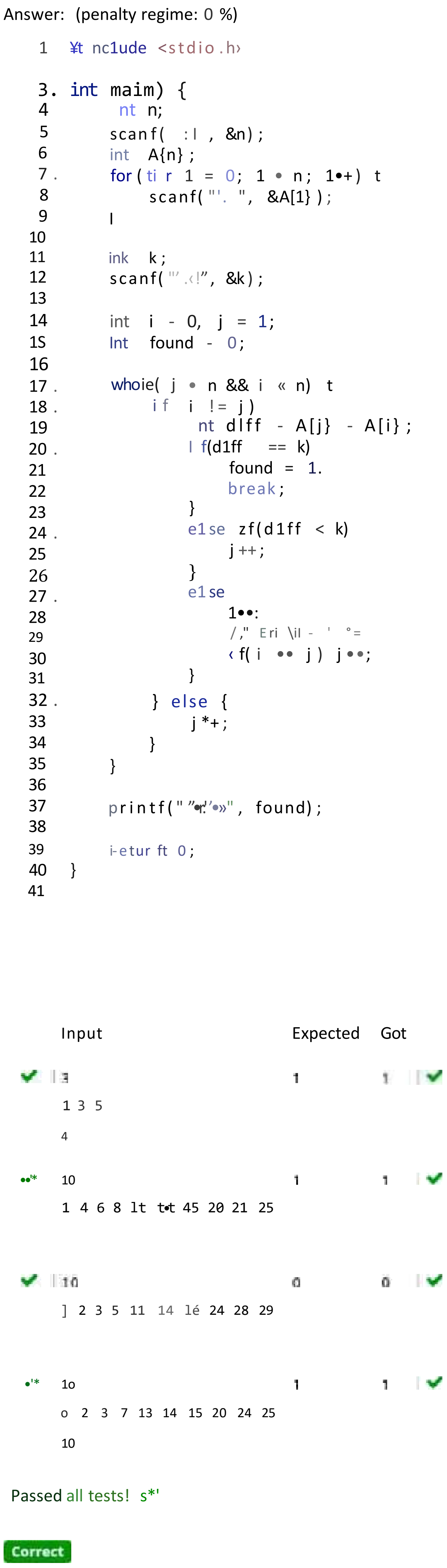
Explanation for the given Sample Testcase:

YES as 5 - 1 = 4

So Return 1.

For example:

Input	Rasult
3	1



Answer: (penalty regime: 0 %)

```
¥t nc1ude <stdio.h›

int maim) {
     nt n;
    scanf(  :l , &n);
    int  A{n};
    for(ti r 1 = 0; 1 • n; 1•+) t
        scanf("'. ", &A[1});
    I

    ink  k;
    scanf("'.‹!", &k);

    int  i - 0,  j = 1;
    Int  found - 0;

    whoie( j • n && i « n)  t
        if  i != j)
            nt dlff - A[j} - A[i};
           l f(d1ff   == k)
                found = 1.
                break;
           }
           e1se zf(d1ff < k)
                j++;
           }
           e1se
                1••:
                /," Eri \il - '  °=
                ‹f( i  •• j ) j••;
           }
        } else {
           j*+;
        }
    }

    printf("”•r.’•»", found);

    i-etur ft 0;
}
```

	Input	Expected	Got	
✓	3 1 3 5 4	1	1	✓
✓	10 1 4 6 8 lt t•t 45 20 21 25	1	1	✓
✓	10] 2 3 5 11 14 lé 24 28 29	0	0	✓
✓	1o o 2 3 7 13 14 15 20 24 25 10	1	1	✓

Passed all tests! s*'

Correct

s-Pair with DiKerence -O(n) Time Complexity,O(1) Space **Complexity**

Started on	Wednesday. 8 October 2025, 3:26 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:26 PM
Time taken	42 secs
Marks	1.00/1 .00
Grade	TOO out oF4.00 (100%)

Question 1 corr•c‹ xxark ›.oo out or i oo \”

Glven an array A of sorted integers and another non negative integer k, find if there exists 2 indices i and j such that Ag] - A[iJ = k, i != j.

