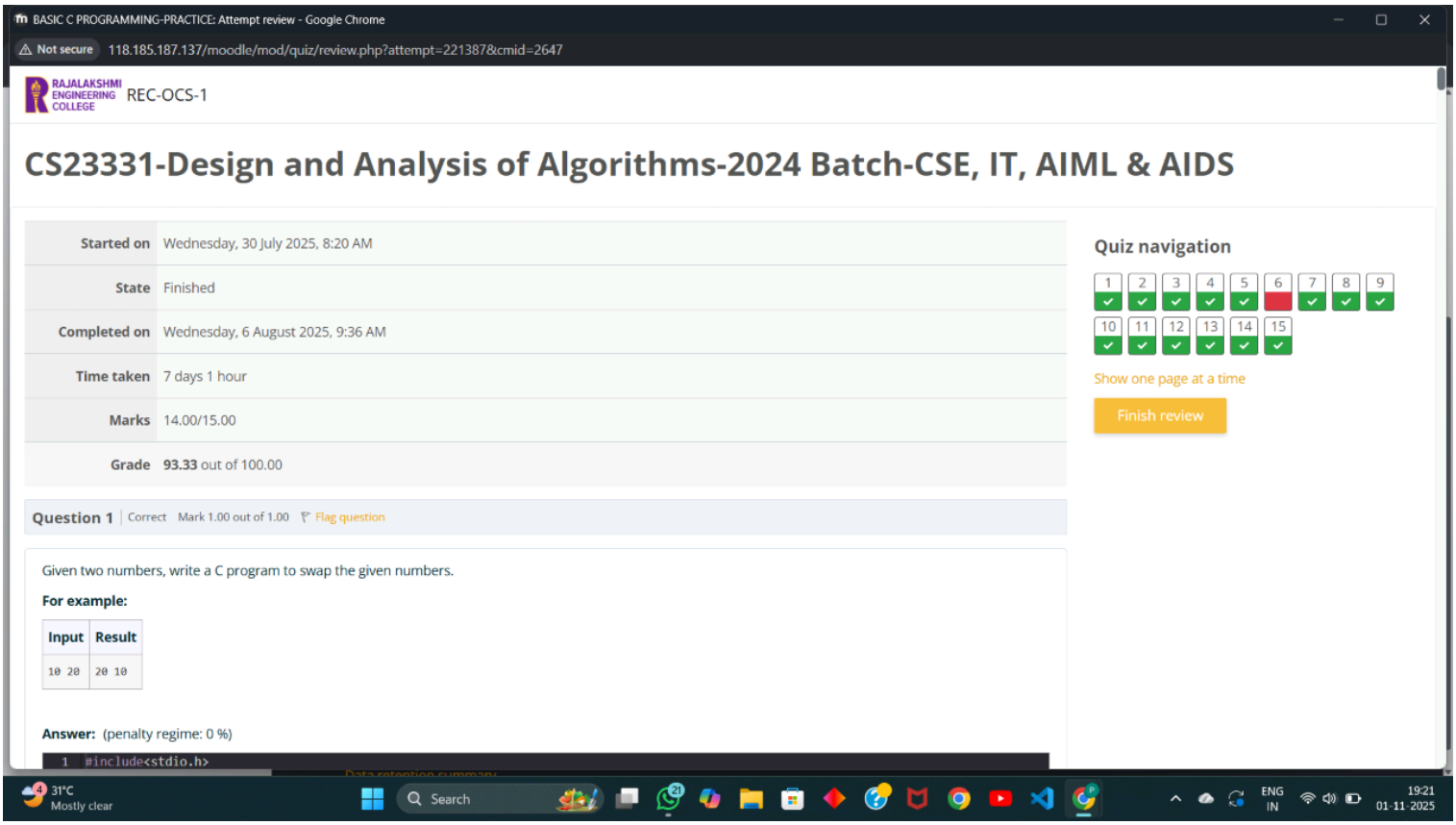
BASIC C PROGRAMMING-PRACTICE: Attempt review - Google Chrome
Not secure
118.185.187.137/moodle/mod/quiz/review.php?attempt=221387&cmid=2647
RAJALAKSHMI ENGINEERING COLLEGE
REC-OCS-1
CS23331-Design and Analysis of Algorithms-2024 Batch-CSE, IT, AIML & AIDS
Started on Wednesday, 30 July 2025, 8:20 AM
State Finished
Completed on Wednesday, 6 August 2025, 9:36 AM
Time taken 7 days 1 hour
Marks 14.00/15.00
Grade 93.33 out of 100.00
Quiz navigation
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15
Show one page at a time
Finish review
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 %)
1 #include<stdio.h>
31°C
Mostly clear
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Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int a,b;
    scanf("%d %d",&a,&b);
    printf("%d %d",b,a);
    return 0;
}
```

	Input	Expected	Got	
✔	10 20	20 10	20 10	✔

Passed all tests! ✔

Data retention summary

31°C Mostly clear

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Question 2 | Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the eligibility of admission for a professional course based on the following criteria:

Marks in Maths >= 65

Marks in Physics >= 55

Marks in Chemistry >= 50

Or

Total in all three subjects >= 180

Sample Test Cases

Test Case 1

Input

70 60 80

Output

The candidate is eligible

Test Case 2

Input

50 80 80

Output

Data retention summary

31°C Mostly clear

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Output

The candidate is not eligible

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int a,b,c;
    scanf("%d %d %d",&a,&b,&c);
    if((a>=65&& b>=55 && c>=50) || (a+b+c) >=180)
        printf("The candidate is eligible");
    else
        printf("The candidate is not eligible");
    return 0;
}
```

	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! ✔

Correct

Marks for this submission: 1.00/1.00.

Data retention summary

31°C Mostly clear

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RAJALAKSHMI ENGINEERING COLLEGE REC-OCS-1

Question 3 | Correct Mark 1.00 out of 1.00 Flag question

Malini goes to BestSave hyper market to buy grocery items. BestSave hyper market provides 10% discount on the bill amount B when ever the bill amount B is more than Rs.2000.

The bill amount B is passed as the input to the program. The program must print the final amount A payable by Malini.

Input Format:

The first line denotes the value of B.

