

Day 6 CLASS WORK

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1.

The screenshot shows a C programming IDE with the following components:

- Problem Statement:** Write a program that accepts a string from user and displays the same string after removing vowels from it.
- Sample Input & Output:**
Enter a string: we can play the game
The string without vowels is: w cn ply thgm
- Test Cases:** A list of test cases, all marked as 'Pass'.
- Code Editor:** Contains the following C code:

```
1. #include<stdio.h>
2. #include<string.h>
3. int main(){
4. char str[100];
5. int i,j, len = 0;
6. printf("enter the string");
7. scanf("%s",str);
8. len = strlen(str);
9. for(i = 0; i < len; i++){
10. if(str[i]!='a' || str[i]!='e' || str[i]!='i' || str[i]!='o' || str[i]!='u' ||
11. str[i]!='A' || str[i]!='E' || str[i]!='I' || str[i]!='O' || str[i]!='U'){
12. for(j=i;j<len;j++){
13. str[j]=str[j+1];
14. }
15. i--;
16. len--;
17. }
18. str[len + 1]= '\0';
19. }
20. printf("after deleting the vowel will be %s",str);
21. return 0;
22. }
23.
```
- Output Window:** Displays the output of the program: "we can play the game" and "enter the string after deleting the vowel will be w".
- Taskbar:** Shows the Windows taskbar with various application icons and the system clock (14:04, 10-04-2023).

2.

Questions
CEQ42

Write a program to print hollow Rectangle Dollar pattern?

Test Cases

CEQ42
CEQ43
CEQ44
CEQ45
CEQ46
CEQ47
CEQ48
CEQ49
CEQ50
CEQ51
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CEQ95
CEQ96
CEQ97
CEQ98
CEQ99
CEQ100

```
1. #include<stdio.h>
2. int main(){
3.     int rows, cols, i, j;
4.     printf("Enter rows and columns of rectangle\n");
5.     scanf("%d %d", &rows, &cols);
6.     for(i = 0; i < rows; i++){
7.         for(j = 0; j < cols; j++){
8.             if(i==0 || i==rows-1 || j==0 || j==cols-1)
9.                 printf(" & ");
10.            else
11.                printf(" ");
12.        }
13.        printf("\n");
14.    }
15.    return 0;
16. }
17.
18.
19.
20.
21.
22.
23.
```

5
4

enter rows and columns of rectangle

& & & &
& &
& &
& &
& & & &

3.

Questions
CEQ43

Write a program to find the sum of digits of N digit number.

Sample Input:
Enter N value : 3
Enter 3 digit number: 143

Sample Output:
Sum of 3 digit number: 8

Test Cases

1. N = 2, 158
2. N = 3, 14
3. N = 4, 0148
4. N = 1, 0004
5. N = 4, 7263

Buttons: Run, Save, Logout

Code:

```

1. #include<stdio.h>
2. int main()
3. {
4.     int sum=0;
5.     int num=143;
6.     while(num!=0)
7.     {
8.         sum+=num%10;
9.         num=num/10;
10.    }
11.    printf("\n sum:%d",sum);
12.    return 0;
13. }

```

Your Input Goes Here...!!!

sum:8

4.

Questions

CEQ44

Write a program to find the square root of a perfect square number(print both the positive and negative v

Sample Input:
Enter the number : 6561

Sample Output:
Square Root: 81, -81

Test Cases

1. 1225
2. 9801
3. 1827
4. -100
5. 0

C

Run

Save

Logout

```
1. #include<stdio.h>
2. #include<math.h>
3. int main(){
4.     int num;
5.     printf("enter the number:");
6.     scanf("%d",&num);
7.     int root = sqrt(num);
8.     if(root * root == num){
9.         printf("square root of %d is %d\n",num,root);
10.        printf("negative square root of %d is %d\n",num,-root);
11.    }
12.    else{
13.        printf("%d is not perfect square \n",num);
14.    }
15.    return 0;
16. }
17.
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21.
22.
23.
```

6561

enter the number:square root of 6561 is 81
negative square root of 6561 is -81

10-04-2023

14:05

ENG IN

dx

5.

