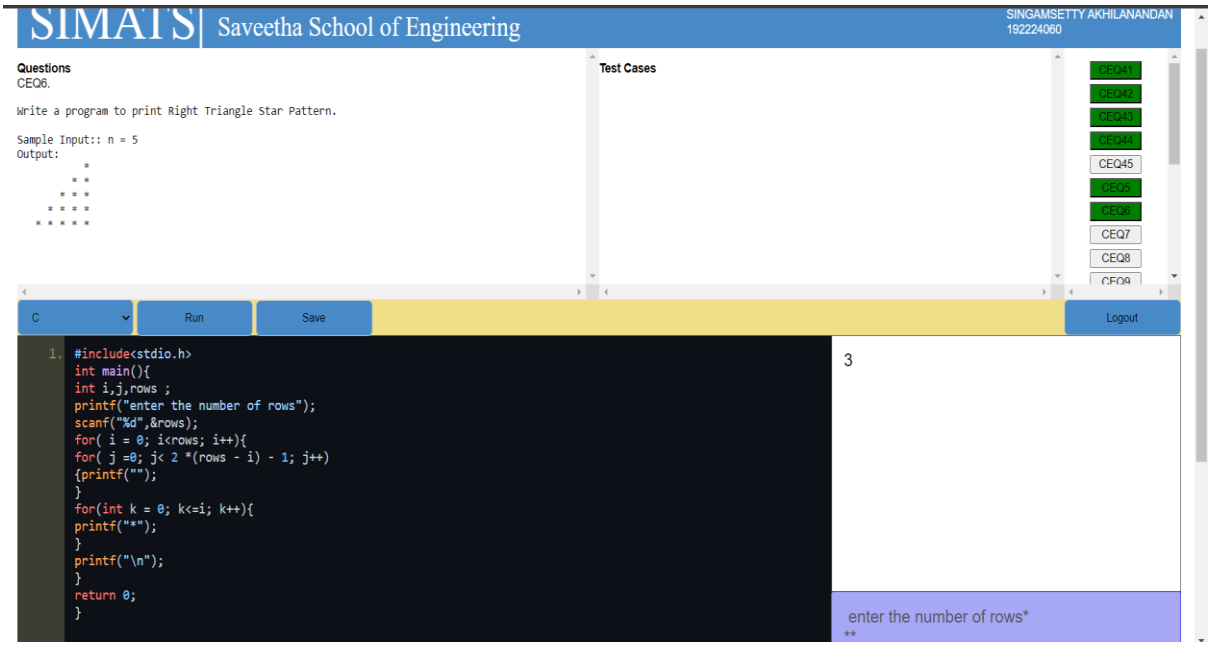
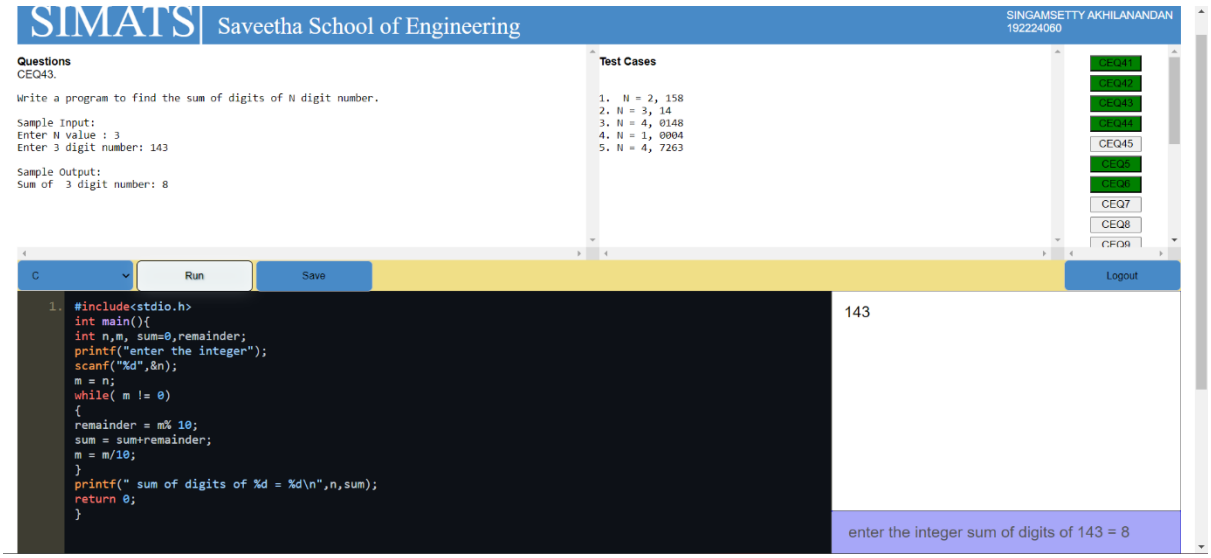
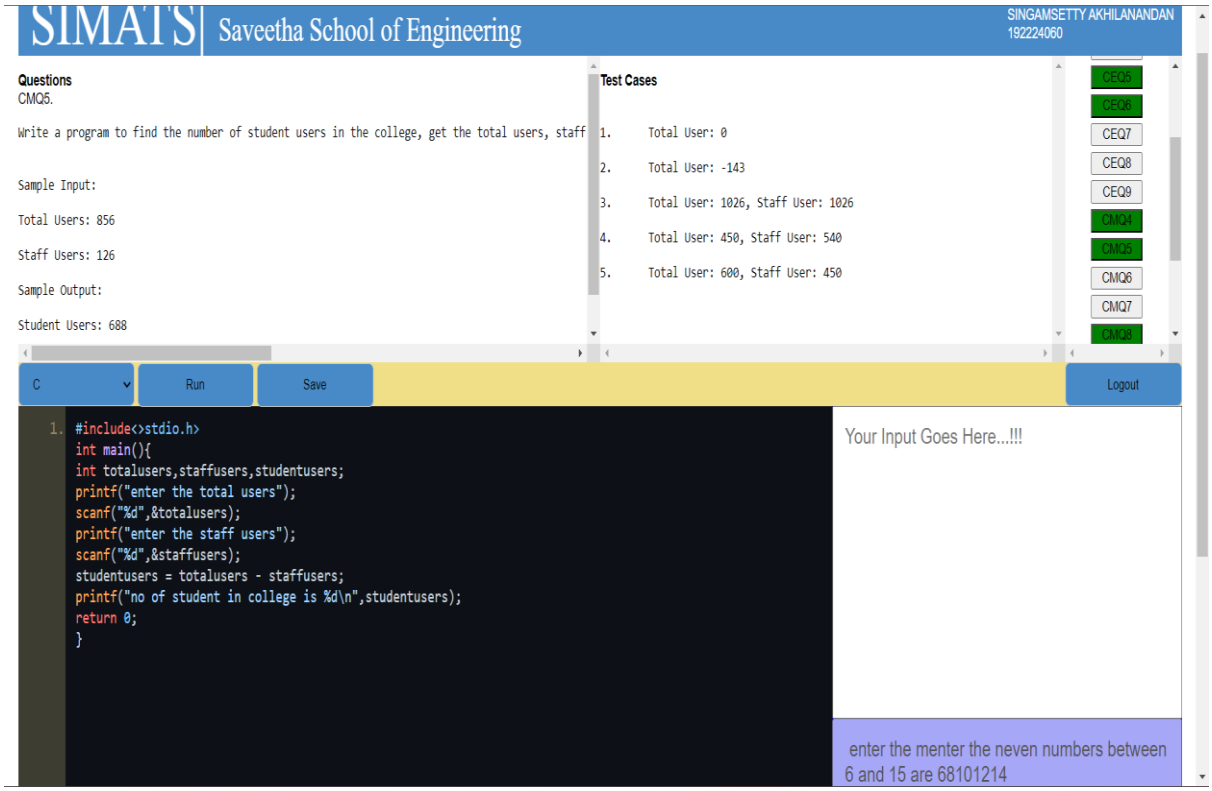
CSA02 C Programming Model exam

-S AKHILANANDAN

192224060



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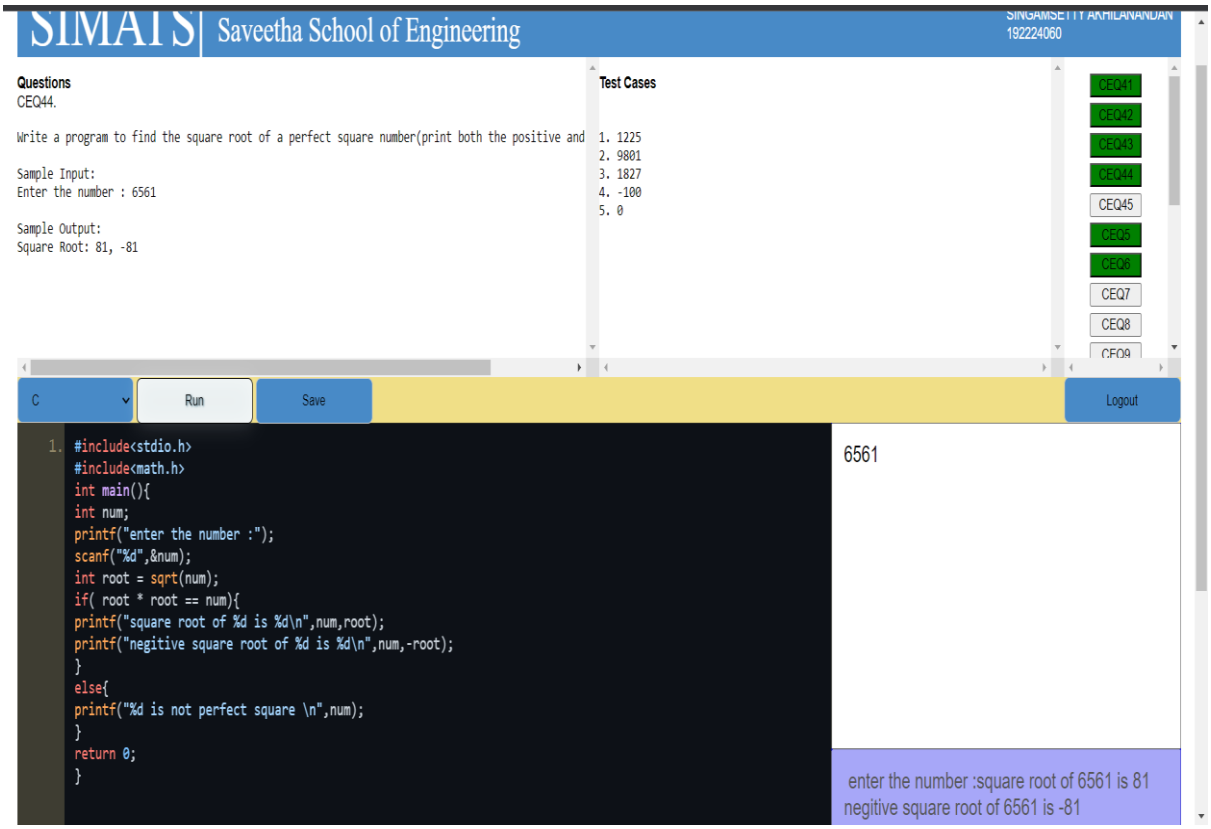
Questions
CMQ5.
Write a program to find the number of student users in the college, get the total users, staff
Sample Input:
Total Users: 856
Staff Users: 126
Sample Output:
Student Users: 688
Test Cases
1. Total User: 0
2. Total User: -143
3. Total User: 1026, Staff User: 1026
4. Total User: 450, Staff User: 540
