**Answer Script**

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| Question No. 01 |
| Question:1  **Calculate Sum**  You have given a series, 1+2+3-4-5-6+7+8+9-10-11-12+......N . Your task to print the sum of the **Nth** element.  **Sample Input 1**  10  **Sample Output 1**  5  **Sample Input 2**  20  **Sample Output 2**  12  **Explanation of Sample Input 2:**  1+2+3-4-5-6+7+8+9-10-11-12+13+14+15-16-17-18+19+20 = 12. Sum up to the 20th of this series. |
| Answer No. 01 |
| \  #include <stdio.h>  void series(int n);  int main()  {     int N;     scanf("%d", &N);     series(N);     return 0;  }  void sumOfSeries(int n)  {     int i, sum=0, flag=0;     for(i=1; i<=n; i++)     {        if(flag%2==0)  sum += i;        else  sum -= i;        if(i%3 == 0)  flag++;     }     printf("%d ", sum);  } |

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| Question No. 02 |
| Question:02  **Sort Again**  You have given a string. Now your task is to sort this string in descending order. Implement this using function.  **Sample Input 1**  abddccss  **Sample Output 1**  ssddccba  . |
| Answer No. 02 |
| #include <stdio.h>  #include <string.h>  void swappingFunction(char \*x, char \*y);  void bubble\_sort(char a[100],int len);  int main()  {     char s[100];     scanf("%s", &s);     int n = strlen(s);     bubble\_sort(s, n);     for(int i=0; i<n; i++)        printf("%c", s[i]);     return 0;  }  void bubble\_sort(char a[100],int len)  {     int i,j;     for(i=0; i<len-1; i++)     {        for(j=i; j<len; j++)        {  if(a[i] < a[j])      swappingFunction(&a[i], &a[j]);        }     }  }  void swappingFunction(char \*x, char \*y)  {     int temp;     temp = \*x;     \*x = \*y;     \*y = temp;  } |

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| Question No. 03 |
| Question:03  **Print it !!**  **Problem Statement:**    Write a c program that asks the user to enter integers as inputs to be stored in the variables 'x' &  'y' respectively. There are also two integer pointers named ptrX &  ptrY. Assign the values of 'x' and 'y' to ptrX and ptrY respectively, and display them.    **Sample Input**  5 10  **Sample Output**  5 10    Tag: Pointer |
| Answer No. 03 |
| #include <stdio.h>  int main()  {     int x, y;     int \*ptrX, \*ptrY;     scanf("%d %d", &x, &y);     ptrX = &x;     ptrY = &y;     printf("%d %d", \*ptrX, \*ptrY);     return 0;  } |

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| Question No. 04 |
| Question:04  **Consecutive Even Numbers**    **The Problem Statement:**  Make a simple program that reads one variable named N which is the summation of 4 consecutive even numbers. Print the 4 consecutive even numbers whose summation is N.  **12 + 14 + 16 + 18 = 60** |
| Answer No. 04 |
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| Question No. 05 |
| Question:05  **Sum of Odd Odd, Even Even**  **Problem Statement**  You are given a positive integer n .The second line will contain n positive integers**.**  Write a function that will take an integer array as an argument and return the sum in the following way.  >> If the index is odd and at the same time the value is odd then you can add the index and values  >> If the index is even and at the same time the value is even then you can add the index and values  Return the total sum from the function. If there is no such value which is mentioned in the above then return 0 from the function.  See the sample input ,output and explanation for more clarification. |
| Answer No. 05 |
| #include <stdio.h>  void sumEven(int num);  int main()  {      int T;      scanf("%d", &T);      while(T--)      {      int N;      scanf("%d", &N);      sumEven(N);      }      return 0;  }  void sumEven(int num)  {      int i;      for(i=2; i<=num/3; i+=2)      {      int sum = i + i+2 + i+4 + i+6;      if(sum == num)      {      printf("%d %d %d %d\n", i, i+2, i+4, i+6);      break;      }      }  } |

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| Question No. 06 |
| Question:06  **Divisible 3 or Divisible by 5 ?**  **Problem Statement**  You are given an array of size n . And the next line will contain n positive integers. Now you need to tell how many numbers are divisible by 3 and divisible by 5. For this you need to write two functions , First one is for finding whether a number is divisible by 3 or not and the second one is for finding whether a number is divisible by 5 or not. See the sample input/output and explanation for more clarification.  Print the total count of how many numbers are divisible by 3 and divisible by 5 if there are no such numbers then return -1 from the functions,and that time print -1 only once(see the sample input and output)  Note - if a number is divisible by both 3 and 5,then consider it only once. |
| Answer No. 06 |
| #include <stdio.h>  int isDivisibleBy3(int a[], int n);  int isDivisibleBy5(int a[], int n);  int isDivisibleBy3\_5(int a[], int n);  int main()  {     int N,i, sum=0;     scanf("%d", &N);     int a[N];     for(i=0; i<N; i++)     {     scanf("%d ", &a[i]);     }     int s1 = isDivisibleBy3(a, N);     int s2 = isDivisibleBy5(a, N);     int s3 = isDivisibleBy3\_5(a, N);     sum = s1+s2+s3;     if(sum == 0)     printf("-1");     else     printf("%d", sum);     return 0;  }  int isDivisibleBy3(int a[], int n)  {     int i, sum=0;     for(i=0; i<n; i++)     {     if(a[i]%3==0 && a[i]%5!=0)        sum++;     }     return sum;  }  int isDivisibleBy5(int a[], int n)  {     int i, sum=0;     for(i=0; i<n; i++)     {     if(a[i]%5==0 && a[i]%3!=0)        sum++;     }     return sum;  }  int isDivisibleBy3\_5(int a[], int n)  {     int i, sum=0;     for(i=0; i<n; i++)     {     if(a[i]%3==0 && a[i]%5==0)        sum++;     }     return sum;  } |