Questions
CEQ45.

Write a program to print inverted pyramid pattern.

Test Cases

CEQ45
CEQ46
CEQ47
CEQ48
CEQ49
CEQ50
CEQ51
CEQ52
CEQ53
CEQ54
CEQ55
CEQ56
CEQ57
CEQ58
CEQ59
CEQ60

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int main(){
3.     int rows, i, j, space;
4.     printf(" ");
5.     scanf("%d", &rows);
6.     for(i= rows; i >= 1; --i){
7.         for(space=0; space < rows - i; ++space)
8.             printf(" ");
9.         for(j = i; j <= 2 * i - 1; ++j)
10.            printf(" * ");
11.         for (j = 0; j < i - 1; ++j)
12.            printf(" * ");
13.         printf("\n");
14.     }
15.     return 0;
16. }
```

4

* * * * *
* * * *
* * *
* *
*

17.
18.
19.
20.
21.
22.
23.

ENG
IN
14:05
10-04-2023

6.

Questions

CEQ8

Find the LCM and GCD of n numbers?

Sample Input:

N value = 2

Number 1 = 16

Number 2 = 20

Sample Output:

LCM = 80

GCD = 4

Test Cases

1. N = 3, {12, 25, 30}
2. N = 2, {52, 25, 63}
3. N = 3, {17, 19, 11}
4. N = -2, {52, 60}
5. N = 2, {30, 45}

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int gcd(int a, int b){
3.     if (b == 0){
4.         return a;
5.     }
6.     return gcd(b, a % b);
7. }
8. int lcm(int a, int b){
9.     return (a*b)/ gcd(a,b);
10. }
11. int main(){
12.     int n;
13.     printf("enter the number of elements");
14.     scanf("%d",&n);
15.     int arr[n];
16.     printf("enter %d elements",n);
17.     for(int i =0; i<n; i++){
18.         scanf("%d",&arr[i]);
19.     }
20.     int gcdval = arr[0];
21.     int lcmval = arr[0];
22.     for(int i=1; i<n; i++){
23.         gcdval = gcd(gcdval,arr[i]);
24.         lcmval = lcm(lcmval,arr[i]);
25.     }
26.     printf("gcd of the given number is %d\n",gcdval);
27. }
```

16
20

Loading

ENG

IN

14:05

10-04-2023

7.

The screenshot shows the SIMATS C IDE interface. The top browser bar displays the URL `172.18.60.6/php_c/home.php`. The main editor area contains a C program designed to print a right triangle star pattern for `n = 5`. The code uses nested loops: an outer loop for rows (`i`) and an inner loop for columns (`k`). The output area on the right shows the resulting pattern of stars.

Questions
CEQ6.
Write a program to print Right Triangle Star Pattern.
Sample Input:: n = 5
Output:

```

*
**
***
****
*****

```

Test Cases

CEQ6
CMQ7

Code:

```

1. #include<stdio.h>
2. int main()
3. {
4.     int i, j, k;
5.     for(i = 1; i <= 5; i++)
6.     {
7.         for(j = 5; j > i; j--)
8.         {
9.             printf(" ");
10.        }
11.        for(k = 1; k <= j; k++)
12.        {
13.            printf("*");
14.        }
15.        printf("\n");
16.    }
17.    return 0;
18. }

```

Your Input Goes Here...!!!

```

*
**
***
****
*****

```

Windows taskbar at the bottom shows the date as 10-04-2023 and time as 14:23.

8.

Questions

CEQ7.