Output Format:

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

Example Input/Output 1:

Input:

1900

Output:

1900

Example Input/Output 2:

Input:

3000

Data retention summary

31°C Mostly clear

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Output:

2700

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int a;
    scanf("%d",&a);
    if(a>2000)
    {
      int b=a-(a*(0.1));
      printf("%d",b);
    }
    else
      printf("%d",a);
    return 0;

}
```

	Input	Expected	Got	
✔	1900	1900	1900	✔
✔	3000	2700	2700	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Data retention summary

31°C Mostly clear

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Question 4 | Correct Mark 1.00 out of 1.00 Flag question

Baba is very kind to beggars and every day Baba donates half of the amount he has when ever a beggar requests him. The money M left in Baba's hand is passed as the input and the number of beggars B who received the alms are passed as the input. The program must print the money Baba had in the beginning of the day.

Input Format:

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

Output Format:

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

Example Input/Output:

Input:

100
2

Output:

400

Explanation:

Baba donated to two beggars. So when he encountered second beggar he had 100*2 = Rs.200 and when he encountered 1st he had 200*2 = Rs.400.

Hot days ahead 31°C Search ENG IN 19:26 01-11-2025

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Baba donated to two beggars. So when he encountered second beggar he had 100*2 = Rs.200 and when he encountered 1st he had 200*2 = Rs.400.

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int a,b;
    scanf("%d %d",&a,&b);
    int c=(a*b)*b;
    printf("%d",c);
    return 0;
}
```

	Input	Expected	Got	
✔	100 2	400	400	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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Question 5 | Correct | Mark 1.00 out of 1.00 | Flag question

The CEO of company ABC Inc wanted to encourage the employees coming on time to the office. So he announced that for every consecutive day an employee comes on time in a week (starting from Monday to Saturday), he will be awarded Rs.200 more than the previous day as "Punctuality Incentive". The incentive I for the starting day (ie on Monday) is passed as the input to the program. The number of days N an employee came on time consecutively starting from Monday is also passed as the input. The program must calculate and print the "Punctuality Incentive" P of the employee.

Input Format:

The first line denotes the value of I.
The second line denotes the value of N.

Output Format:

The first line denotes the value of P.

Example Input/Output:

Input:

500
3

Output:

2100

Explanation:

On Monday the employee receives Rs.500, on Tuesday Rs.700, on Wednesday Rs.900

So total = Rs.2100

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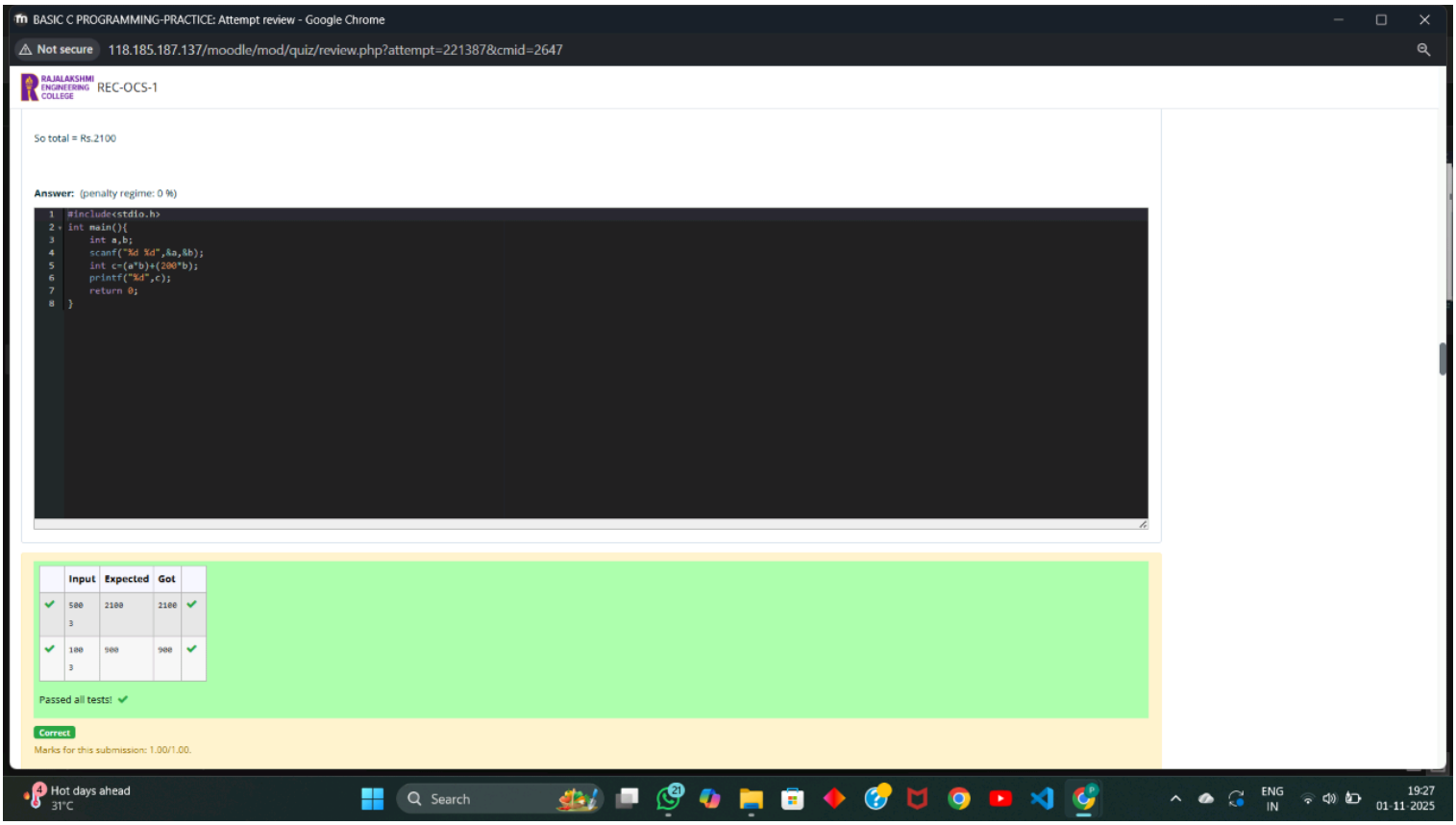
BASIC C PROGRAMMING-PRACTICE: Attempt review - Google Chrome
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RAJALAKSHMI ENGINEERING COLLEGE
REC-OCS-1
So total = Rs.2100
Answer: (penalty regime: 0 %)
#include<stdio.h>
int main(){
int a,b;
scanf("%d %d",&a,&b);
int c=(a*b)+(200*b);
printf("%d",c);
return 0;
}
Input
Expected
Got
500 3
2100
2100
100 3
900
900
Passed all tests!
Correct
Marks for this submission: 1.00/1.00.
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Marks for this submission: 1.00/1.00.

