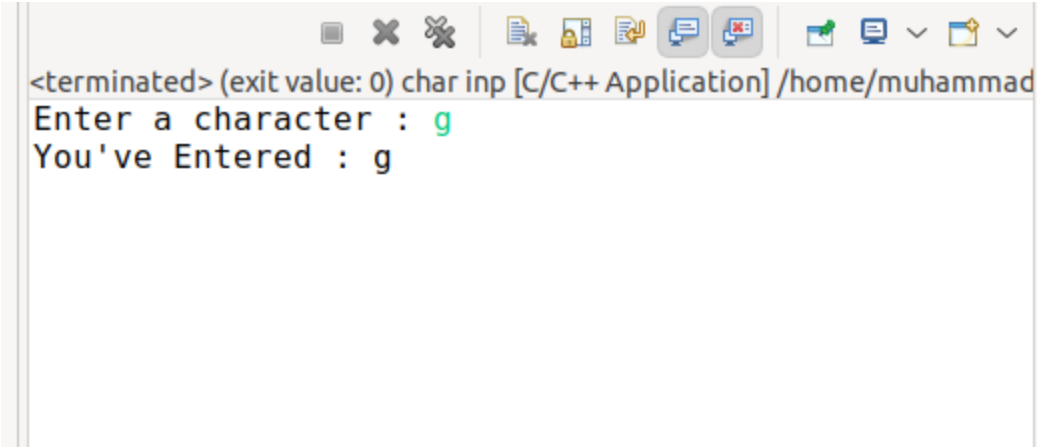


## Assignments

1. Accept a char input from the user and display it on the console.

```
//Character Input and Display
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    char charac;
    printf("Enter a character : ");
    scanf("%c",&charac);
    printf("You've Entered : %c",charac);
    return EXIT_SUCCESS;
}
```

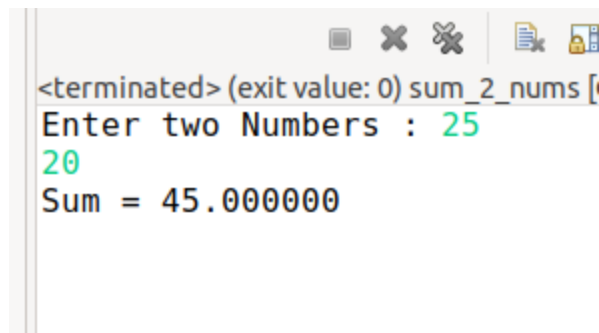


```
<terminated> (exit value: 0) char inp [C/C++ Application] /home/muhammad
Enter a character : g
You've Entered : g
```

2. Accept two inputs from the user and output its sum.

Variable	Data Type
Number 1	Integer
Number 2	Float
Sum	Float

```
//Sum of two numbers
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int num1;
    float num2,sum;
    printf("Enter two Numbers : ");
    scanf("%d%f",&num1,&num2);
    sum=num1+num2;
    printf("Sum = %f",sum);
    return EXIT_SUCCESS;
}
```



```
<terminated> (exit value: 0) sum_2_nums [
Enter two Numbers : 25
20
Sum = 45.000000
```

3. Write a program to find the simple interest.

- a. The program should accept 3 inputs from the user and calculate simple interest for the given inputs. Formula:  $SI = (P * R * n) / 100$

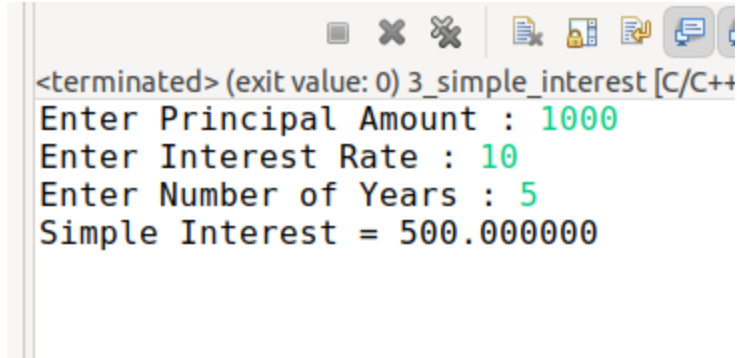
Variable	Data Type
Principal amount (P)	Integer
Interest rate (R)	Float
Number of years (n)	Float
Simple Interest (SI)	Float

```
//Simple Interest
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int p;
    float r,n,si;
    printf("Enter Principal Amount : ");
    scanf("%d",&p);
    printf("Enter Interest Rate : ");
    scanf("%f",&r);
    printf("Enter Number of Years : ");
    scanf("%f",&n);
    si=(p*r*n)/100;
```

```

printf("Simple Interest = %f",si);
return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 3_simple_interest [C/C++
Enter Principal Amount : 1000
Enter Interest Rate : 10
Enter Number of Years : 5
Simple Interest = 500.000000