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| Question No. 07 |
| **Question:07**  **Swap**  **Problem Statement:**  You are given a positive integer n .The second line will contain n positive integers.And the third line will contain a value Q.The next line will contain Q queries,every query will contain two values L and R.Now,You need to swap two values by the following way-    >> Swap the values of index L  with R .    And lastly print the modified array.    Note - You must swap the values using a function with pointers.And Consider the array as 1 base index.    See the sample input output for more clarification.    Constraints-  2<=n<=100  Values of array will be given between 1-1000  1<=L,R<=100 and L!=R    **Sample Input :**      **Sample Output :**    7  9 1 17 3 5 2 7  4     17 3 5 2 9 1 7  1 3  2 4  5 3  4 6    **Explanation -**  1st query - swap 1st index value with 3rd index value then the array will be -  17 1 9 3 5 2 7 |
| Answer No. 07 |
| #include <stdio.h>  void swap(int \*x, int \*y);  int main()  {     int N, i;     scanf("%d", &N);     int a[N+1];     for(i=1; i<=N; i++)     {     scanf("%d ", &a[i]);     }     int Q;     scanf("%d", &Q);     while(Q--)     {     int L, R;     scanf("%d %d", &L, &R);     swap(&a[L], &a[R]);     for(i=1; i<=N; i++)     {        printf("%d ", a[i]);     }     printf("\n");     }     return 0;  } |

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| Question No. 08 |
| Question:08    Broken keyboard  **Problem Statement:**  Your keyboard is worn out after playing games for a long time. Now when you press the keys of the keyboard, the first character you press is pressed once, then the key you press is pressed twice, then the third character will be pressed once again, and the fourth character will be pressed twice and so on. Implement it using function.  See the sample input-output for more clarification.  Sample Input-  -----------------------  abcd  Sample Output-  -----------------------  abbcdd |
| Answer No. 08 |
| #include <stdio.h>  void typoFunction(char s[]);  int main()  {     char s[1000];     scanf("%s", &s);     typoFunction(s);     return 0;  }  void typoFunction(char s[])  {     int i=0;     while(s[i] != '\0')     {        int idx = i+1;        if(idx%2==0)  printf("%c%c", s[i], s[i]);        else  printf("%c", s[i]);        i++;     }  } |

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| Question No. 09 |
| Question-9   Mixed Array  Problem Statement  You are given an array of size n. And the next line will contain n positive integers. Find the number of prime numbers in the array and find the average of all even integers in the array. Implement it using two functions(one is for prime and second one is for finding the average) and traverse the array using pointers.  See the sample input-output for more clarification.  Sample Input-  -----------------------  5  2 5 9 11 14  Sample Output-  -----------------------  Prime numbers: 3  Average of all even integers: 8.00 |
| Answer No. 09 |
| #include <stdio.h>  int is\_prime(int n);  float even\_average(int a[], int n);  int main()  {     int n, i, count=0;     scanf("%d", &n);     int a[n];     for(i=0; i<n; i++)     {     scanf("%d ", &a[i]);     }     for(i=0; i<n; i++)     {     int prime = is\_prime(a[i]);     if(prime)        count++;     }     float avg = even\_average(a, n);     printf("Prime numbers: %d\n", count);     printf("Average of all positive integers: %.2f\n", avg);     return 0;  }  int is\_prime(int n)  {     int i;     if(n==1)     return 0;     else     {     for(i=2; i<=n/2; i++)     {        if(n%i == 0)           return 0;     }     return 1;     }  }  float even\_average(int a[], int n)  {     int i, sum=0, flag=0;     float avgg;     for(i=0; i<n; i++)     {     if(a[i]%2==0)     {        sum += a[i];        flag++;     }     }     avgg = sum/flag;     return avgg;  } |

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| Question No. 10 |
| Question-10  **Beautiful Array**  **Problem Statement:**  You are given an array of size n. And the next line will contain n positive integers. Your favourite number is 7. The array will be nice if half or more of the numbers in the array have 7 digits. Implement it using a function and traverse the array using pointers.  See the sample input-output for more clarification.  Note - If the array size is odd that time  consider the ceil value as half, for example n=5, that means n/2 = 5/2 = 3  Sample Input- 1  -----------------------  6  33 1 17 171 88 734  Sample Output- 1  -----------------------  Beautiful  Sample Input- 2  -----------------------  5  33 1 17 11 88  Sample Output- 2  -----------------------  Ugly  Explanation -  In sample input 1 -  17 have the last digit 7  171 have the middle digit 7  734 has the first digit 7 |
| Answer No.  10 |
| #include <stdio.h>  int beautyArray(int a[], int n);  int main()  {     int N, i;     scanf("%d", &N);     int a[N];     for(i=0; i<N; i++)     {     scanf("%d ", &a[i]);     }     int beauty = beautyArray(a, N);     beauty ? printf("Beautiful\n") : printf("Ugly\n");     return 0;  }  int beautyArray(int a[], int n)  {     int count=0, i=0, half=n/2;     int \*ar = &a[0];     for(i=0; i<n; i++)     {     int num = \*(ar+i);     while(num > 0)     {        if(num%10==7)           count++;        num/=10;     }     }     if(count >= half)     return 1;     else     return 0;  } |