Write a program to print the below pattern?

```
      1
     1 2
    1 2 3
   1 2 3 4
  1 2 3 4 5
 4 3 2 1
3 2 1
2 1
1
```

Test Cases

CEQ8
CEQ9
CEQ10
CEQ11
CEQ12
CEQ13
CEQ14
CEQ15
CEQ16
CEQ17
CEQ18
CEQ19
CEQ20
CEQ21
CEQ22
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CEQ89
CEQ90
CEQ91
CEQ92
CEQ93
CEQ94
CEQ95
CEQ96
CEQ97
CEQ98
CEQ99
CEQ100

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int main(){
3.     int n = 5;
4.     int i, j, k;
5.     for(i = 1; i <= n; i++){
6.         for(j = 1; j <= n - i; j++){
7.             printf(" ");
8.         }
9.         for(k = 1; k <= i; k++){
10.            printf("%d",k);
11.        }
12.        for (k = i - 1; k >= 1; k--){
13.            printf("%d",k);
14.        }
15.        printf("\n");
16.    }
17.    return 0;
18. }
```

Your Input Goes Here....!!!

```
      1
     1 2
    1 2 3
   1 2 3 4
  1 2 3 4 5
 4 3 2 1
3 2 1
2 1
1
```

Windows Search Taskbar

Questions

CEQ8

Write a C Program to Find Even Sum of Fibonacci Series Till number N?

Sample Input: n = 4

Sample Output: 33
(N = 4, So here the Fibonacci series will be produced from 0th term till 8th term: 0, 1, 1, 2, 3, 5, 8, 13
Sum of numbers at even indexes = 0 + 1 + 3 + 8 + 21 = 33)

Test Cases

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

CEQ8

C

Run

Save

```

1. #include<stdio.h>
2. int calculateevensum(int n)
3. {
4.     if(n <= 0)
5.         return 0;
6.     int fibo[2 * n + 1];
7.     fibo[0] = 0, fibo[1] = 1;
8.     int sum = 0;
9.     for (int i = 2; i <= 2 * n; i++){
10.         fibo[i] = fibo[i-1] + fibo[i - 2];
11.         if (i % 2 == 0)
12.             sum += fibo[i];
13.     }
14.     return 0;
15. }
16. int main()
17. {
18.     int n = 4;
19.     int sum = calculateevensum(n);
20.     printf("even indexed fibonacci sum upto %d terms = %d",n, sum);
21.     return 0;
22. }
23.

```

Your Input Goes Here....!!!

even indexed fibonacci sum upto 4 terms = 0

Logout

Windows

Search

ENG IN

10-04-2023

1406

10.

Questions
Q004

Write a program to print the all odd numbers and number of even numbers in between M and N?

Sample Input:
M = 6
N = 15

Sample Output:
All odd numbers = 7,9,11,13

Test Cases

1. M = 100, N = 100
2. M = 100, N = 100
3. M = -5, N = 5
4. M = 72, N = -72
5. M = 0, N = 0

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int num1,num2,i;
    printf("Enter the first number for the range: ");
    scanf("%d",&num1);
    printf("Enter the second number for the range: ");
    scanf("%d",&num2);
    printf("Display the even numbers between %d and %d are: ",num1,num2);
    for(i=num1;i<=num2;i++)
    {
        if(i%2==0)
        {
            printf("%d ",i);
        }
        printf("\n");
        printf("Display the odd numbers between %d and %d are: ",num1,num2);
        for(i=num1;i<=num2;i++)
        {
            if(i%2!=0)
            {
                printf("%d ",i);
            }
        }
        printf("\n");
    }
    return 0;
}
```

6
15

enter the first number for the range, enter the second number for the range:
display the even numbers between 6 and 15 are:
6
8
10
12
14

display the odd numbers between 6 and 15 are:
7
9
11
13
15

11.

The screenshot shows a C++ IDE with a program that calculates the number of student users, total users, and staff users. The program prompts for student users, total users, and staff users, and then calculates and displays the results. The output shows 856 total users and 126 staff users.

```

1. #include<stdio.h>
2. int main()
3. {
4.     int student_users,total_users,staff_users;
5.     printf("\n enter the number of student users");
6.     scanf("%d",&student_users);
7.     printf("\n enter the total number of users");
8.     scanf("%d",&total_users);
9.     staff_users=total_users-student_users;
10.    int non_teaching_staff_users=staff_users/3;
11.    printf("\n number of student user %d", student_users);
12.    printf("\n number of staff users %d", staff_users);
13.    printf("\n number of non_teaching staff users %d", non_teaching_staff_users);
14.    return 0;
15. }
16.
17.
18.
19.
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21.
22.
23.
24.
25.