```

4. Write a program to check whether a student has passed or failed in a subject after he or she enters their mark (pass mark for a subject is 50 out of 100).
  - a. The program should accept input from the user and output a message as “Passed” or “Failed.”

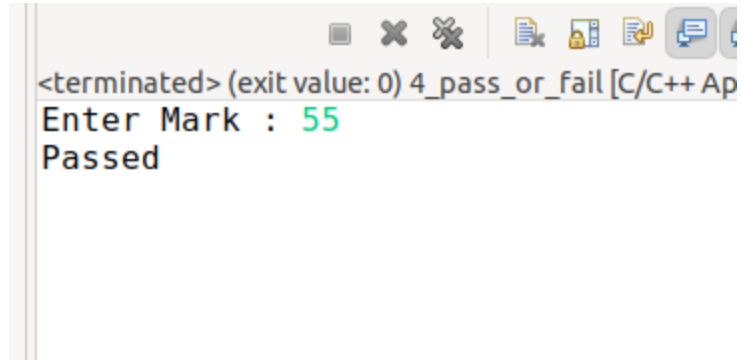
Variable	Data type
mark	float

```

//Pass or Fail
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    float mark;
    printf("Enter Mark : ");
    scanf("%f",&mark);
    if(mark>=50){

```

```
    printf("Passed");  
}else{  
    printf("Failed");  
}  
return EXIT_SUCCESS;  
}
```



5. Write a program to show the grade obtained by a student after they enter their total mark percentage.

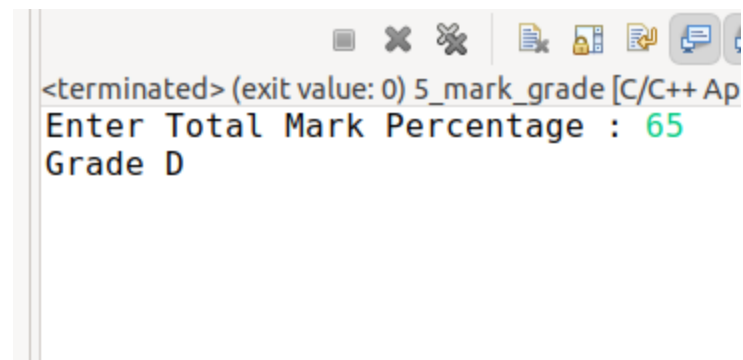
- a. The program should accept input from the user and display their grade as follows

Mark	Grade
> 90	A
80-89	B
70-79	C
60-69	D
50-59	E
< 50	Failed

Variable	Data type
Total mark	float

```
//Mark Grade
#include <stdio.h>
#include <stdlib.h>
int main(void) {
```

```
float mark;  
printf("Enter Total Mark Percentage : ");  
scanf("%f",&mark);  
if(mark>=90){  
    printf("Grade A");  
}else if(mark>=80){  
    printf("Grade B");  
}else if(mark>=70){  
    printf("Grade C");  
}else if(mark>=60){  
    printf("Grade D");  
}else if(mark>=50){  
    printf("Grade E");  
}else if(mark<50&&mark>=0){  
    printf("Failed");  
}else{  
    printf("Invalid Entry");  
}  
return EXIT_SUCCESS;  
}
```



```
<terminated> (exit value: 0) 5_mark_grade [C/C++ Ap  
Enter Total Mark Percentage : 65  
Grade D
```