5. Total User: 600, Staff User: 450
CEQ5
CEQ6
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
C
Run
Save
Logout
#include<>stdio.h>
int main(){
int totalusers,staffusers,studentusers;
printf("enter the total users");
scanf("%d",&totalusers);
printf("enter the staff users");
scanf("%d",&staffusers);
studentusers = totalusers - staffusers;
printf("no of student in college is %d\n",studentusers);
return 0;
}
Your Input Goes Here...!!!
enter the menter the neven numbers between 6 and 15 are 68101214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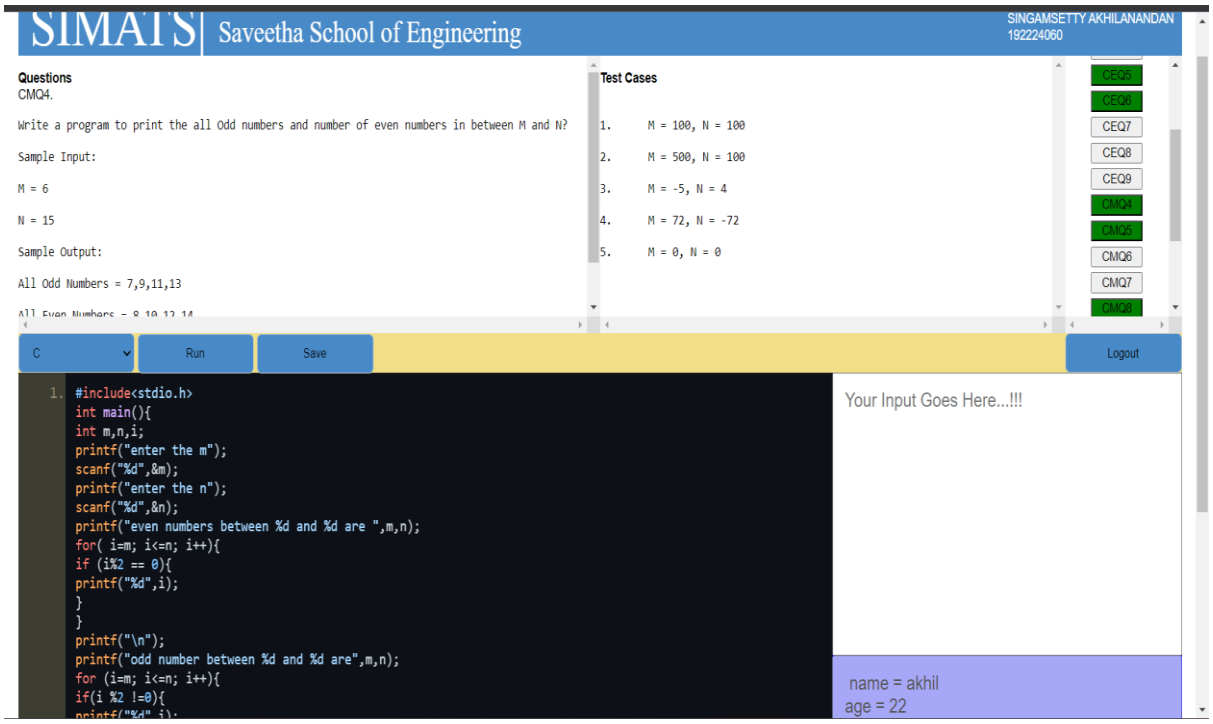
Questions
CEQ44.