Input Format:

First Line n - Number of elements in an array

Next n Lines - N elements in the array

k - Non - Negative integer

Output Format:

1 - If pair exists

0 - If no pair exisrs

Explanation for the given Sample Testcase:

YES as S - 1 = 4

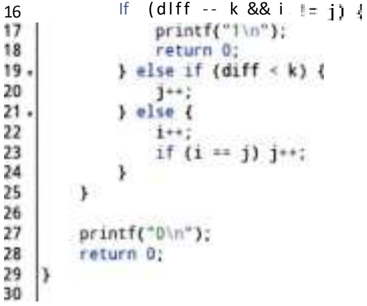
So Return 1.

For example:

Input	Result
3 i 3 5	

Answer: (penalty regime. 0 %)

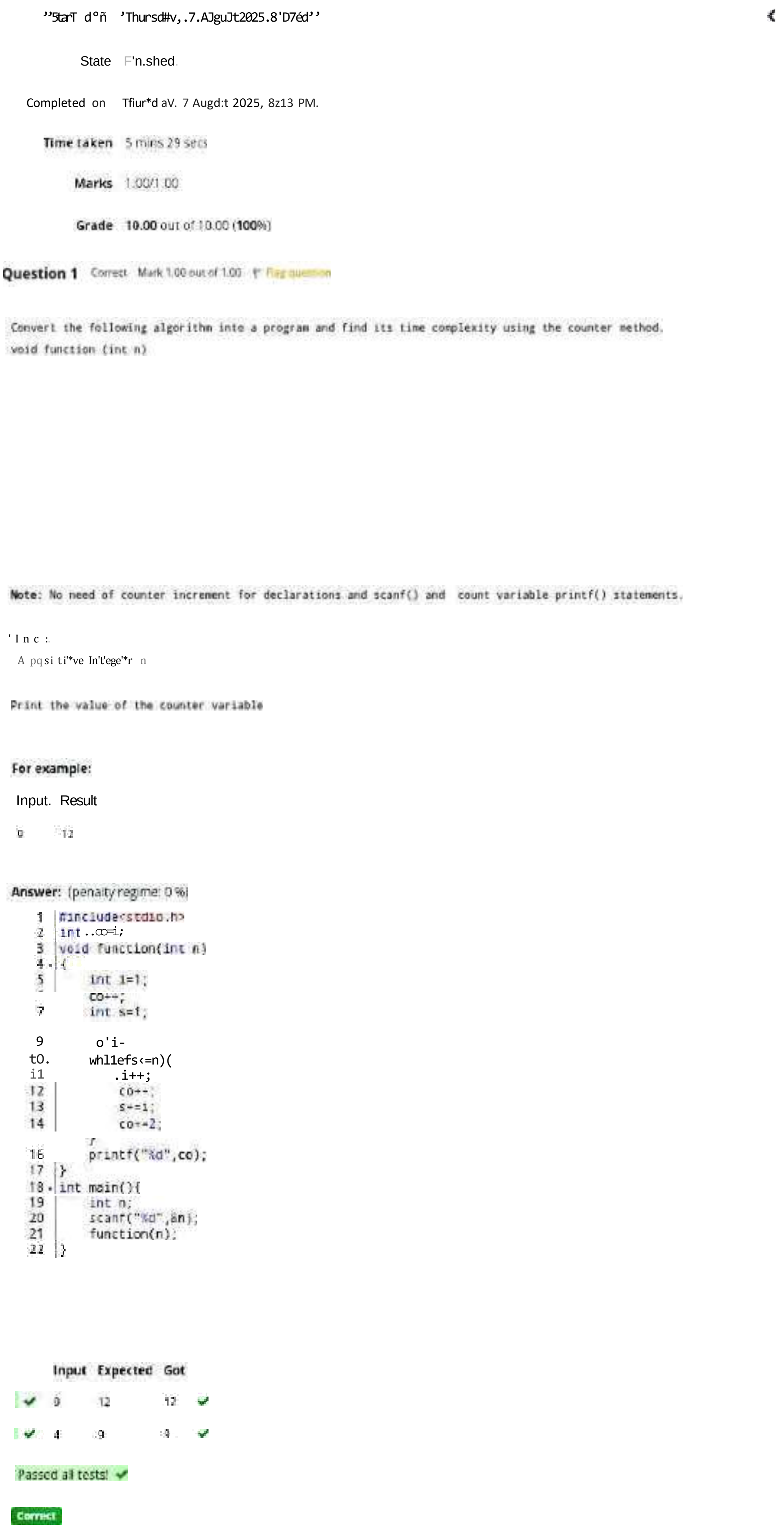
```
\   eInc 1ude •s cdio. h•

but oain( )
    Tnt n;
    scanf(" ‹i", &n);
    tnt A[n]:
    for (Int i = 0, L •- n; i• *) T
        scanf(" ñ , &A[1]);
    0
    but k;
    scanf(" I , &k);

    ant i = 0, j - 1;
    whole (j •. n && 1 < n) {
        Int dlff - A[j]   A[i];
        If (dlff -- k && i != j) {
```



```
            printf("1\n");
            return 0;
        } else if (diff < k) {
            j++;
        } else {
            i++;
            if (i == j) j++;
        }
    }

    printf("0\n");
    return 0;
}
```