Question 6 | Incorrect | Mark 0.00 out of 1.00 | Flag question

Two numbers M and N are passed as the input. A number X is also passed as the input. The program must print the numbers divisible by X from N to M (inclusive of M and N).

Input Format:

The first line denotes the value of M
The second line denotes the value of N
The third line denotes the value of X

Output Format:

Numbers divisible by X from N to M, with each number separated by a space.

Boundary Conditions:

1 <= M <= 9999999
M < N <= 9999999
1 <= X <= 9999

Example Input/Output 1:

Input:
2
40
7

Output:
35 28 21 14 7

Example Input/Output 2:

Input:
66
121
11

Output:
121 110 99 88 77 66

Answer: (penalty regime: 0 %)

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121
11

Output:
121 110 99 88 77 66

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
        int m,n,x;
    scanf("%d %d %d",&m,&n,&x);
    for(int i=n;i>m;i--){
        if(i%x==0){
            printf("%d ",i);
        }
    }
    return 0;
}
```

	Input	Expected	Got	
✔	2 40 7	35 28 21 14 7	35 28 21 14 7	✔

Your code failed one or more hidden tests.

Your code must pass all tests to earn any marks. Try again.

Incorrect

Marks for this submission: 0.00/1.00.

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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.

For example:

Input	Result
12 3	4 0

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int a,b;
    scanf("%d %d",&a,&b);
    printf("%d\n%d",a/b,a%b);
    return 0;
}
```

	Input	Expected	Got	
✔	12 3	4 0	4 0	✔

Passed all tests! ✔

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RAJALAKSHMI ENGINEERING COLLEGE REC-OCS-1

Question 8 | Correct Mark 1.00 out of 1.00 Flag question

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

For example:

Input	Result
10 20 30	30

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int a,b,c;
    scanf("%d %d %d",&a,&b,&c);
    if(a>b && a>c)
      printf("%d",a);
     else if(b>a && b>c)
      printf("%d",b);
    else
      printf("%d",c);
    return 0;
}
```

	Input	Expected	Got	
✔	10 20 30	30	30	✔

Passed all tests! ✔

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RAJALAKSHMI ENGINEERING COLLEGE REC-OCS-1

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	Result
12	Even
11	Odd

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int a;
    scanf("%d",&a);
    if(a%2==0)
      printf("Even");
    else
      printf("Odd");
    return 0;
}
```

	Input	Expected	Got	
✔	12	Even	Even	✔
✔	11	Odd	Odd	✔

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IN

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Question 10 | Correct Mark 1.00 out of 1.00 Flag question

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

For example:

Input	Result
5	120

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
#include<math.h>
int main(){
    int a,count=1;
    scanf("%d",&a);
    for(int i=1;i<=a;i++){
        count=count*i;
    }
    printf("%d",count);
    return 0;
}
```

	Input	Expected	Got	
✔	5	120	120	✔

Passed all tests! ✔

Question 11 | Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the sum first N natural numbers.

For example:

Input	Result
3	6

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int a,count=0;
    scanf("%d",&a);
    for(int i=1;i<=a;i++){
       count+=i;
    }
    printf("%d",count);
    return 0;
}
```

	Input	Expected	Got	
✔	3	6	6	✔

Passed all tests! ✔

Correct

Question 12 | Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the Nth term in the fibonacci series.

For example:

Input	Result
0	0
1	1
4	3

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int a=0,b=1,c;
    if(n==0){
        printf("0");
        return 0;
    }
    else if(n==1){
        printf("1");
        return 0;
    }
    for(int i=2;i<=n;i++){
        c=a+b;
        a=b;
        b=c;
    }
    printf("%d",b);
    return 0;
}
```

	Input	Expected	Got	
✔	0	0	0	✔
✔	1	1	1	✔
✔	4	3	3	✔

Question 13 | Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find the power of integers.

input:

a b

output:

a^b value

For example:

Input	Result
2 5	32

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
#include<math.h>
int main(){
    int a,b,count=1;
    scanf("%d %d",&a,&b);
    for(int i=1;i<=b;i++){
        count*=a;
    }
    printf("%d",count);
    return 0;
}
```

	Input	Expected	Got	
✔	2 5	32	32	✔

Passed all tests! ✔

Question 14 | Correct Mark 1.00 out of 1.00 Flag question

Write a C program to find Whether the given integer is prime or not.

For example:

Input	Result
7	Prime
9	No Prime

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
#include<math.h>
int main(){
    int a,isPrime=1;
    scanf("%d",&a);
    if(a<=1)
      isPrime=0;
    else{
      for(int i=2;i*i<=a;i++){
         if(a% i==0){
             isPrime=0;
             break;
         }
      }
    }
    if(isPrime)
      printf("Prime");
    else
      printf("No Prime");
    return 0;
}
```

	Input	Expected	Got	
✔	7	Prime	Prime	✔
✔	9	No Prime	No Prime	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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/=10;
    }
    printf("%d",rev);
    return 0;
}
```

	Input	Expected	Got	
✔	123	321	321	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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)
{
    int i= 1;

    int s =1;

    while(s <= n)
    {
         i++;
         s += i;
     }
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

For example:

Input	Result
9	12

Answer: (penalty regime: 0 %)

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

void function(int n) {
    int count=0;
    int i = 1;
    count++;
    int s = 1;
    count++;
    while (s <= n) {
        count++;
        i++;
        count++;
        s += i;
        count++;
    }
    count++;
    printf("%d\n", count);
}
int main(){
    int n;
    scanf("%d",&n);
    function(n);
}
```

	Input	Expected	Got	
✔	9	12	12	✔
✔	4	9	9	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Problem 2: Finding Complexity using Counter method

Started on	Wednesday, 13 August 2025, 8:54 AM
State	Finished
Completed on	Monday, 18 August 2025, 7:44 AM
Time taken	4 days 22 hours
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 func(int n)
{
    if(n==1)
    {
      printf("*");
    }
    else
    {
     for(int i=1; i<=n; i++)
     {
       for(int j=1; j<=n; j++)
       {
          printf("*");
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
void func(int n){
    int count=0;
    count++;
    if(n==1)
      count++;
    else{
        for(int i=1;i<=n;i++){
            count++;
            for(int j=1;j<=n;j++){
                count++;
                count++;
                count++;
                break;
                count++;
            }
            count++;
        }
        count++;
    }
    printf("%d",count);
}
int main(){
    int n;
    scanf("%d",&n);
    func(n);
}
```