Write a program to find the square root of a perfect square number(print both the positive and
Sample Input:
Enter the number : 6561
Sample Output:
Square Root: 81, -81
Test Cases
1. 1225
2. 9801
3. 1827
4. -100
5. 0
CEQ41
CEQ42
CEQ43
CEQ44
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
C
Run
Save
Logout
#include<stdio.h>
#include<math.h>
int main(){
int num;
printf("enter the number :");
scanf("%d",&num);
int root = sqrt(num);
if(root * root == num){
printf("square root of %d is %d\n",num,root);
printf("negitive square root of %d is %d\n",num,-root);
}
else{
printf("%d is not perfect square \n",num);
}
return 0;
}
6561
enter the number :square root of 6561 is 81
negitive square root of 6561 is -81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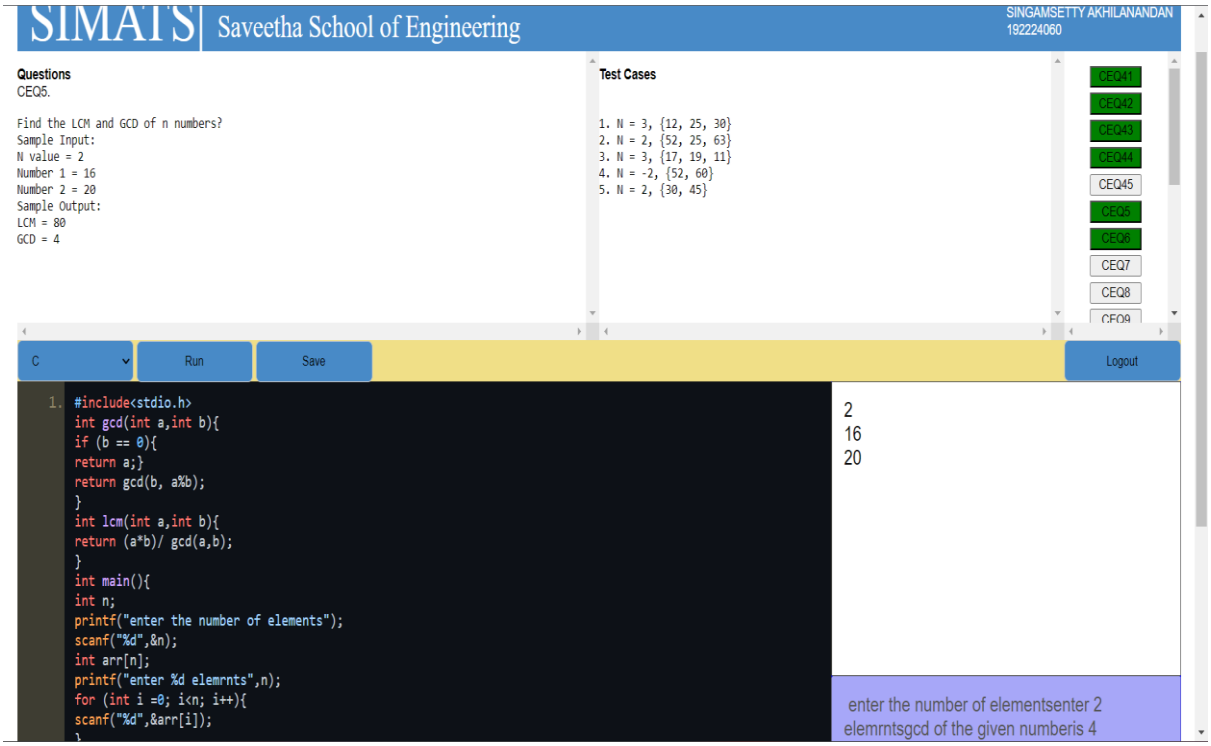
Questions
CMQ4.
Write a program to print the all Odd numbers and number of even numbers in between M and N?
Sample Input:
M = 6
N = 15
Sample Output:
All Odd Numbers = 7,9,11,13
Test Cases
1. M = 100, N = 100
2. M = 500, N = 100
3. M = -5, N = 4
4. M = 72, N = -72
5. M = 0, N = 0
CEQ5
CEQ6
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
C
Run
Save
Logout
#include<stdio.h>
int main(){
int m,n,i;
printf("enter the m");
scanf("%d",&m);
printf("enter the n");
scanf("%d",&n);
printf("even numbers between %d and %d are ",m,n);
for(i=m; i<=n; i++){
if (i%2 == 0){
printf("%d",i);
}
}
printf("\n");
printf("odd number between %d and %d are",m,n);
for (i=m; i<=n; i++){
if(i %2 !=0){
Your Input Goes Here...!!!
name = akhil
age = 22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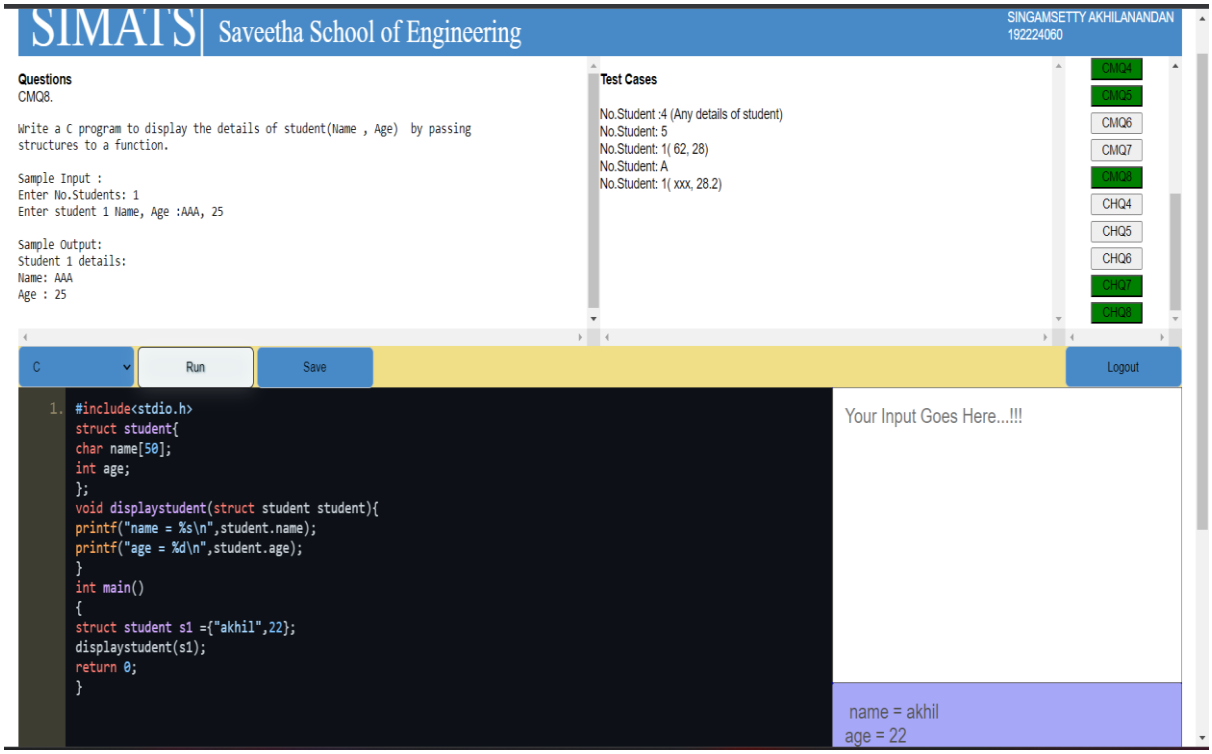
Questions
CEQ5.
Find the LCM and GCD of n numbers?
Sample Input:
N value = 2
Number 1 = 16
Number 2 = 20
Sample Output:
LCM = 80
GCD = 4
Test Cases
1. N = 3, {12, 25, 30}
2. N = 2, {52, 25, 63}
3. N = 3, {17, 19, 11}
4. N = -2, {52, 60}
5. N = 2, {30, 45}
CEQ41
CEQ42
CEQ43
CEQ44
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
C
Run
Save
Logout
#include<stdio.h>
int gcd(int a,int b){
if (b == 0){
return a;}
return gcd(b, a%b);
}
int lcm(int a,int b){
return (a*b)/ gcd(a,b);
}
int main(){
int n;
printf("enter the number of elements");
scanf("%d",&n);
int arr[n];
printf("enter %d elemrnts",n);
for (int i =0; i<n; i++){
scanf("%d",&arr[i]);
2
16
20
enter the number of elementsenter 2
elemrntsgcd of the given numberis 4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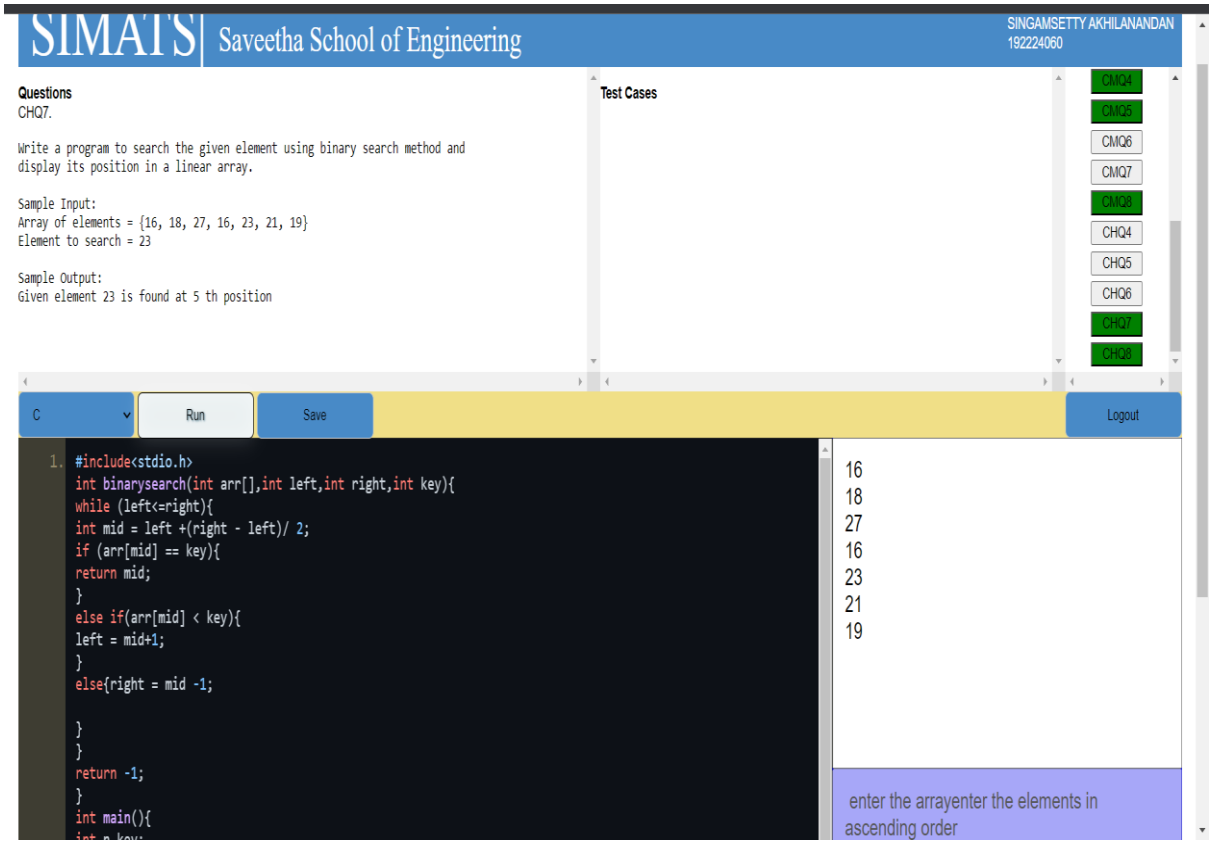
Questions
CMQ8.