Input	Expected	Got
1 4 6 8 12 14 15 20 21 25		

Problem 1:. Finding Complexity using Counter Method



’’5tarT d°ñ	’Thursd#v,.7.AJguJt2025.8'D7éd’’
State	F'n.shed.
Completed on	Tfiur*d aV. 7 Augd:t 2025, 8z13 PM.
Time taken	5 mins 29 secs
Marks	1.00/1.00
Grade	**10.00** out of 10.00 (**100%**)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Convert the following algorithm into a program and find its time complexity using the counter method.
void function (int n)

Note: No need of counter increment for declarations and scanf() and count variable printf() statements.

' I n c :

A pqsi ti'*ve In't'ege'*r n

Print the value of the counter variable

For example:

Input.	Result
9	12

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int ..co=i;
void function(int n)
{
    int i=1;
    co++;
    int s=1;

     o'i-
    whl1efs<=n)(
       .i++;
       co++;
       s+=i;
       co+=2;
    r
    printf("%d",co);
}
int main(){
    int n;
    scanf("%d",&n);
    function(n);
}
```

	Input	Expected	Got	
✓	9	12	12	✓
✓	4	9	9	✓

Passed all tests! ✓

Correct

,   Problem 2: Finding Complexity using Counter method

Shared on .Vzdr.c;Czy 6Augusi202l I0?fi^

State F:n.she d

Completed on Y7edr c, cay, GA'ugusi 2fi25, 3.22 AU

Time reken 17 n:ir s 18 secs

Grade 10.00 out of' 0.03 ! 400%1

Question 1 ^•=• ' V-tk 1.b0 ou' of i.90 \

Convert the folloeing algorithn into a program and find its time complexity using the counter method.

```
void func(int n)



    printf("*");



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

       printf("*");