```

Output:

```

856
126

```

enter the number of student users
enter the total number of users
number of student user 856
number of staff users 730
number of non_teaching staff users -243

12.

Questions
CMQ6.

Write a program to print the longest word in the below text "Programming does wonders in the world".

Test Cases

CEQ8
CEQ9
CEQ10
CEQ11
CEQ12
CEQ13
CEQ14
CEQ15
CEQ16
CEQ17
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C

Run

Save

Logout

```
1 #include<stdio.h>
2 #include<string.h>
3 int main(){
4 char text[]="Programming does wonders in the world";
5 char *word = strtok(text, " ");
6 char longest_word[100]=" ";
7 while (word != NULL){
8 if (strlen(word)>strlen(longest_word)){
9 strcpy(longest_word, word);
10 }
11 word = strtok(NULL, " ");
12 }
13 printf("the longest word is:%s\n", longest_word);
14 return 0;
15 }
16
17
18
19
20
21
22
23
24
25
```

Your Input Goes Here...!!!

the longest word is:Programming

13.

The screenshot displays the SIMAIS C IDE interface. The top bar shows the browser address bar with the URL `172.18.60.6/php_c/home.php`. The main workspace is divided into three panels:

- Questions:** Contains a problem statement: "Write a C program to display the details of student(Name , Age) by passing structures to a function." It includes sample input and output.
- Test Cases:** Lists several test cases, including "No Student 4 (Any details of student)", "No Student 5", "No Student 1(62, 28)", "No Student A", and "No Student 1(xxx, 28.2)".
- Code Editor:** Displays the following C code:

```
1. #include<stdio.h>
2. struct student{
3.     char name[50];
4.     int age;
5. };
6. void displaystudent(struct student student){
7.     printf("Name: %s\n",student.name);
8.     printf("age: %d\n",student.age);
9. }
10. int main(){
11.     struct student s1={"AAA",25};
12.     displaystudent(s1);
13.     return 0;
14. }
```

Below the code editor, there is a "Run" button and a "Save" button. To the right of the code editor, there is a "Your Input Goes Here...!!!" text box. Below this, the output of the program is displayed in a light blue box:

```
name: AAA
age: 25
```

The bottom of the image shows the Windows taskbar with the search bar, task view button, and several application icons. The system clock indicates the time is 14:24 on 10-04-2023.

14.

Questions

CHQ25

Write a program in C to check Armstrong and perfect numbers using the function.

Test Data :

Input any number: 371

Expected Output :

The 371 is an Armstrong number.

The 371 is not a Perfect number.

Test Cases

CRunSaveLogout

```
1. #include<stdio.h>
2. int checkarmstrong(int n1);
3. int checkperfect(int n1);
4. int main()
5. {
6.     int n1;
7.     printf("\n\n function: check armstrong and perfect number:\n");
8.     printf("\n");
9.     printf("input any number:");
10.    scanf("%d",&n1);
11.    if(checkarmstrong(n1))
12.    {
13.        printf(" the %d is an armstrong number.\n",n1);
14.    }
15.    else
16.    {
17.        printf(" the %d is not armstrong number.\n",n1);
18.    }
19.    if (checkperfect(n1))
20.    {
21.        printf("the %d is a perfect number.\n\n",n1);
22.    }
23.    else
24.    {
25.        printf("the %d is not a perfect number.\n\n",n1);
26.    }
27.    return 0;
28. }
29. int checkarmstrong( int n1)
30. {
31.     int ld,sum,num;
```

371

function: check armstrong and perfect number:
input any number; the 371 is an armstrong number.
the 371 is not a perfect number.

Search

ENG IN 14:07 10-04-2023

15.

Questions

CHQ26

In an organization they decide to give bonus to all the employees on New Year. A 3% bonus on salary is given to the grade A workers and 10% bonus on salary to the grade B workers. Write a program to enter the salary and grade of the employee. If the salary of the employee is less than \$10,000 then the employee gets an extra 25 bonus on salary. Calculate the bonus that has to be given to the employee and print the salary that the employee will get.