Write a C program to display the details of student(Name , Age) by passing structures to a function.
Sample Input :
Enter No.Students: 1
Enter student 1 Name, Age :AAA, 25
Sample Output:
Student 1 details:
Name: AAA
Age : 25
Test Cases
No.Student :4 (Any details of student)
No.Student: 5
No.Student: 1(62, 28)
No.Student: A
No.Student: 1(xxx, 28.2)
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CHQ4
CHQ5
CHQ6
CHQ7
CHQ8
C
Run
Save
Logout
#include<stdio.h>
struct student{
char name[50];
int age;
};
void displaystudent(struct student student){
printf("name = %s\n",student.name);
printf("age = %d\n",student.age);
}
int main()
{
struct student s1 ={"akhil",22};
displaystudent(s1);
return 0;
}
Your Input Goes Here...!!!
name = akhil
age = 22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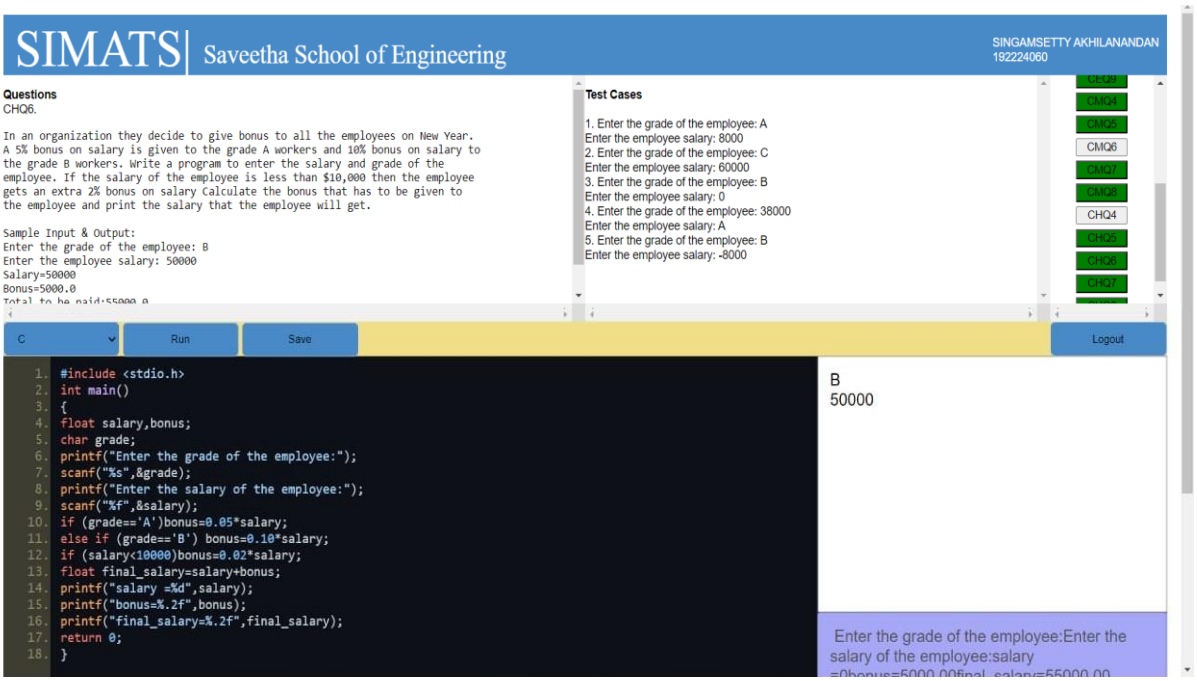
Questions
CHQ7.
Write a program to search the given element using binary search method and display its position in a linear array.
Sample Input:
Array of elements = {16, 18, 27, 16, 23, 21, 19}
Element to search = 23
Sample Output:
Given element 23 is found at 5 th position
Test Cases
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CHQ4
CHQ5
CHQ6
CHQ7
CHQ8
C
Run
Save
Logout
#include<stdio.h>
int binarysearch(int arr[],int left,int right,int key){
while (left<=right){
int mid = left +(right - left)/ 2;
if (arr[mid] == key){
return mid;
}
else if(arr[mid] < key){
left = mid+1;
}
else{right = mid -1;
}
}
return -1;
}
int main(){
16
18
27
16
23
21
19
enter the arrayenter the elements in ascending order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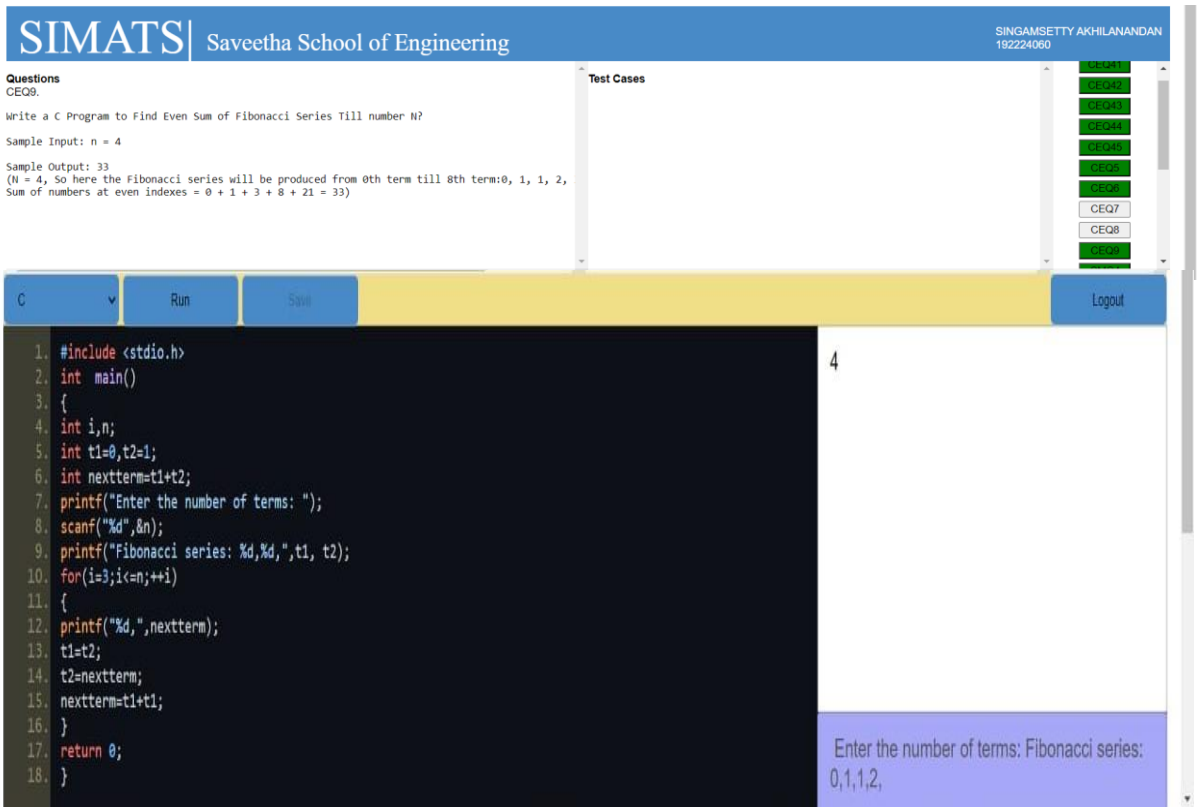
Questions
CHQ6.