	Input	Expected	Got	
✔	2	12	12	✔
✔	1000	5002	5002	✔
✔	143	717	717	✔

Passed all tests! ✔

Problem 3: Finding Complexity using Counter Method

Started on	Wednesday, 20 August 2025, 8:48 AM
State	Finished
Completed on	Wednesday, 20 August 2025, 9:23 AM
Time taken	35 mins 35 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 counter method.

```
Factor(num) {
{
   for (i = 1; i <= num;++i)
   {
    if (num % i== 0)
       {
         printf("%d ", i);
       }
    }
 }
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer:

```c
#include<stdio.h>
int main(){
    int num;
    scanf("%d",&num);
    int c=0;
    for(int i=1;i<=num;i++){
        c++;
        if(num%i==0){
            c++;
        }
        c++;
    }
    c++;
    printf("%d",c);
    return 0;
}
```

	Input	Expected	Got	
✔	12	31	31	✔
✔	25	54	54	✔
✔	4	12	12	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00

Problem 4: Finding Complexity using Counter Method

Started on	Wednesday, 20 August 2025, 9:24 AM
State	Finished
Completed on	Wednesday, 20 August 2025, 9:28 AM
Time taken	4 mins 11 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 counter method.

```
void function(int n)
{
    int c= 0;
    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.

Input:

A positive Integer n

Output:

Print the value of the counter variable

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer:

```c
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int c=0;
    c++;
    for(int i=n/2;i<n;i++){
        c++;
        for(int j=1;j<n;j=2*j){
            c++;
            for(int k=1;k<n;k=k*2){
                c++;
                c++;
            }
            c++;
        }
        c++;
    }
    c++;
    printf("%d",c);
    return 0;
}
```

	Input	Expected	Got	
✔	4	30	30	✔
✔	10	212	212	✔

Passed all tests! ✔

Correct

Problem 5: Finding Complexity using counter method

Started on	Wednesday, 20 August 2025, 9:29 AM
State	Finished
Completed on	Wednesday, 20 August 2025, 9:33 AM
Time taken	3 mins 48 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 counter method.

```
void reverse(int n)
{
   int rev = 0, remainder;
   while (n != 0)
    {
        remainder = n % 10;
        rev = rev * 10 + remainder;
        n/= 10;

    }
print(rev);
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer:

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

	Input	Expected	Got	
✔	12	11	11	✔
✔	1234	19	19	✔

Passed all tests! ✔

Correct

1-Number of Zeros in a Given Array

Started on	Monday, 22 September 2025, 12:02 PM
State	Finished
Completed on	Monday, 22 September 2025, 12:09 PM
Time taken	7 mins 11 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 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 numb

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 %)

```c
#include <stdio.h>

// Function to find the first occurrence of 0 using Divide and Conquer
int findFirstZero(int arr[], int low, int high, int size) {
    if (high >= low) {
        int mid = (low + high) / 2;

        // Check if this is the first occurrence of 0
        if ((mid == 0 || arr[mid - 1] == 1) && arr[mid] == 0)
            return mid;

```

```c

        // If element is 1, then first zero must be on the right
        if (arr[mid] == 1)
            return findFirstZero(arr, mid + 1, high, size);

        // Else, check in the left half
        return findFirstZero(arr, low, mid - 1, size);
    }

    return -1; // No zero found
}

int main() {
    int m;
    scanf("%d", &m);

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

    int firstZeroIndex = findFirstZero(arr, 0, m - 1, m);

    if (firstZeroIndex == -1)
        printf("0\n"); // No zeroes
    else
        printf("%d\n", m - firstZeroIndex); // Number of zeroes

    return 0;
}
```

	Input	Expected	Got	
✔	5 1 1 1 0 0	2	2	✔
✔	10 1 1 1	0	0	✔

	1 1 1 1 1 1 1 1			
✔	8 0 0 0 0 0 0 0 0	8	8	✔
✔	17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0	2	2	✔

Passed all tests! ✔

2-Majority Element

Started on	Wednesday, 17 September 2025, 8:26 AM
State	Finished
Completed on	Monday, 22 September 2025, 7:34 PM
Time taken	5 days 11 hours
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:

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 majorityElement(int* nums, int numsSize) {
    int count = 0;
    int candidate = 0;

    for (int i = 0; i < numsSize; i++) {
        if (count == 0) {
            candidate = nums[i];
        }
        if (nums[i] == candidate) {
            count++;
        } else {
            count--;
        }
    }

    return candidate;
}

int main() {
    int n;
    scanf("%d", &n);  // Read the size of the array

    int nums[n];
    for (int i = 0; i < n; i++) {
        scanf("%d", &nums[i]);  // Read each element
    }

    int result = majorityElement(nums, n);
    printf("%d\n", result);  // Output the majority element

    return 0;
}
```

	Input	Expected	Got	
✔	3 3 2 3	3	3	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

3-Finding Floor Value

Started on	Monday, 22 September 2025, 7:35 PM
State	Finished
Completed on	Monday, 22 September 2025, 7:36 PM
Time taken	58 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 %)

```c
#include <stdio.h>

// Binary search to find floor of x
int findFloor(int arr[], int low, int high, int x) {
    int result = -1;  // If no floor is found, return -1

    while (low <= high) {
        int mid = low + (high - low) / 2;

        if (arr[mid] == x) {
            return arr[mid];  // Exact match is the floor
        } else if (arr[mid] < x) {
            result = arr[mid];  // Possible floor, search right
            low = mid + 1;
        } else {
            high = mid - 1;  // Search left
        }
    }
```

```c
    }

    return result;
}

int main() {
    int n, x;
    scanf("%d", &n);  // Read size of array

    int arr[n];
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);  // Read array elements
    }

    scanf("%d", &x);  // Read x

    int floor = findFloor(arr, 0, n - 1, x);

    printf("%d\n", floor);

    return 0;
}
```

	Input	Expected	Got	
✔	6 1 2 8 10 12 19 5	2	2	✔
✔	5 10 22 85 108 129 100	85	85	✔

	10 12 19 5			
✔	5 10 22 85 108 129 100	85	85	✔
✔	7 3 5 7 9 11 13 15 10	9	9	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Back to Course

4-Two Elements sum to x

Started on	Monday, 22 September 2025, 7:36 PM
State	Finished
Completed on	Monday, 22 September 2025, 7:37 PM
Time taken	1 min 5 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 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