6. Using the 'switch case,' write a program to accept an input number from the user and output the day as follows.

Input	Output
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday
Any other input	Invalid Entry

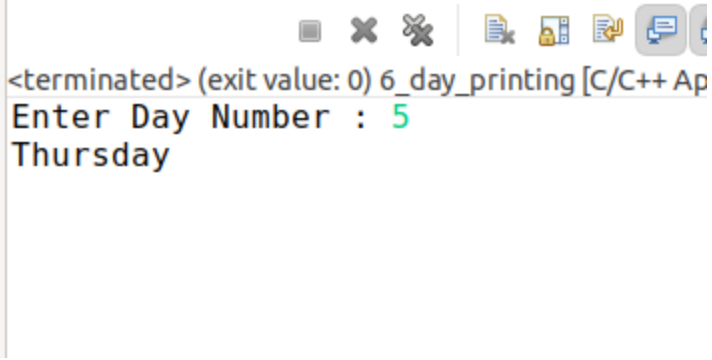
```
//Day Printing
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int day;
    printf("Enter Day Number : ");
    scanf("%d",&day);
    switch(day){
    case 1:
```



```

        printf("Sunday");break;
case 2:
        printf("Monday");break;
case 3:
        printf("Tuesday");break;
case 4:
        printf("Wednesday");break;
case 5:
        printf("Thursday");break;
case 6:
        printf("Friday");break;
case 7:
        printf("Saturday");break;
default:
        printf("Invalid Entry");break;
}
return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 6_day_printing [C/C++ Ap
Enter Day Number : 5
Thursday

```

7. Write a program to print the multiplication table of given numbers.
  - a. Accept input from the user and display its multiplication table

E.g.:

**Output:** Enter a number

**Input:** 5

**Output:**

1 x 5 = 5

2 x 5 = 10

3 x 5 = 15

4 x 5 = 20

5 x 5 = 25

6 x 5 = 30

7 x 5 = 35

8 x 5 = 40

9 x 5 = 45

10 x 5 = 50

```
//Multiplication Table
```

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

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

```
int main(void) {
```

```
    int num,i;
```

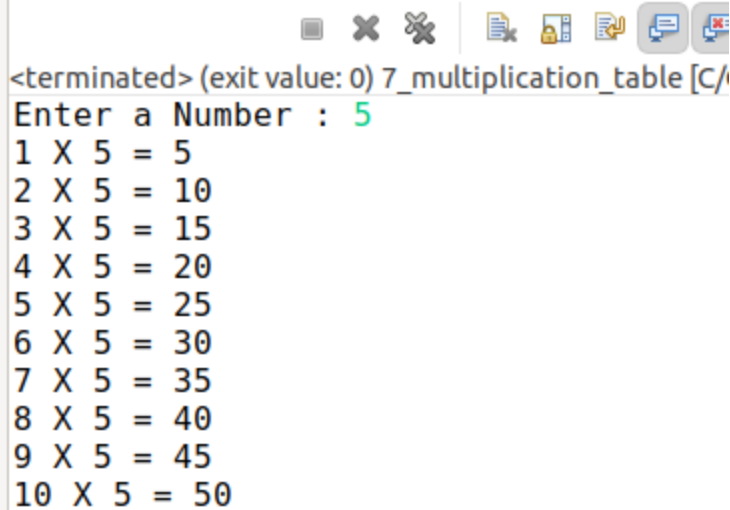
```
    printf("Enter a Number : ");
```

```
    scanf("%d",&num);
```

```
    for(i=1;i<=10;i++){
```

```
        printf("%d X %d = %d\n",i,num,i*num);
```

```
}  
return EXIT_SUCCESS;  
}
```



```
<terminated> (exit value: 0) 7_multiplication_table [C/  
Enter a Number : 5  
1 X 5 = 5  
2 X 5 = 10  
3 X 5 = 15  
4 X 5 = 20  
5 X 5 = 25  
6 X 5 = 30  
7 X 5 = 35  
8 X 5 = 40  
9 X 5 = 45  
10 X 5 = 50
```