In an organization they decide to give bonus to all the employees on New Year. A 5% bonus on salary is given to the grade A workers and 10% bonus on salary to the grade B workers. Write a program to enter the salary and grade of the employee. If the salary of the employee is less than $10,000 then the employee gets an extra 2% 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
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CHQ4
CHQ5
CHQ6
CHQ7
C
Run
Save
Logout
#include <stdio.h>
int main()
{
float salary,bonus;
char grade;
printf("Enter the grade of the employee:");
scanf("%s",&grade);
printf("Enter the salary of the employee:");
scanf("%f",&salary);
if (grade=='A')bonus=0.05*salary;
else if (grade=='B') bonus=0.10*salary;
if (salary<10000)bonus=0.02*salary;
float final_salary=salary+bonus;
printf("salary =%d",salary);
printf("bonus=%.2f",bonus);
printf("final_salary=%.2f",final_salary);
return 0;
}
B
50000
Enter the grade of the employee:Enter the salary of the employee:salary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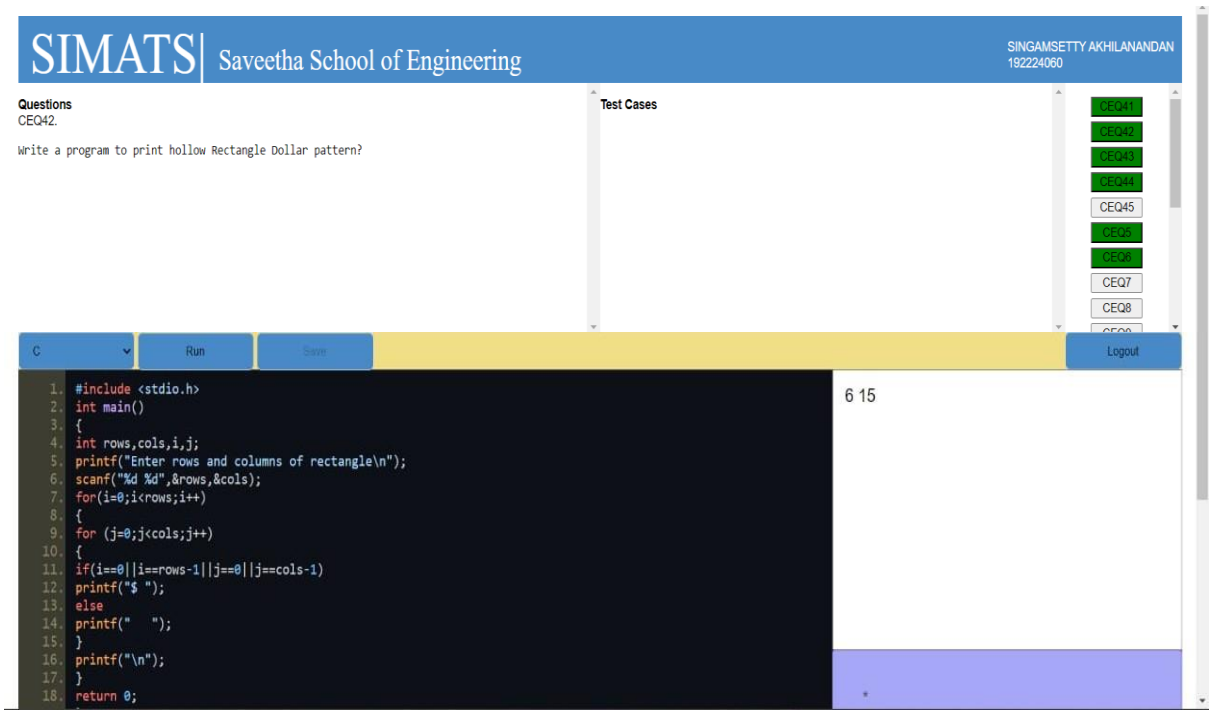
Questions
CEQ9.
Write a C Program to Find Even Sum of Fibonacci Series Till number N?
Sample Input: n = 4
Sample Output: 33
(N = 4, So here the Fibonacci series will be produced from 0th term till 8th term:0, 1, 1, 2,
Sum of numbers at even indexes = 0 + 1 + 3 + 8 + 21 = 33)
Test Cases
CEQ42
CEQ43
CEQ44
CEQ45
CEQ6
CEQ7
CEQ8
CEQ9
C
Run
Logout
#include <stdio.h>
int main()
{
int i,n;
int t1=0,t2=1;
int nextterm=t1+t2;
printf("Enter the number of terms: ");
scanf("%d",&n);
printf("Fibonacci series: %d,%d,",t1, t2);
for(i=3;i<=n;++i)
{
printf("%d,",nextterm);
t1=t2;
t2=nextterm;
nextterm=t1+t1;
}
return 0;
}
4
Enter the number of terms: Fibonacci series:
0,1,1,2,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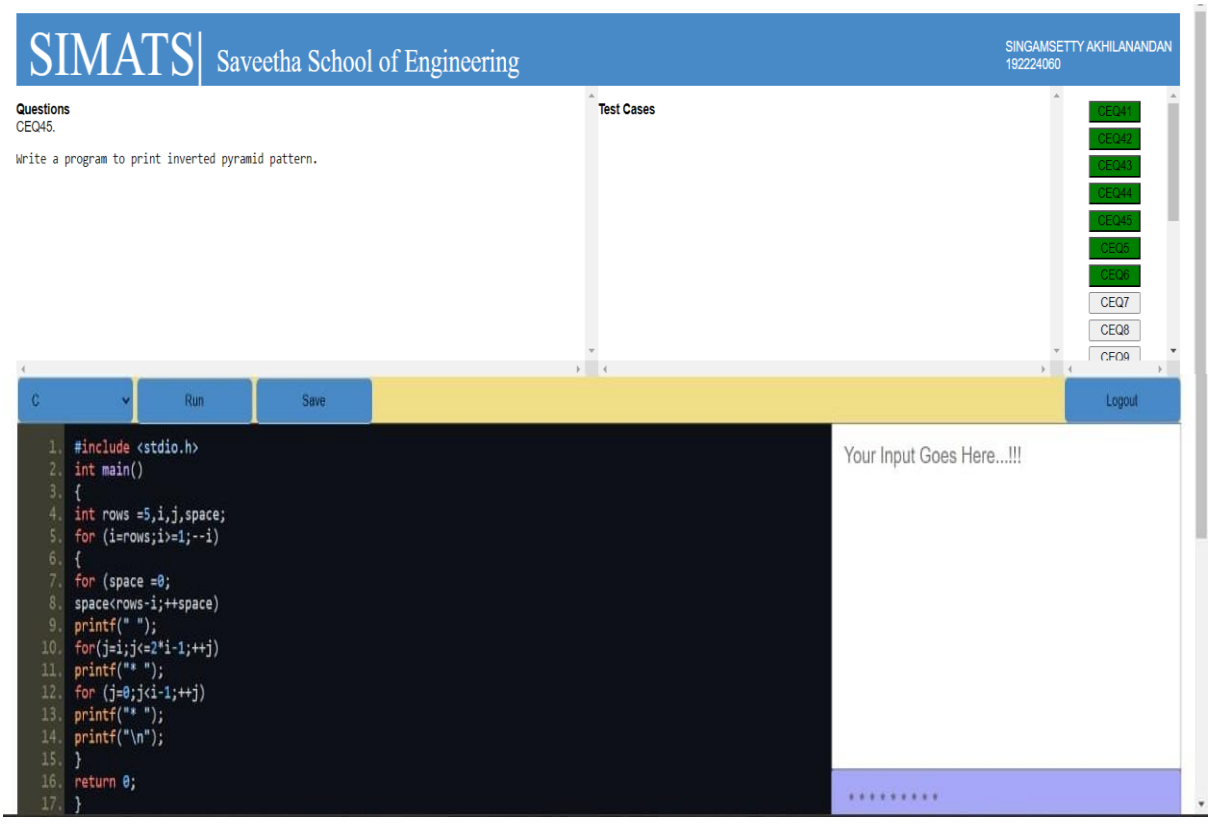
Questions
CEQ42.