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 – 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 %)

```c
#include <stdio.h>

// Recursive function using divide and conquer
int findPair(int arr[], int low, int high, int x, int* a, int* b) {
    if (low >= high) {
        return 0; // No pair found
    }

    int sum = arr[low] + arr[high];

    if (sum == x) {
        *a = arr[low];
        *b = arr[high];
        return 1; // Pair found
    } else if (sum < x) {
        return findPair(arr, low + 1, high, x, a, b);
    } else {
        return findPair(arr, low, high - 1, x, a, b);
```

```
    } else {
        return findPair(arr, low, high - 1, x, a, b);
    }
}

int main() {
    int n, x;
    scanf("%d", &n);  // Size of array

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

    scanf("%d", &x);  // Target sum value

    int a, b;
    if (findPair(arr, 0, n - 1, x, &a, &b)) {
        printf("%d\n%d\n", a, b);
    } else {
        printf("No\n");
    }

    return 0;
}
```

	Input	Expected	Got	
✔	4 2 4 8 10 14	4 10	4 10	✔
✔	5 2 4 6 8 10 100	No	No	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

5-Implementation of Quick Sort

Started on	Monday, 22 September 2025, 7:37 PM
State	Finished
Completed on	Monday, 22 September 2025, 7:40 PM
Time taken	2 mins 55 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

Write a Program to Implement the Quick Sort Algorithm

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:

Input	Result
5 67 34 12 98 78	12 34 67 78 98

Answer:

```c
#include <stdio.h>

// Function to swap two integers
void swap(int a[], int i, int j) {
    int temp = a[i];
    a[i] = a[j];
    a[j] = temp;
}

// Partition function for quicksort
int partition(int a[], int low, int high) {
    int pivot = a[high]; // choose last element as pivot
```

```
    int i = low - 1;

    for (int j = low; j < high; j++) {
        if (a[j] <= pivot) {
            i++;
            swap(a, i, j);
        }
    }
    swap(a, i + 1, high);
    return i + 1;
}

// Quick Sort function
void quickSort(int a[], int low, int high) {
    if (low < high) {
        int pi = partition(a, low, high);
        quickSort(a, low, pi - 1);
        quickSort(a, pi + 1, high);
    }
}

// Main function
int main() {
    int n;

    // Input number of elements
    scanf("%d", &n);

    int arr[100]; // assuming max 100 elements

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

    // Sort the array
    quickSort(arr, 0, n - 1);

    // Output the sorted array
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }

    return 0;
```

	Input	Expected	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	✔

1-G-Coin Problem

Started on	Sunday, 31 August 2025, 9:30 AM
State	Finished
Completed on	Sunday, 31 August 2025, 9:32 AM
Time taken	1 min 48 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

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 the minimum number of coins and/or notes needed to make the change.

Input Format:

Take an integer from stdin.

Output Format:

print the integer which is change of the number.

Example Input :

64

Output:

4

Explanaton:

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

Answer: (penalty regime: 0 %)

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

int main() {
    int denominations[] = {1000, 500, 100, 50, 20, 10, 5, 2, 1};
    int n = sizeof(denominations) / sizeof(denominations[0]);
    int value, count = 0;

    // Input value from user
    scanf("%d", &value);

    // Greedy approach: use largest denomination first
    for (int i = 0; i < n; i++) {
        if (value >= denominations[i]) {
            count += value / denominations[i];
            value = value % denominations[i];
        }
    }

    // Output the minimum number of coins/notes
    printf("%d\n", count);

    return 0;
}

```

	Input	Expected	Got	
✔	49	5	5	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

2-G-Cookies Problem

Started on	Thursday, 21 August 2025, 9:06 PM
State	Finished
Completed on	Thursday, 21 August 2025, 9:10 PM
Time taken	4 mins 25 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

Assume you are an awesome parent and want to give your children some cookies. But, you should give each child at most one cookie.

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

1 1

Output:

1

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.

Constraints:

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

Constraints:

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

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

1 <= g[i], s[j] <= 2^31 - 1

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
#include <stdlib.h>

// Comparison function for qsort
int compare(const void *a, const void *b) {
    return (*(int *)a - *(int *)b);
}

// Function to find the maximum number of content children
int findContentChildren(int* g, int gSize, int* s, int sSize) {
    // Sort greed factors and cookie sizes
    qsort(g, gSize, sizeof(int), compare);
    qsort(s, sSize, sizeof(int), compare);

    int i = 0, j = 0; // i for children, j for cookies
    int contentChildren = 0;

    while (i < gSize && j < sSize) {
        if (s[j] >= g[i]) {
            contentChildren++;
            i++;
        }
        j++;
    }

    return contentChildren;
}

int main() {
    int gSize, sSize;

    // Read number of children
    scanf("%d", &gSize);
    int g[gSize];
    for (int i = 0; i < gSize; i++) {
        scanf("%d", &g[i]);
    }

```

```c
int main() {
    int gSize, sSize;

    // Read number of children
    scanf("%d", &gSize);
    int g[gSize];
    for (int i = 0; i < gSize; i++) {
        scanf("%d", &g[i]);
    }

    // Read number of cookies
    scanf("%d", &sSize);
    int s[sSize];
    for (int i = 0; i < sSize; i++) {
        scanf("%d", &s[i]);
    }

    // Compute and print result
    int result = findContentChildren(g, gSize, s, sSize);
    printf("%d\n", result);

    return 0;
}
```

	Input	Expected	Got	
✔	2 1 2 3 1 2 3	2	2	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

3-G-Burger Problem

Started on	Thursday, 21 August 2025, 9:11 PM
State	Finished
Completed on	Thursday, 21 August 2025, 9:27 PM
Time taken	15 mins 45 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

A person needs to eat burgers. Each burger contains a count of calorie. After eating the burger, the person needs to run a distance to burn out his calories. If he has eaten i burgers with c calories each, then he has to run at least $3^i * c$ kilometers to burn out the calories. For example, if he ate 3 burgers with the count of calorie in the order: [1, 3, 2], the kilometers he needs to run are $(3^0 * 1) + (3^1 * 3) + (3^2 * 2) = 1 + 9 + 18 = 28$. But this is not the minimum, so need to try out other orders of consumption and choose the minimum value. Determine the minimum distance he needs to run. Note: He can eat burger in any order and use an efficient sorting algorithm.Apply greedy approach to solve the problem.