       br esk ;
```

Note. No need af ccur.ter incremenz far *âac la ra t ien s* and scan {} and counz variabl e pr i nr l i.) sla tements.

In pub :

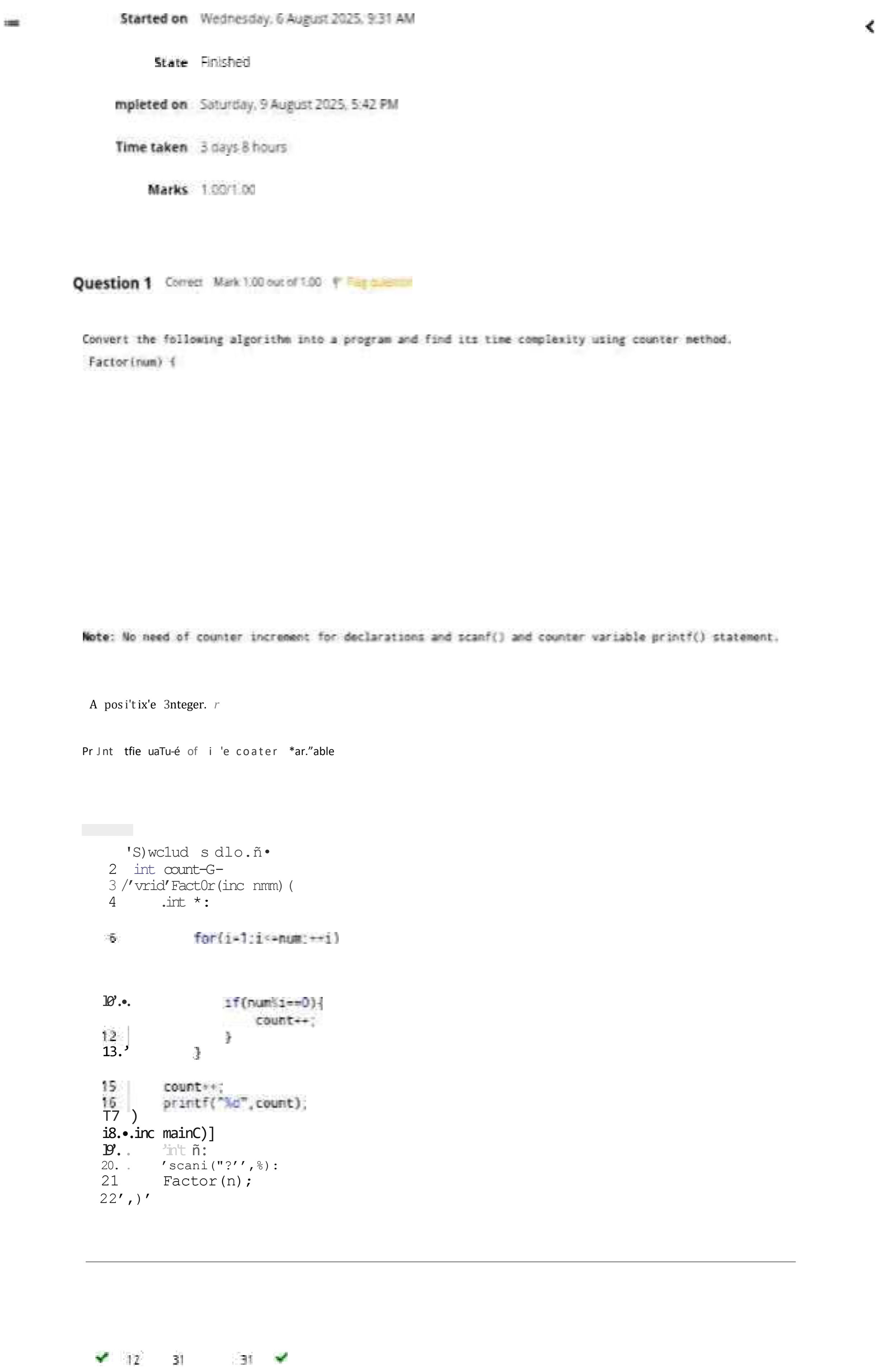
Print the value of the counter variable

Answer: fpenalt\ regime! 0 %)

```
#inc1ude< s cdna. h>
Int   co=0,
'°ld func  int  n)
{

    co= 5-n +2;