Write a program to print hollow Rectangle Dollar pattern?
Test Cases
CEQ41
CEQ42
CEQ43
CEQ44
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
C
Run
Logout
#include <stdio.h>
int main()
{
int rows,cols,i,j;
printf("Enter rows and columns of rectangle\n");
scanf("%d %d",&rows,&cols);
for(i=0;i<rows;i++)
{
for (j=0;j<cols;j++)
{
if(i==0||i==rows-1||j==0||j==cols-1)
printf("$ ");
else
printf(" ");
}
printf("\n");
}
return 0;
6 15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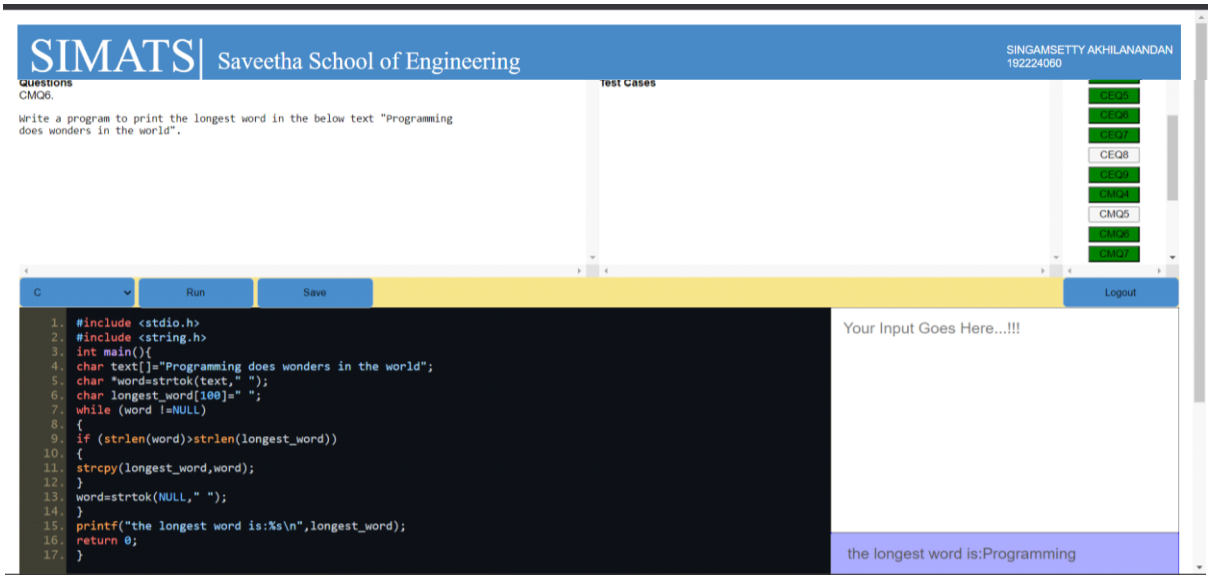
Questions
CEQ45.
Write a program to print inverted pyramid pattern.
Test Cases
CEQ41
CEQ42
CEQ43
CEQ44
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
C
Run
Save
Logout
#include <stdio.h>
int main()
{
int rows =5,i,j,space;
for (i=rows;i>=1;--i)
{
for (space =0;
space<rows-i;++space)
printf(" ");
for(j=i;j<=2*i-1;++j)
printf("* ");
for (j=0;j<i-1;++j)
printf("* ");
printf("\n");
}
return 0;
}
Your Input Goes Here...!!!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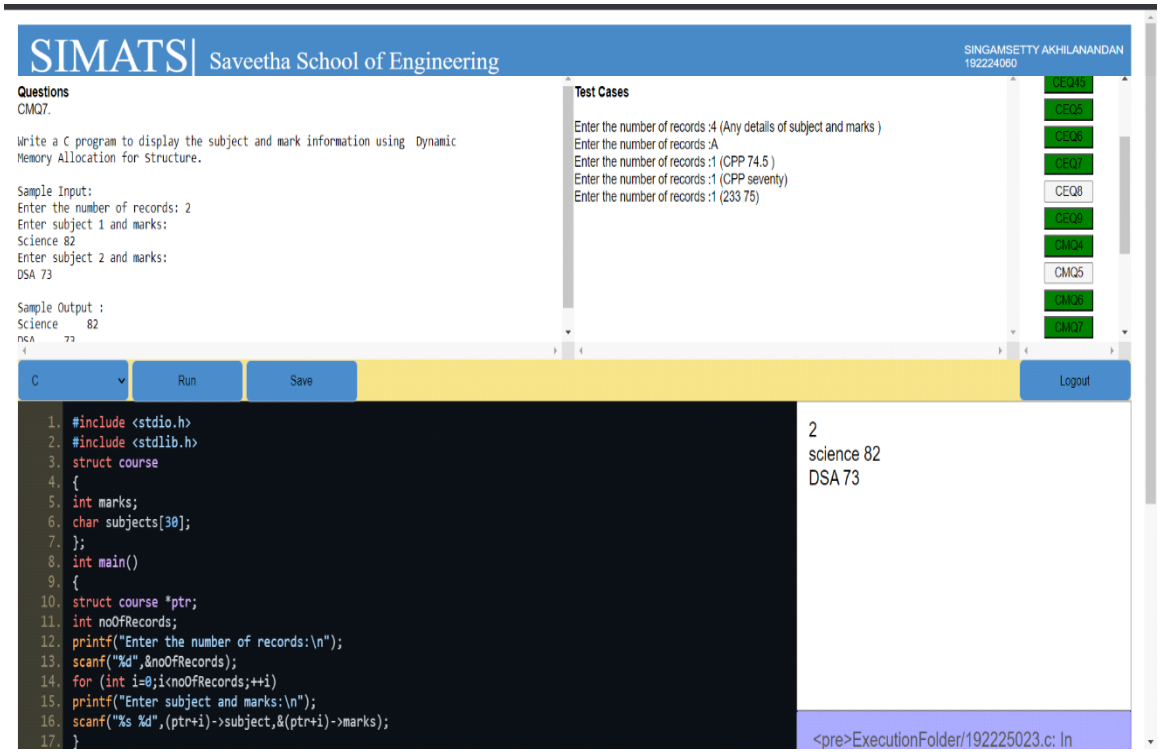
Questions
CMQ6.
Write a program to print the longest word in the below text "Programming does wonders in the world".
Test Cases
CEQ5
CEQ6
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
C
Run
Save
Logout
#include <stdio.h>
#include <string.h>
int main(){
char text[]="Programming does wonders in the world";
char *word=strtok(text," ");
char longest_word[100]=" ";
while (word !=NULL)
{
if (strlen(word)>strlen(longest_word))
{
strcpy(longest_word,word);
}
word=strtok(NULL," ");
}
printf("the longest word is:%s\n",longest_word);
return 0;
}
Your Input Goes Here...!!!