Input Format

First Line contains the number of burgers

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

Output Format

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

Sample Input

```
3
5 10 7
```

Sample Output

```
76
```

Test	Input	Result
Test Case 1	3 1 3 2	18

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
#include <math.h>

int main(){
    int n;
    int dist;
    scanf("%d",&n);
    int arr[100];
    for(int i=0 ; i<n ; i++)
        scanf("%d",&arr[i]);

    for(int i=0 ; i<n ; i++){
        for(int j=0 ; j<n ; j++){
            if(arr[i] > arr[j]){
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
    }

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

	Test	Input	Expected	Got	
✔	Test Case 1	3 1 3 2	18	18	✔
✔	Test Case 2	4 7 4 9 6	389	389	✔
✔	Test Case 3	3 5 10 7	76	76	✔

Passed all tests! ✔

4-G-Array Sum max problem

Started on	Thursday, 21 August 2025, 9:28 PM
State	Finished
Completed on	Thursday, 21 August 2025, 9:30 PM
Time taken	1 min 28 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 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).

Input Format:

First line specifies the number of elements-n

The next n lines contain the array elements.

Output Format:

Maximum Array Sum to be printed.

Sample Input:

5

2 5 3 4 0

Sample output:

40

Answer: (penalty regime: 0 %)

```
1  #include <stdio.h>
2  #include <stdlib.h>
3
```

```c
// Comparison function for ascending order
int compare(const void *a, const void *b) {
    return (*(int *)a - *(int *)b);
}

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

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

    // Sort the array in ascending order
    qsort(arr, n, sizeof(int), compare);

    // Calculate the maximum sum of arr[i] * i
    long long maxSum = 0;
    for (int i = 0; i < n; i++) {
        maxSum += (long long)arr[i] * i;
    }

    printf("%lld\n", maxSum);
    return 0;
}
```

	Input	Expected	Got	
✔	5 2 5 3 4 0	40	40	✔
✔	10 2 2 2 4 4 3	191	191	✔

5-G-Product of Array elements-Minimum

Started on	Thursday, 21 August 2025, 9:30 PM
State	Finished
Completed on	Thursday, 21 August 2025, 9:33 PM
Time taken	2 mins 50 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>
#include <stdlib.h>

// Comparison function for ascending order
int compareAsc(const void *a, const void *b) {
    return (*(int *)a - *(int *)b);
}
```

```c

// Comparison function for descending order
int compareDesc(const void *a, const void *b) {
    return (*(int *)b - *(int *)a);
}

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

    int array_One[n], array_Two[n];

    // Read array_One
    for (int i = 0; i < n; i++) {
        scanf("%d", &array_One[i]);
    }

    // Read array_Two
    for (int i = 0; i < n; i++) {
        scanf("%d", &array_Two[i]);
    }

    // Sort array_One in ascending order
    qsort(array_One, n, sizeof(int), compareAsc);

    // Sort array_Two in descending order
    qsort(array_Two, n, sizeof(int), compareDesc);

    // Calculate the minimum sum of products
    long long minSum = 0;
    for (int i = 0; i < n; i++) {
        minSum += (long long)array_One[i] * array_Two[i];
    }

    printf("%lld\n", minSum);
    return 0;
}

```

	Input	Expected	Got	
✔	3 1 2 3 4 5	28	28	✔

	Input	Expected	Got	
✔	3 1 2 3 4 5 6	28	28	✔
✔	4 7 5 1 2 1 3 4 1	22	22	✔
✔	5 20 10 30 10 40 8 9 4 3 10	590	590	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

1-DP-Playing with Numbers

Started on	Wednesday, 8 October 2025, 3:16 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:16 PM
Time taken	51 secs
Grade	**10.00** out of 10.00 (**100**%)

Question 1 | Correct Mark 10.00 out of 10.00 Flag question

Playing with Numbers:

Ram and Sita are playing with numbers by giving puzzles to each other. Now it was Ram term, so he gave Sita a positive integer 'n' and two numbers 1 and 3. He asked her to find the possible ways by which the number n can be represented using 1 and 3.Write any efficient algorithm to find the possible ways.

Example 1:

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
1+1+3+1
1+3+1+1
3+1+1+1

Input Format

First Line contains the number n

Output Format

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

Sample Input

6

Sample Output

6

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

long long countWays(int n) {
    long long dp[n + 1];
    dp[0] = 1;

    for (int i = 1; i <= n; i++) {
        dp[i] = 0;
        if (i - 1 >= 0)
            dp[i] += dp[i - 1];
        if (i - 3 >= 0)
            dp[i] += dp[i - 3];
    }

    return dp[n];
}

int main() {
    int n;
    scanf("%d", &n);
    printf("%lld\n", countWays(n));
    return 0;
}
```

	Input	Expected	Got	
✔	6	6	6	✔
✔	25	8641	8641	✔
✔	100	24382819596721629	24382819596721629	✔

Passed all tests! ✔

Correct

Marks for this submission: 10.00/10.00.

2-DP-Playing with chessboard

Started on	Wednesday, 8 October 2025, 3:17 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:18 PM
Time taken	44 secs
Grade	**10.00** out of 10.00 (**100**%)

Question 1 | Correct Mark 10.00 out of 10.00 Flag question

Playing with Chessboard:

Ram is given with an n*n chessboard with each cell with a monetary value. 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 black rook position (n-1, n-1) constrained that he needs to reach the position by traveling the maximum monetary path under the condition that he can only travel one step right or one step down the board. Help ram to achieve it by providing an efficient DP algorithm.

Example:

Input

3

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:1+2+8+7+1=19

Input Format

First Line contains the integer n

The next n lines contain the n*n chessboard values

Output Format

Print Maximum monetary value of the path

Explanation:

Totally there will be 6 paths among that the optimal is

Optimal path value:1+2+8+7+1=19

Input Format

First Line contains the integer n

The next n lines contain the n*n chessboard values

Output Format

Print Maximum monetary value of the path

Answer: (penalty regime: 0 %)

```c

#include <stdio.h>

int max(int a, int b) {
    return (a > b) ? a : b;
}

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

    int board[n][n];
    long long dp[n][n];

    for (int i = 0; i < n; i++)
        for (int j = 0; j < n; j++)
            scanf("%d", &board[i][j]);

    for (int i = 0; i < n; i++) {
        for (int j = 0; j < n; j++) {
            if (i == 0 && j == 0)
                dp[i][j] = board[i][j];
            else if (i == 0)
                dp[i][j] = dp[i][j - 1] + board[i][j];
            else if (j == 0)
                dp[i][j] = dp[i - 1][j] + board[i][j];
            else
                dp[i][j] = max(dp[i - 1][j], dp[i][j - 1]) + board[i][j];
        }
    }

```

```
31
32      printf("%lld\n", dp[n - 1][n - 1]);
33      return 0;
34  }
35
36
```

	Input	Expected	Got	
✔	3 1 2 4 2 3 4 8 7 1	19	19	✔
✔	3 1 3 1 1 5 1 4 2 1	12	12	✔
✔	4 1 1 3 4 1 5 7 8 2 3 4 6 1 6 9 0	28	28	✔

Passed all tests! ✔

Correct

Marks for this submission: 10.00/10.00.