8. Write a program to find the sum of all the odd numbers for a given limit
- Program should accept an input as limit from the user and display the sum of all the odd numbers within that limit

For example if the input limit is 10 then the result is  $1+3+5+7+9 = 25$

**Output:** Enter a limit

**Input:** 10

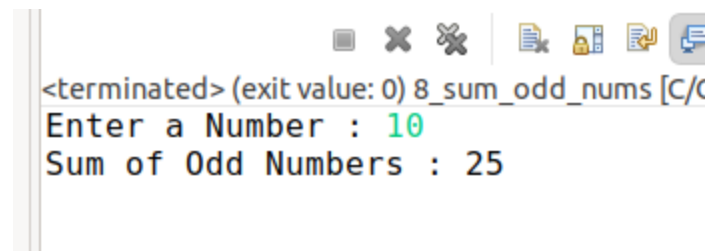
**Output:** Sum of odd numbers = 25

```
//sum of odd numbers  
#include <stdio.h>  
#include <stdlib.h>  
int main(void) {
```

```

int num,i,sum=0;
printf("Enter a Number : ");
scanf("%d",&num);
for(i=1;i<=num;i++){
    if(i%2==1){
        sum=sum+i;
    }
}
printf("Sum of Odd Numbers : %d",sum);
return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 8_sum_odd_nums [C/
Enter a Number : 10
Sum of Odd Numbers : 25

```

9. Write a program to print the following pattern (**hint**: use nested loop)

```

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

```

```

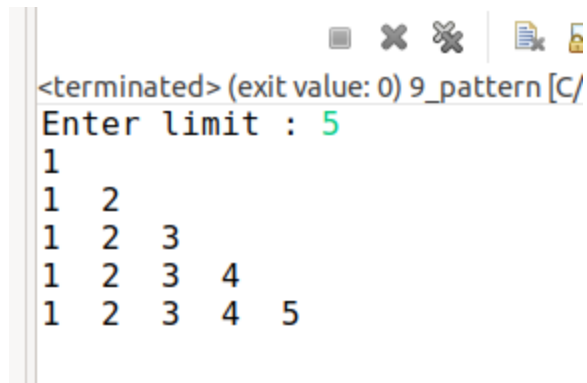
//Number Pattern
#include <stdio.h>
#include <stdlib.h>

```

```

int main(void) {
    int limit,i,j;
    printf("Enter limit : ");
    scanf("%d",&limit);
    for(i=1;i<=limit;i++){
        for(j=1;j<=i;j++){
            printf("%d ",j);
        }
        printf("\n");
    }
    return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 9_pattern [C/
Enter limit : 5
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

```

10. Write a program to interchange the values of two arrays.

- a. Program should accept an array from the user, swap the values of two arrays and display it on the console