}

int main(){

    imt
    scanff"'%",9n);
    tunc(n);
```

	1n pn	Eapected	Got	
✓	1000	5002	5002	✓
✓	143	717	717	✓

Problem 3: Finding Complexity using Counter Method



Started on Wednesday, 6 August 2025, 9:31 AM

State Finished

mpleted on Saturday, 9 August 2025, 5:42 PM

Time taken 3 days 8 hours

Marks 1.00/1.00

Question 1 Correct Mark 1.00 out of 1.00

Convert the following algorithm into a program and find its time complexity using counter method.

Factor(num) {

Note: No need of counter increment for declarations and scanf() and counter variable printf() statement.

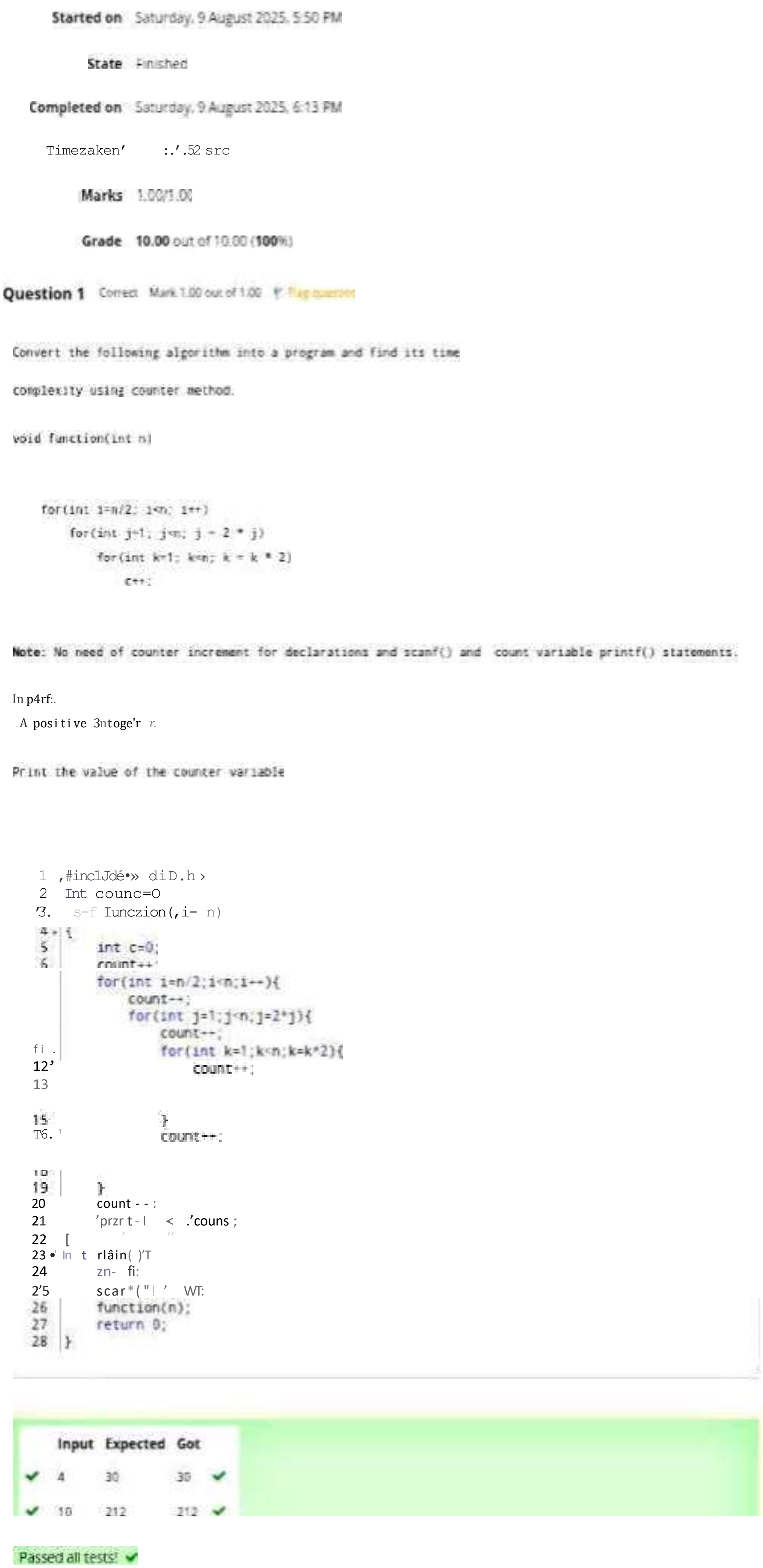
A pos i't ix'e 3nteger. *r*

Pr Jnt tfie uaTu-é of i 'e coater *ar."able