3-DP-Longest Common Subsequence

Started on	Wednesday, 8 October 2025, 3:18 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:19 PM
Time taken	1 min
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 strings find the length of the common longest subsequence(need not be contiguous) between the two.

Example:

s1: ggtabe

s2: tgatasb

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

The length is 4

Solveing it using Dynamic Programming

For example:

Input	Result
aab	2

azb	

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
#include <string.h>

int max(int a, int b) {
    return (a > b) ? a : b;
}

int lcs(char *s1, char *s2) {
    int m = strlen(s1);
    int n = strlen(s2);
    int dp[m + 1][n + 1];

    for (int i = 0; i <= m; i++)
        for (int j = 0; j <= n; j++)
            dp[i][j] = 0;

    for (int i = 1; i <= m; i++) {
        for (int j = 1; j <= n; j++) {
            if (s1[i - 1] == s2[j - 1])
                dp[i][j] = dp[i - 1][j - 1] + 1;
            else
                dp[i][j] = max(dp[i - 1][j], dp[i][j - 1]);
        }
    }

    return dp[m][n];
}

int main() {
    char s1[100], s2[100];

    scanf("%s", s1);
    scanf("%s", s2);

    int result = lcs(s1, s2);
    printf("%d\n", result);

    return 0;
}
```

	Input	Expected	Got	
✔	aab azb	2	2	✔
✔	ABCD ABCD	4	4	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Back to Course

4-DP-Longest non-decreasing Subsequence

Started on	Wednesday, 8 October 2025, 3:20 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:20 PM
Time taken	23 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:

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

Eg:

Input:9

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

the subsequence is [-1,2,2,2,2,3]

Output:6

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

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

    for (int i = 1; i < n; i++) {
        for (int j = 0; j < i; j++) {
            if (arr[i] >= arr[j]) {
                dp[i] = (dp[i] > dp[j] + 1) ? dp[i] : dp[j] + 1;
```

```c
                dp[i] = (dp[i] > dp[j] + 1) ? dp[i] : dp[j] + 1;
            }
        }
    }

    int max_length = dp[0];
    for (int i = 1; i < n; i++) {
        if (dp[i] > max_length) {
            max_length = dp[i];
        }
    }

    return max_length;
}

int main() {
    int arr[] = {-1, 3, 4, 5, 2, 2, 2, 2, 3};
    int n = sizeof(arr) / sizeof(arr[0]);

    int result = longest_non_decreasing_subsequence(arr, n);
    printf("%d\n", result);

    return 0;
}
```

	Input	Expected	Got	
✔	9 -1 3 4 5 2 2 2 2 3	6	6	✔
✔	7 1 2 2 4 5 7 6	6	6	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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

Started on	Wednesday, 8 October 2025, 3:21 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:21 PM
Time taken	41 secs
Marks	1.00/1.00
Grade	**4.00** out of 4.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

Find Duplicate in Array.

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

Input Format:

First Line - Number of elements

n Lines - n Elements

Output Format:

Element x - That is repeated

For example:

Input	Result
5 1 1 2 3 4	1

Answer: (penalty regime: 0 %)

```
#include <stdio.h>

int find_duplicate(int arr[], int n) {
    int slow = arr[0];
    int fast = arr[0];
```

```c
    do {
        slow = arr[slow];
        fast = arr[arr[fast]];
    } while (slow != fast);

    slow = arr[0];
    while (slow != fast) {
        slow = arr[slow];
        fast = arr[fast];
    }
    return slow;
}

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

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

    int duplicate = find_duplicate(arr, n);
    printf("%d\n", duplicate);

    return 0;
}
```

	Input	Expected	Got	
✔	11 10 9 7 6 5 1 2 3 8 4 7	7	7	✔
✔	5 1 2 3 4 4	4	4	✔
✔	5 1 1 2 3 4	1	1	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

2-Finding Duplicates-O(n) 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
Time taken	34 secs
Marks	1.00/1.00
Grade	**4.00** out of 4.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

Find Duplicate in Array.

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

Input Format:

First Line - Number of elements

n Lines - n Elements

Output Format:

Element x - That is repeated

For example:

Input	Result
5 1 1 2 3 4	1

Answer: (penalty regime: 0 %)

```
#include <stdio.h>

int find_duplicate(int arr[], int n) {
    int slow = arr[0];
    int fast = arr[0];
```

```
    do {
        slow = arr[slow];
        fast = arr[arr[fast]];
    } while (slow != fast);

    slow = arr[0];
    while (slow != fast) {
        slow = arr[slow];
        fast = arr[fast];
    }
    return slow;
}

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

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

    int duplicate = find_duplicate(arr, n);
    printf("%d\n", duplicate);

    return 0;
}
```

	Input	Expected	Got	
✔	11 10 9 7 6 5 1 2 3 8 4 7	7	7	✔
✔	5 1 2 3 4 4	4	4	✔
✔	5 1 1 2 3 4	1	1	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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

Started on	Wednesday, 8 October 2025, 3:23 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:23 PM
Time taken	42 secs
Marks	1.00/1.00
Grade	**30.00** out of 30.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

Find the intersection of two sorted arrays.

OR in other words,

Given 2 sorted arrays, find all the elements which occur in both the arrays.

