

## CS23331-Design and Analysis of Algorithms-2024 Batch-CSE, IT, AIML & AIDS

Started on Wednesday, 24 September 2025, 3:09 PM

State Finished

Completed on Wednesday, 8 October 2025, 4:09 PM

Time taken 14 days

Marks 15.00/15.00

Grade 100.00 out of 100.00

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✓	✓	✓	✓	✓	✓	✓	✓	✓
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✓	✓	✓	✓	✓	✓			

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### 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

```
1 #include<stdio.h>
2 int main()
3 {
4     int a,b,temp;
5     scanf("%d %d",&a,&b);
6     temp = a;
7     a = b;
8     b = temp;
9     printf("%d %d",a,b);
10 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	10 20	20 10	20 10	✓

Passed all tests! ✓

Correct

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

Marks in Maths  $\geq$  65

Marks in Physics  $\geq$  55

Marks in Chemistry  $\geq$  50

Or

Total in all three subjects  $\geq$  180

### **Sample Test Cases**

#### **Test Case 1**

##### **Input**

70 60 80

##### **Output**

The candidate is eligible

#### **Test Case 2**

## **Test Case 2**

### **Input**

50 80 80

### **Output**

The candidate is eligible

## **Test Case 3**

### **Input**

50 60 40

### **Output**

The candidate is not eligible

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int a,b,c,total;
5     scanf("%d %d %d",&a,&b,&c);
6     total = a+b+c;
7     if((a>=65 && b>=55 && c>=50) || (total>=180))
8         printf("The candidate is eligible");
9     else
10        printf("The candidate is not eligible");
11
12 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	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

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:

## Example Input/Output 2:

Input:

3000

Output:

2700

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int bill,final_bill,dis;
5     scanf("%d",&bill);
6     if(bill>2000){
7         dis = bill*0.10;
8         final_bill = bill-dis;
9         printf("%d",final_bill);
10    }
11 }
12 else{
13     printf("%d",bill);
14 }
15 return 0;
16 }
```

	Input	Expected	Got	
✓	1900	1900	1900	✓
✓	3000	2700	2700	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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 whenever 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
```

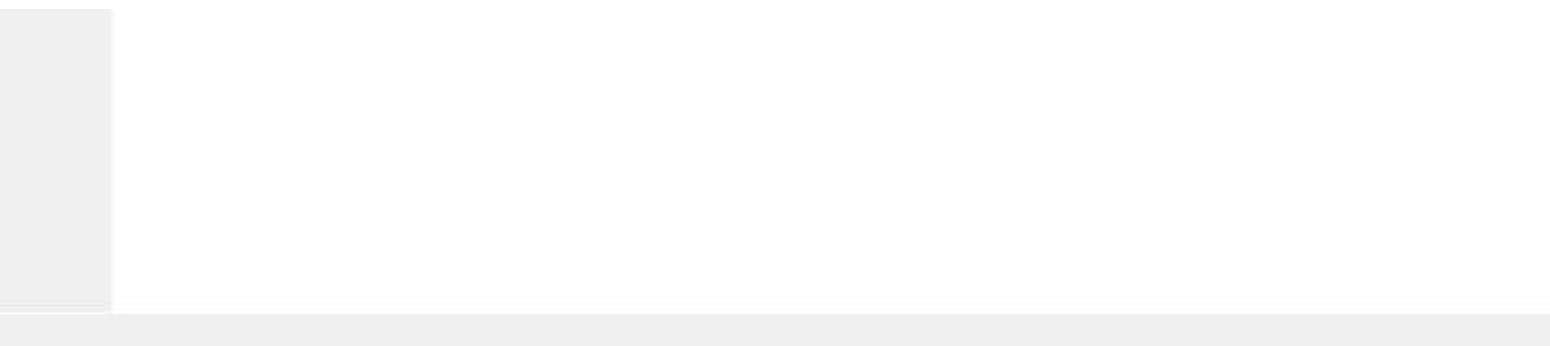
Output:

Explanation:

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

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main(){
3     int bal;
4     int n;
5     scanf("%d%d",&bal,&n);
6     for(int i=0;i<n;i++)
7     {
8         bal = 2*bal;
9     }
10    printf("%d",bal);
11    return 0;
12 }
```