Sample Input & Output:

Enter the grade of the employee: B

Enter the employee salary: 50000

Salary: 50000

Bonus: 5000.0

Test Cases

1. Enter the grade of the employee: A
Enter the employee salary: 8000
2. Enter the grade of the employee: C
Enter the employee salary: 60000
3. Enter the grade of the employee: B
Enter the employee salary: 0
4. Enter the grade of the employee: 38000
Enter the employee salary: A
5. Enter the grade of the employee: B
Enter the employee salary: -8000

C

Run

Save

Logout

```
1. #include<stdio.h>
2. int main(){
3.     double salary, bonus;
4.     char grade;
5.     printf("enter salary:");
6.     scanf("%lf",&salary);
7.     printf("enter grade(A/B):");
8.     scanf("%c",&grade);
9.     if (salary < 10000) {
10.         bonus = salary * 0.02;
11.     } else if (grade == 'A'){
12.         bonus = salary * 0.05;
13.     } else if (grade == 'B') {
14.         bonus = salary * 0.1;
15.     } else {
16.         printf("Invalid grade.\n");
17.         return 1;
18.     }
19.     double new_salary = salary + bonus;
20.     printf("bonus: $%.2f\n",bonus);
21.     printf("new salary: $%.2f\n",new_salary);
22.     return 0;
23. }
24.
25.
```

50000
B

enter salary:enter grade(A/B):bonus: \$1000.00
new salary: \$51000.00

Search

ENG IN

14:07 10-04-2023

16.

Questions

CHQ27.

Write a program to search the given element using binary search method and display its position in a linear array.

Sample Input:

Array of elements - {16, 18, 27, 16, 23, 21, 19}
Element to search - 23

Sample Output:

Given element 23 is found at 5 th position

Test Cases

1#include<stdio.h>
2int main()
3{
4int c, first, last, middle, n, search, array[100];
5printf("Enter number of elements\n");
6scanf("%d",&n);
7printf("enter %d integers\n",n);
8for (c = 0; c < n ; c++)
9scanf("%d",&array[c]);
10printf("enter value to find\n");
11scanf("%d",&search);
12first = 0;
13last = n - 1;
14middle = (first+last)/2;
15while(first <= last)
16{
17if (array[middle] < search)
18first = middle + 1;
19else if (array[middle] == search)
20{
21printf("%d found at location %d.\n",search,middle+1);
22break;
23}
24else
25last = middle - 1;
middle = (first + last)/2;
}
if (first > last)
printf("not found! %d is not present in the list.\n",search);
return 0;
}

enter number of elements 7
enter 7 integers
16
18
27
16
23
21
19
enter value to find 23

Enter number of elements
enter 7 integers
enter value to find
not found! 23 is not present in the list.

RunSaveLogout

Search

ENG IN

1408

10-04-2023

17.

The screenshot shows the SIMAIS C IDE interface. The top bar indicates the browser is 'Not secure' and the URL is '172.18.60.6/php_c/home.php'. The left sidebar contains 'Questions' and 'Test Cases' sections. The main editor displays a C program that finds the nth prime number. The program is running, and the output shows the 3rd prime number is 5.

```
1. #include<stdio.h>
2. int main()
3. {
4.     int num,primecount=0,i,flag,prime=1;
5.     printf("\n enter the number:");
6.     scanf("%d",&num);
7.     while(num!=primecount)
8.     {
9.         flag=0;
10.        prime++;
11.        for(i=2;i<=(prime/2);i++)
12.        {
13.            if (prime%i==0)
14.            {
15.                flag=1;
16.            }
17.        }
18.        if (flag==0)
19.        {
20.            primecount++;
21.        }
22.        printf("\n prime number is : %d",num,prime);
23.    }
24. }
```

Test Cases:

- 1. N = P
- 2. N = 0
- 3. N = 4
- 4. N = 11
- 5. N = 7.2

Sample Input:

N = 3

Sample Output:

3rd Prime number is 5
3 prime numbers after 5 are: 7, 11, 13

enter the number:3 prime number is : 5