the longest word is:Programming

©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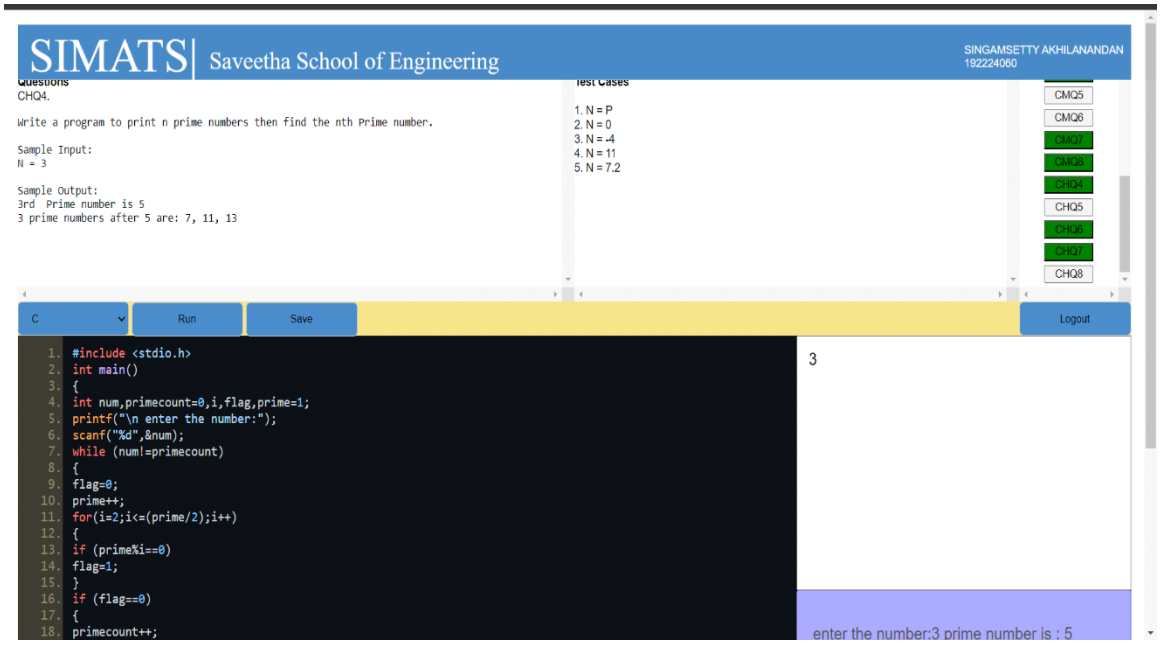
Questions
CMQ7.
Write a C program to display the subject and mark information using Dynamic Memory Allocation for Structure.
Sample Input:
Enter the number of records: 2
Enter subject 1 and marks:
Science 82
Enter subject 2 and marks:
DSA 73
Sample Output :
Science 82
Test Cases
Enter the number of records :4 (Any details of subject and marks)
Enter the number of records :A
Enter the number of records :1 (CPP 74.5)
Enter the number of records :1 (CPP seventy)
Enter the number of records :1 (233 75)
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
C
Run
Save
Logout
#include <stdio.h>
#include <stdlib.h>
struct course
{
int marks;
char subjects[30];
};
int main()
{
struct course *ptr;
int noOfRecords;
printf("Enter the number of records:\n");
scanf("%d",&noOfRecords);
for (int i=0;i<noOfRecords;++i)
printf("Enter subject and marks:\n");
scanf("%s %d",(ptr+i)->subject,&(ptr+i)->marks);
}
2
science 82
DSA 73
<pre>ExecutionFolder/192225023.c: In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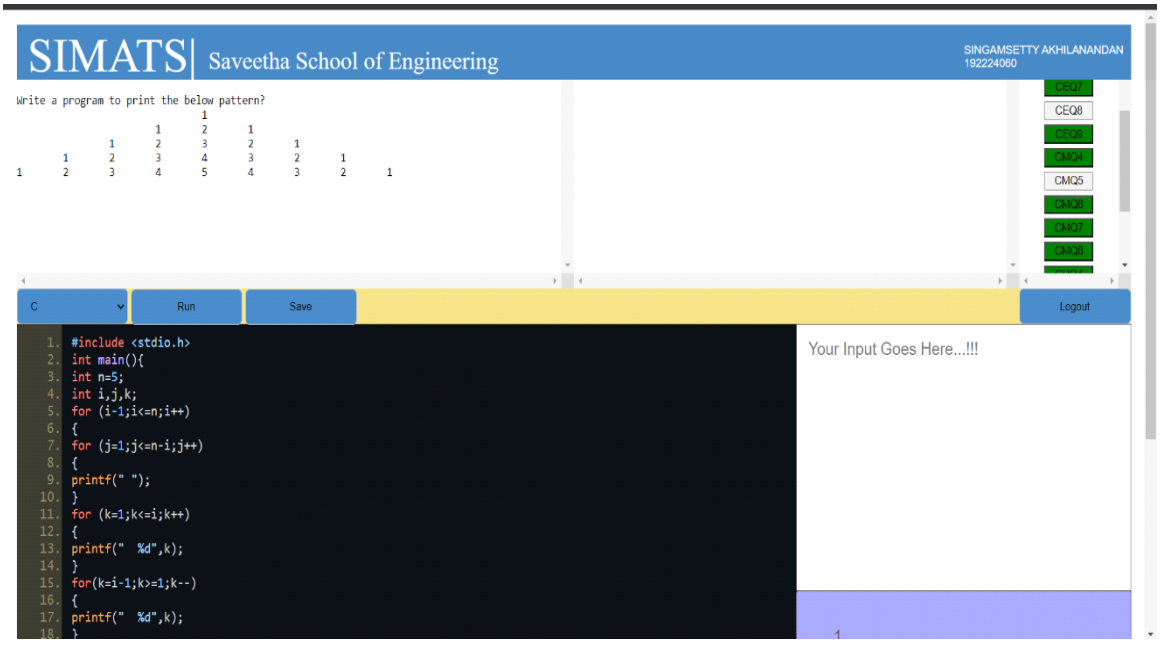
Questions
CHQ4.
Write a program to print n prime numbers then find the nth Prime number.
Sample Input:
N = 3
Sample Output:
3rd Prime number is 5
3 prime numbers after 5 are: 7, 11, 13
Test Cases
1. N = P
2. N = 0
3. N = -4
4. N = 11
5. N = 7.2
CMQ5
CMQ6
CMQ7
CMQ8
CHQ4
CHQ5
CHQ6
CHQ7
CHQ8
C
Run
Save
Logout
#include <stdio.h>
int main()
{
int num,primecount=0,i,flag,prime=1;
printf("\n enter the number:");
scanf("%d",&num);
while (num!=primecount)
{
flag=0;
prime++;
for(i=2;i<=(prime/2);i++)
{
if (prime%i==0)
flag=1;
}
if (flag==0)
{
primecount++;
3
enter the number:3 prime number is : 5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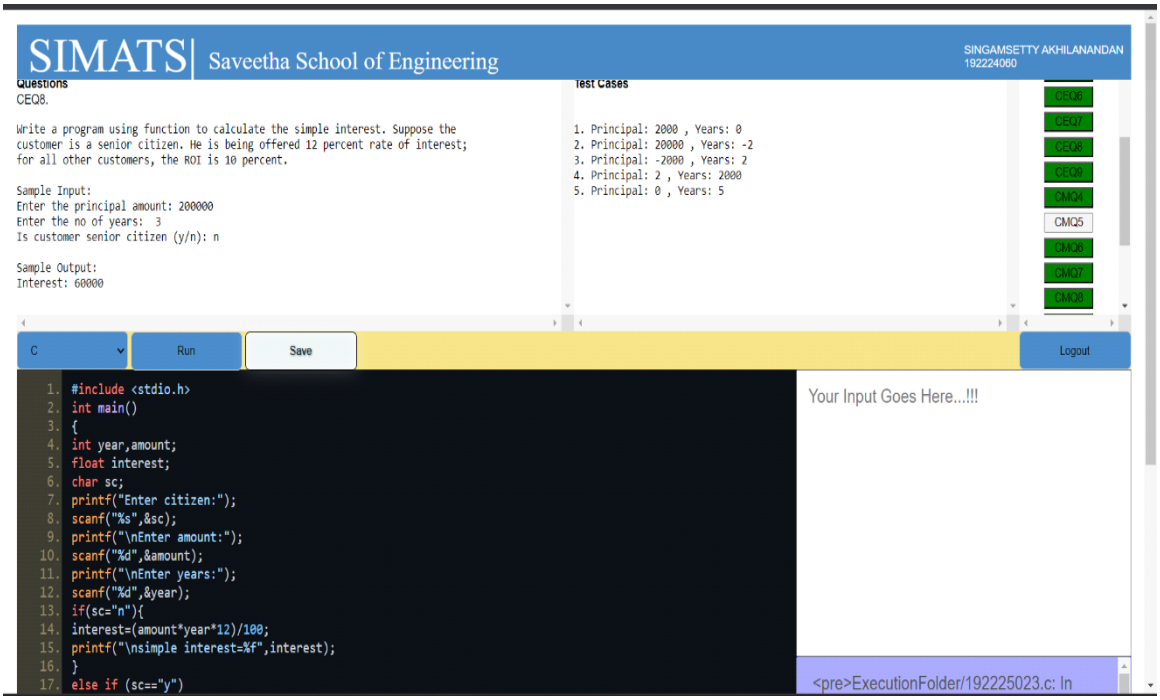
Write a program to print the below pattern?