	Input	Expected	Got	
✓	100 2	400	400 ✓	

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int cost;
5     int n;
6     scanf("%d%d",&cost,&n);
7     int prev=cost;
8     for(int i=0;i<n-1;i++){
9         prev=prev+200;
10        cost=cost+prev;
11    }
12    printf("%d",cost);
13    return 0;
14 }
```



	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	500 3	2100	2100	✓
✓	100 3	900	900	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 6** | Correct Mark 1.00 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:**

$1 \leq M \leq 9999999$   
 $M < N \leq 9999999$   
 $1 \leq X \leq 9999$

**Example Input/Output 1:**

Input:  
2  
40  
7

Output:  
35 28 21 14 7

**Example Input/Output 2:**

## Example Input/Output 2:

Input:

66  
121  
11

Output:

121 110 99 88 77 66

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,m,x;
5     scanf("%d %d %d",&n,&m,&x);
6     for (int i=m;i>n-1;i--){
7         if(i%x==0)
8             {
9                 printf("%d ",i);
10            }
11        }
12    return 0;
13 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	2	35 28 21 14 7	35 28 21 14 7	✓
	40			
	7			

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**Question 7** | Correct Mark 1.00 out of 1.00  [Flag question](#)

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

**For example:**

Input	Result
12	4
3	0

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int a,b;
5     scanf("%d %d",&a,&b);
6     int Q,R;
7     Q = a/b;
8     R = a%b;
9     printf("%d \n%d",Q,R);
10    return 0;
11 }
```

	Input	Expected	Got	
✓	12	4	4	✓
	3	0	0	

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int a,b,c;
5     scanf("%d %d %d",&a,&b,&c);
6     if(a>b && a>c)
7         printf("%d",a);
8     else if(b>a && b>c)
9         printf("%d",b);
10    else
11        printf("%d",c);
12 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	10 20 30	30	30	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int a;
5     scanf("%d",&a);
6     if(a %2 == 0)
7         printf("Even");
8     else
9         printf("Odd");
10 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	12	Even	Even	✓
✓	11	Odd	Odd	✓

Passed all tests! ✓

**Correct**

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.

**For example:**

Input	Result
5	120

**Answer:** (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,i;
5     long long fact = 1;
6     scanf("%d",&n);
7     for(i=1;i<=n;i++){
8         fact = fact*i;
9     }
10    printf("%lld",fact);
11    return 0;
12 }
```

	Input	Expected	Got	
✓	5	120	120	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n,sum=0,i;
5     scanf("%d",&n);
6     for(i=1;i<=n;i++){
7         sum += i;
8     }
9     printf("%d",sum);
10    return 0;
11 }
```

	Input	Expected	Got	
✓	3	6	6	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int n;
5     scanf("%d",&n);
6     if(n==0) {printf("0"); return 0;}
7     if(n==1) {printf("1"); return 0;}
8     long long a=0, b=1, c;
9     for(int i=2;i<=n;i++) {
10         c=a+b;
11         a=b;
12         b=c;
13     }
14     printf("%lld",b);
15     return 0;
16 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	0	0	0	✓
✓	1	1	1	✓
✓	4	3	3	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int a,b,power=1;
5     scanf("%d %d",&a,&b);
6     while(b>0){
7         power=power*a;
8         b--;
9     }
10    printf("%d",power);
11    return 0;
12 }
```

	Input	Expected	Got	
✓	2 5	32	32	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

**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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int num,i,count=0;
5     scanf("%d",&num);
6     for(i=1;i<=num;i++){
7         if(num%i==0)
8             count++;
9     }
10    if(count==2)
11        printf("Prime");
12    else
13        printf("No Prime");
14    return 0;
15 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	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 %)

```
1 #include<stdio.h>
2 int main()
3 {
4     int num,rev=0;
5     scanf("%d",&num);
6     while(num != 0){
7         rev = rev*10 + num%10;
8         num = num/10;
9     }
10    printf("%d",rev);
11    return 0;
12 }
```

	<b>Input</b>	<b>Expected</b>	<b>Got</b>	
✓	123	321	321	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.