```
'S)wc1ud s dlo.ñ•
 int count-G-
/'vrid'Fact0r(inc nmm) (
     .int *:

          for(i=1:i<=num:++i)


             if(num%i==0){
                count++;
             }
          }

     count++;
     printf("%d",count);
)
.inc mainC)]
     'in't ñ:
     'scani("?'',%):
     Factor(n);
,)'
```

✓ 12 31 31 ✓

Problem 4: Finding Complexity using Counter Method



Started on Saturday, 9 August 2025, 5:50 PM

State Finished

Completed on Saturday, 9 August 2025, 6:13 PM

Timezaken’ :.’.52 src

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100%**)

Question 1 Correct Mark 1.00 out of 1.00

```
Convert the following algorithm into a program and find its time

complexity using counter method.

void function(int n)


    for(int i=n/2; i<n; i++)
        for(int j=1; j<n; j = 2 * j)
            for(int k=1; k<n; k = k * 2)
                c++;


Note: No need of counter increment for declarations and scanf() and  count variable printf() statements.
```

In p4rf:.

.A positive 3ntoge'r r.

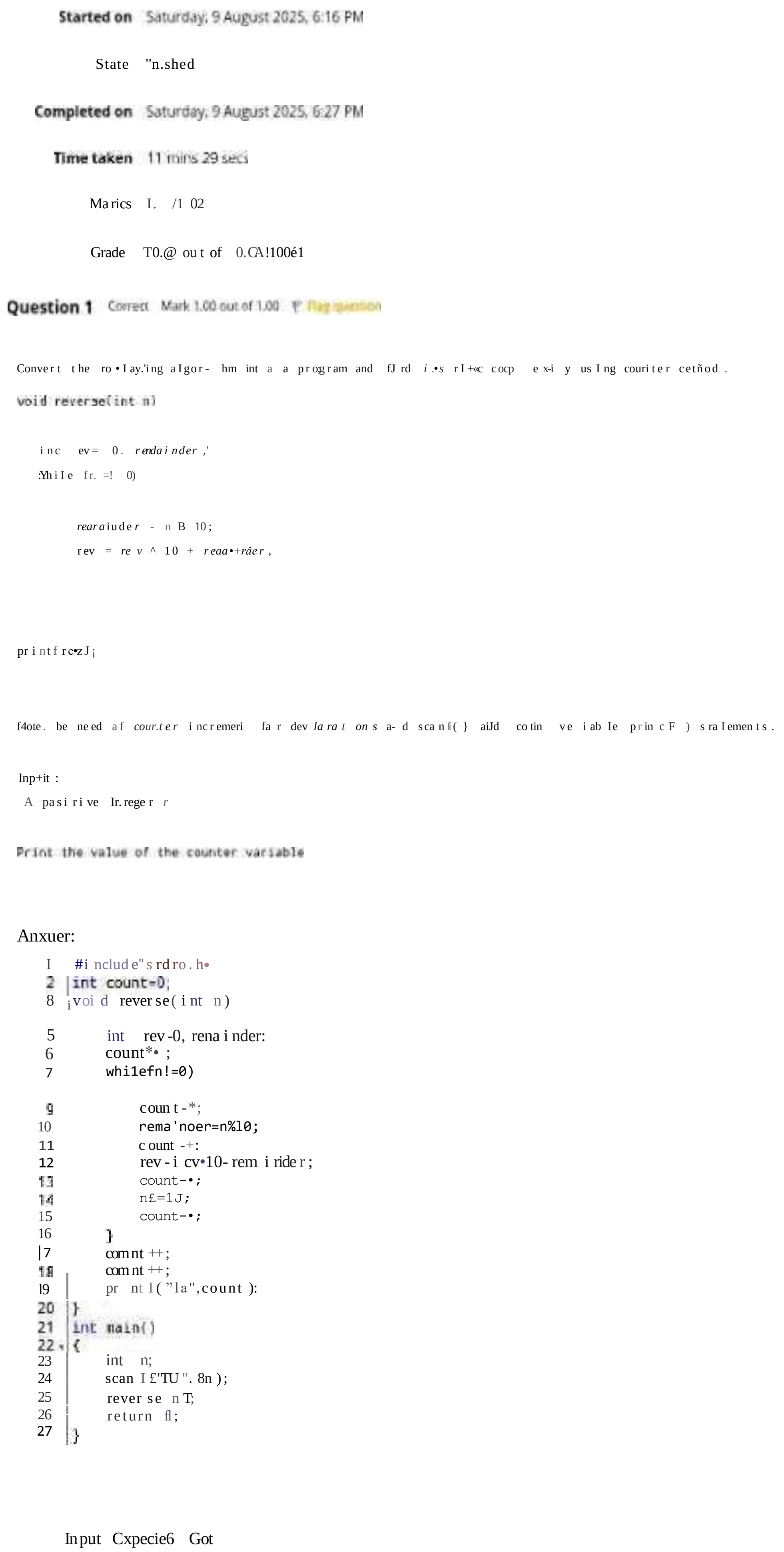
```
Print the value of the counter variable
```