1
1 2 1
1 2 3 2 1
1 2 3 4 3 2 1
1 2 3 4 5 4 3 2 1
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
C
Run
Save
Logout
#include <stdio.h>
int main(){
int n=5;
int i,j,k;
for (i=1;i<=n;i++)
{
for (j=1;j<=n-i;j++)
{
printf(" ");
}
for (k=1;k<=i;k++)
{
printf(" %d",k);
}
for(k=i-1;k>=1;k--)
{
printf(" %d",k);
Your Input Goes Here...!!!
1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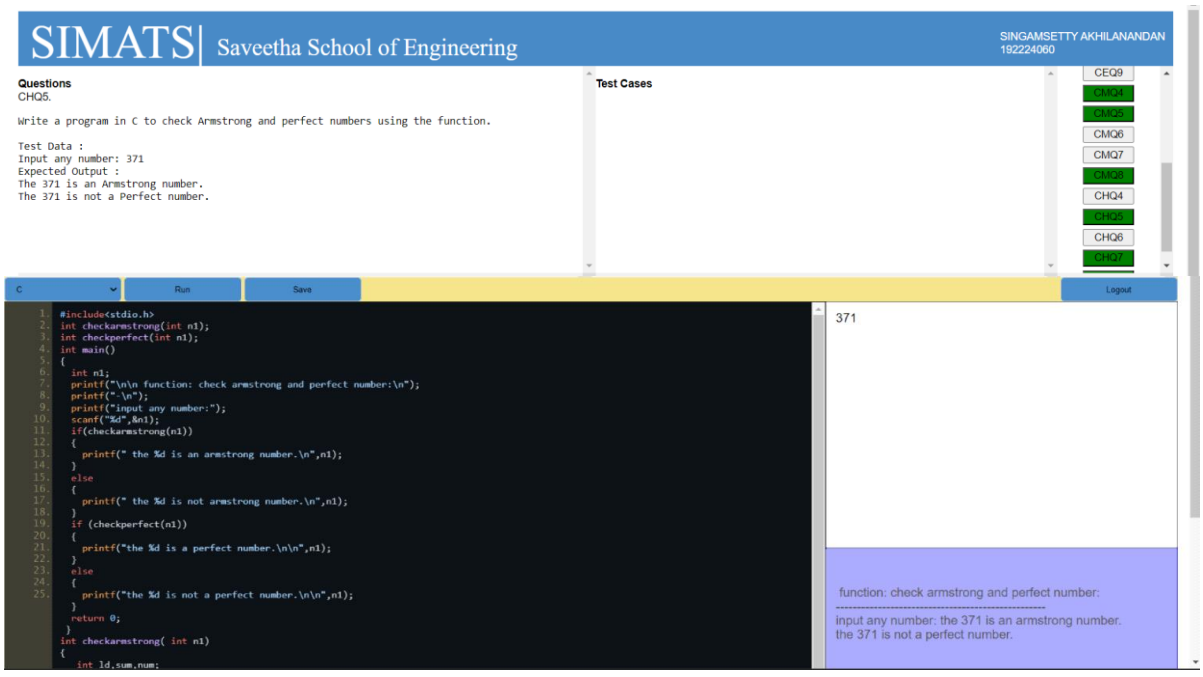
Questions
CEQ8.
Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen. He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent.
Sample Input:
Enter the principal amount: 200000
Enter the no of years: 3
Is customer senior citizen (y/n): n
Sample Output:
Interest: 60000
Test Cases
1. Principal: 2000 , Years: 0
2. Principal: 20000 , Years: -2
3. Principal: -2000 , Years: 2
4. Principal: 2 , Years: 2000
5. Principal: 0 , Years: 5
CEQ6
CEQ7
CEQ8
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
C
Run
Save
Logout
#include <stdio.h>
int main()
{
int year,amount;
float interest;
char sc;
printf("Enter citizen:");
scanf("%s",&sc);
printf("\nEnter amount:");
scanf("%d",&amount);
printf("\nEnter years:");
scanf("%d",&year);
if(sc="n"){
interest=(amount*year*12)/100;
printf("\nsimple interest=%f",interest);
}
else if (sc=="y")
Your Input Goes Here...!!!
<pre>ExecutionFolder/192225023.c: In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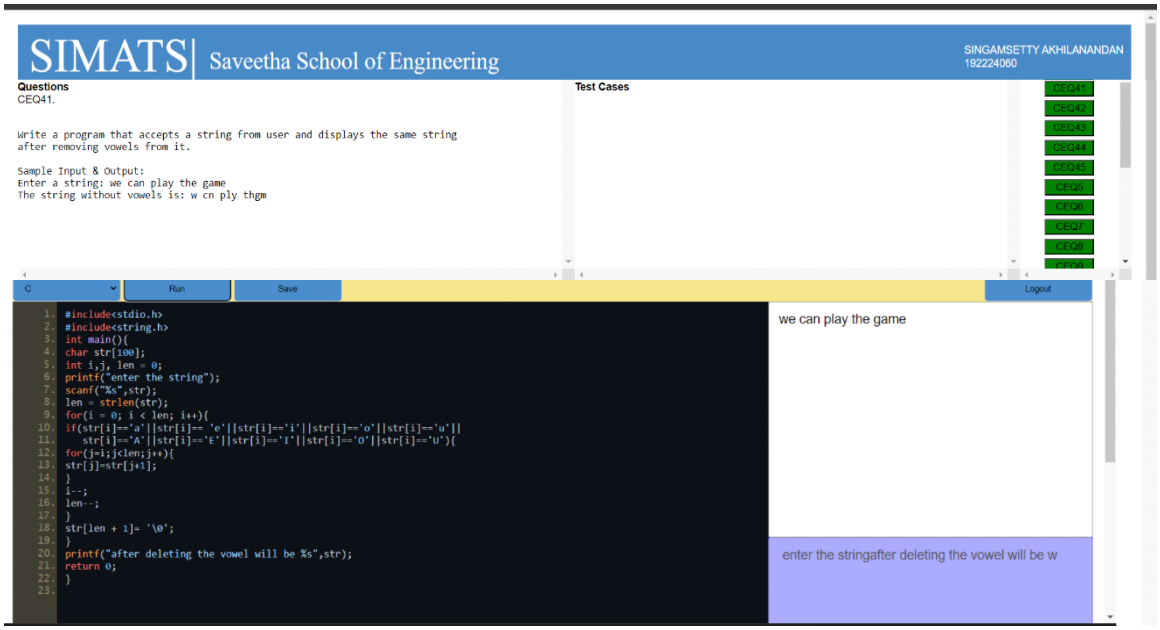
SINGAMSETTY AKHILANANDAN
192224060
Questions
CHQ5.
Write a program in C to check Armstrong and perfect numbers using the function.
Test Data :
Input any number: 371
Expected Output :
The 371 is an Armstrong number.
The 371 is not a Perfect number.
Test Cases
CEQ9
CMQ4
CMQ5
CMQ6
CMQ7
CMQ8
CHQ4
CHQ5
CHQ6
CHQ7
C
Run
Save
Logout
#include<stdio.h>
int checkarmstrong(int n1);
int checkperfect(int n1);
int main()
{
int n1;
printf("\n\n function: check armstrong and perfect number:\n");
printf("-\n");
printf("input any number:");
scanf("%d",&n1);
if(checkarmstrong(n1))
{
printf(" the %d is an armstrong number.\n",n1);
}
else
{
printf(" the %d is not armstrong number.\n",n1);
}
if (checkperfect(n1))
{
printf("the %d is a perfect number.\n\n",n1);
}
else
{
printf("the %d is not a perfect number.\n\n",n1);
}
return 0;
}
int checkarmstrong(int n1)
{
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.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Questions
CEQ41.
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
CEQ41
CEQ42
CEQ43
CEQ44
CEQ45
CEQ5
CEQ6
CEQ7
CEQ8
C
Run
Save
Logout
#include<stdio.h>
#include<string.h>
int main(){
char str[100];
int i,j, len = 0;
printf("enter the string");
scanf("%s",str);
len = strlen(str);
for(i = 0; i < len; i++){
if(str[i]=='a'||str[i]== 'e'||str[i]=='i'||str[i]=='o'||str[i]=='u'||
str[i]=='A'||str[i]=='E'||str[i]=='I'||str[i]=='O'||str[i]=='U'){
for(j=i;j<len;j++){
str[j]=str[j+1];
}
i--;
len--;
}
str[len + 1]= '\0';
}
printf("after deleting the vowel will be %s",str);
return 0;
}
we can play the game
enter the stringafter deleting the vowel will be w