Input Format

- The first line contains T, the number of test cases. Following T lines contain:

1. Line 1 contains N1, followed by N1 integers of the first array
2. Line 2 contains N2, followed by N2 integers of the second array

Output Format

The intersection of the arrays in a single line

Example

Input:

1

3 10 17 57

6 2 7 10 15 57 246

Output:

Input:

1

6 1 2 3 4 5 6

2 1 6

Output:

1 6

For example:

Input	Result
1 3 10 17 57 6 2 7 10 15 57 246	10 57

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

void findIntersection(int arr1[], int n1, int arr2[], int n2) {
    int i = 0, j = 0;
    while (i < n1 && j < n2) {
        if (arr1[i] == arr2[j]) {
            printf("%d ", arr1[i]);
            i++;
            j++;
        } else if (arr1[i] < arr2[j]) {
            i++;
        } else {
            j++;
        }
    }
    printf("\n");
}

int main() {
    int T;
    scanf("%d", &T);

    while (T--) {
        int n1;
        scanf("%d", &n1);
        int arr1[n1];
        for (int i = 0; i < n1; i++)
            scanf("%d", &arr1[i]);
```

Input:

1

6 1 2 3 4 5 6

2 1 6

Output:

1 6

For example:

Input	Result
1 3 10 17 57 6 2 7 10 15 57 246	10 57

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

void findIntersection(int arr1[], int n1, int arr2[], int n2) {
    int i = 0, j = 0;
    while (i < n1 && j < n2) {
        if (arr1[i] == arr2[j]) {
            printf("%d ", arr1[i]);
            i++;
            j++;
        } else if (arr1[i] < arr2[j]) {
            i++;
        } else {
            j++;
        }
    }
    printf("\n");
}

int main() {
    int T;
    scanf("%d", &T);

    while (T--) {
        int n1;
        scanf("%d", &n1);
        int arr1[n1];
        for (int i = 0; i < n1; i++)
            scanf("%d", &arr1[i]);
```

```
    while (T--) {
        int n1;
        scanf("%d", &n1);
        int arr1[n1];
        for (int i = 0; i < n1; i++)
            scanf("%d", &arr1[i]);

        int n2;
        scanf("%d", &n2);
        int arr2[n2];
        for (int i = 0; i < n2; i++)
            scanf("%d", &arr2[i]);

        findIntersection(arr1, n1, arr2, n2);
    }

    return 0;
}
```

	Input	Expected	Got	
✔	1 3 10 17 57 6 2 7 10 15 57 246	10 57	10 57	✔
✔	1 6 1 2 3 4 5 6 2 1 6	1 6	1 6	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

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, 3:24 PM
Time taken	35 secs
Marks	1.00/1.00
Grade	**30.00** out of 30.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

Find the intersection of two sorted arrays.

OR in other words,

Given 2 sorted arrays, find all the elements which occur in both the arrays.

Input Format

- The first line contains T, the number of test cases. Following T lines contain:

1. Line 1 contains N1, followed by N1 integers of the first array
2. Line 2 contains N2, followed by N2 integers of the second array

Output Format

The intersection of the arrays in a single line

Example

Input:

1

3 10 17 57

6 2 7 10 15 57 246

Output:

Output:

10 57

Input:

1

6 1 2 3 4 5 6

2 1 6

Output:

1 6

For example:

Input	Result
1 3 10 17 57 6 2 7 10 15 57 246	10 57

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

void findIntersection(int arr1[], int n1, int arr2[], int n2) {
    int i = 0, j = 0;
    while (i < n1 && j < n2) {
        if (arr1[i] == arr2[j]) {
            printf("%d ", arr1[i]);
            i++;
            j++;
        } else if (arr1[i] < arr2[j]) {
            i++;
        } else {
            j++;
        }
    }
    printf("\n");
}

int main() {
    int T;
    scanf("%d", &T);

    while (T--) {
        int n1;
```

```c
int main() {
    int T;
    scanf("%d", &T);

    while (T--) {
        int n1;
        scanf("%d", &n1);
        int arr1[n1];
        for (int i = 0; i < n1; i++)
            scanf("%d", &arr1[i]);

        int n2;
        scanf("%d", &n2);
        int arr2[n2];
        for (int i = 0; i < n2; i++)
            scanf("%d", &arr2[i]);

        findIntersection(arr1, n1, arr2, n2);
    }

    return 0;
}
```

	Input	Expected	Got	
✔	1 3 10 17 57 6 2 7 10 15 57 246	10 57	10 57	✔

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

Started on	Wednesday, 8 October 2025, 3:26 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:27 PM
Time taken	34 secs
Marks	1.00/1.00
Grade	**4.00** out of 4.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

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

Explanation for the given Sample Testcase:

YES as 5 - 1 = 4

So Return 1.

For example:

Input	Result
3	1

Input	Result
3 1 3 5 4	1

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

int find_pair_with_difference(int arr[], int n, int k) {
    int i = 0, j = 1;
    while (i < n && j < n) {
        if (i != j) {
            int diff = arr[j] - arr[i];
            if (diff == k) {
                return 1;
            } else if (diff < k) {
                j++;
            } else {
                i++;
            }
        } else {
            j++; // Avoid i == j case
        }
    }
    return 0;
}

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

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

    int k;
    scanf("%d", &k);

    int result = find_pair_with_difference(arr, n, k);
    printf("%d\n", result);

    return 0;
}

```

	Input	Expected	Got	
✔	3 1 3 5 4	1	1	✔
✔	10 1 4 6 8 12 14 15 20 21 25 1	1	1	✔
✔	10 1 2 3 5 11 14 16 24 28 29 0	0	0	✔
✔	10 0 2 3 7 13 14 15 20 24 25 10	1	1	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Back to Course

6-Pair with Difference -O(n) Time Complexity,O(1) Space Complexity

Started on	Wednesday, 8 October 2025, 3:25 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:25 PM
Time taken	35 secs
Marks	1.00/1.00
Grade	**4.00** out of 4.00 (**100**%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

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

Explanation for the given Sample Testcase:

YES as 5 - 1 = 4

So Return 1.

For example:

Input	Result
3	1

For example:

Input	Result
3 1 3 5 4	1

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>

int hasPairWithDifference(int arr[], int n, int k) {
    int i = 0, j = 1;

    while (i < n && j < n) {
        if (i != j) {
            int diff = arr[j] - arr[i];
            if (diff == k)
                return 1;
            else if (diff < k)
                j++;
            else
                i++;
        } else {
            j++;
        }
    }

    return 0;
}

int main() {
    int n, k;
    scanf("%d", &n);

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

    scanf("%d", &k);

    printf("%d\n", hasPairWithDifference(arr, n, k));
    return 0;
}
```

	Input	Expected	Got	
✔	3 1 3 5 4	1	1	✔
✔	10 1 4 6 8 12 14 15 20 21 25 1	1	1	✔
✔	10 1 2 3 5 11 14 16 24 28 29 0	0	0	✔
✔	10 0 2 3 7 13 14 15 20 24 25 10	1	1	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.