```
,#inc1Jdé•» diD.h›
 Int counc=O
  s-f Iunczion(,i- n)
{
    int c=0;
    count++
    for(int i=n/2;i<n;i++){
        count++;
        for(int j=1;j<n;j=2*j){
            count++;
            for(int k=1;k<n;k=k*2){
                count++;

            }
            count++;

    }
    count - - :
    ’przr t - l    <   .’couns ;
 [
• In  t  rlâin( )’T
    zn-   fi:
    scar*("! ’   WT:
    function(n);
    return 0;
}
```

	Input	Expected	Got	
✓	4	30	30	✓
✓	10	212	212	✓

Passed all tests! ✓

Problem 5: Finding Complexity using counter method



Started on Saturday, 9 August 2025, 6:16 PM

State "n.shed

Completed on Saturday, 9 August 2025, 6:27 PM

Time taken 11 mins 29 secs

Marics I. /1 02

Grade T0.@ out of 0.CA!100é1

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Convert the ro•Iay.'ing aIgor- hm int a a program and fJ rd i .•s rI+«c cocp ex-i y usIng couriter cetñod .

```
void reverse(int n)

   inc  ev= 0. rendainder ,'
   :YhiIe fr. =! 0)

      reraraiuder - n B 10;
      rev = re v ^ 10 + reaa•+râer ,

printfre•zJ¡
```

f4ote. be need af cour.ter incremeri fa r dev larat on s a- d scanf(} aiJd cotin ve iab Ie princF) sraIements.

Inp+it :
A pasirive Ir.reger r

Print the value of the counter variable

Anxuer:

```
#includ e"srdro.h•
int count=0;
void reverse(int n)

     int rev-0, renainder:
     count*• ;
     whi1efn!=0)

          count-*;
          rema'noer=n%l0;
          count -+:
          rev-icv•10-rem iridér;
          count-•;
          n£=1J;
          count-•;
     }
     comnt++;
     comnt++;
     pr ntI(”la",count ):
}
int main()
{
     int n;
     scanI£"TU". 8n);
     reverse nT;
     return fl;
}
```

Input Cxpecie6 Got