Eg: **Output:** Enter the size of arrays

**Input:** 5

**Output:** Enter the values of Array 1

**Input:** 10, 20, 30, 40, 50

**Output:** Enter the values of Array 2

**Input:** 15, 25, 35, 45, 55

**Output:** Arrays after swapping:

Array1: 15, 25, 35, 45, 55

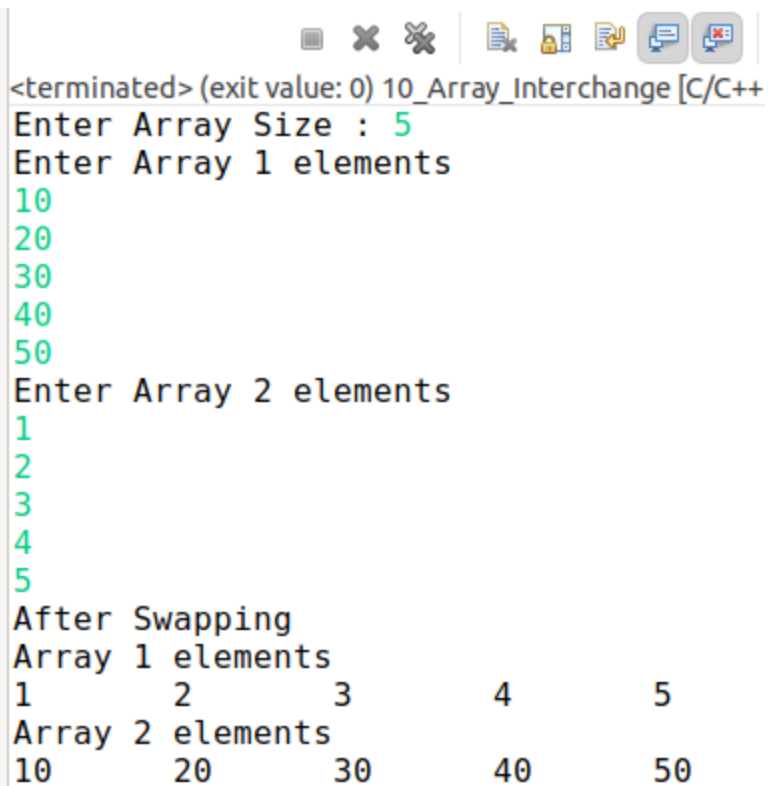
Array2: 10, 20, 30, 40, 50

```
//Array Values Interchange
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int arr1[50],arr2[50],i,size,temp;
    printf("Enter Array Size : ");
    scanf("%d",&size);
    printf("Enter Array 1 elements\n");
    for(i=0;i<size;i++){
        scanf("%d",&arr1[i]);
    }
    printf("Enter Array 2 elements\n");
    for(i=0;i<size;i++){
        scanf("%d",&arr2[i]);
    }
    for(i=0;i<size;i++){
        temp=arr1[i];
        arr1[i]=arr2[i];
        arr2[i]=temp;
    }
    printf("After Swapping\nArray 1 elements\n");
```

```

for(i=0;i<size;i++){
    printf("%d\t",arr1[i]);
}
printf("\nArray 2 elements\n");
for(i=0;i<size;i++){
    printf("%d\t",arr2[i]);
}
return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 10_Array_Interchange [C/C++
Enter Array Size : 5
Enter Array 1 elements
10
20
30
40
50
Enter Array 2 elements
1
2
3
4
5
After Swapping
Array 1 elements
1      2      3      4      5
Array 2 elements
10     20     30     40     50

```

11. Write a program to find the number of even numbers in an array
  - a. The program should accept an array and display the number of even numbers contained in that array

E.g.: **Output:** Enter the size of an array

**Input:** 5

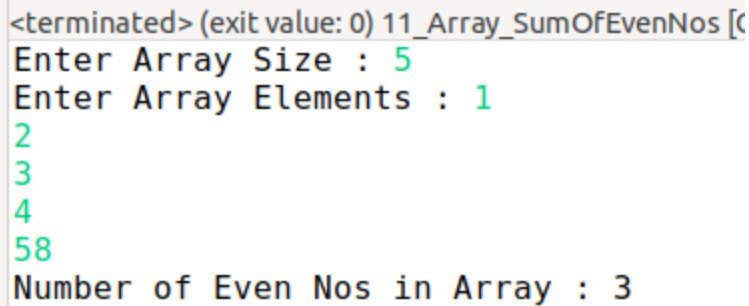
**Output:** Enter the values of array

**Input:** 11, 20, 34, 50, 33

**Output:** Number of even numbers in the given array is 3

```
//No Of Even Nos in the Array
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int arr[50],i,limit,count=0;
    printf("Enter Array Size : ");
    scanf("%d",&limit);
    printf("Enter Array Elements : ");
    for(i=0;i<limit;i++){
        scanf("%d",&arr[i]);
        if(arr[i]%2==0){
            count++;
        }
    }
    printf("Number of Even Nos in Array : %d",count);
    return EXIT_SUCCESS;
}
```





```
<terminated> (exit value: 0) 11_Array_SumOfEvenNos [C...
Enter Array Size : 5
Enter Array Elements : 1
2
3
4
58
Number of Even Nos in Array : 3
```

12. Write a program to sort an array in descending order

- a. Program should accept an array, sort the array values in descending order and display it

Eg: **Output:** Enter the size of an array

**Input:** 5

**Output:** Enter the values of array

**Input:** 20, 10, 50, 30, 40

**Output:** Sorted array:

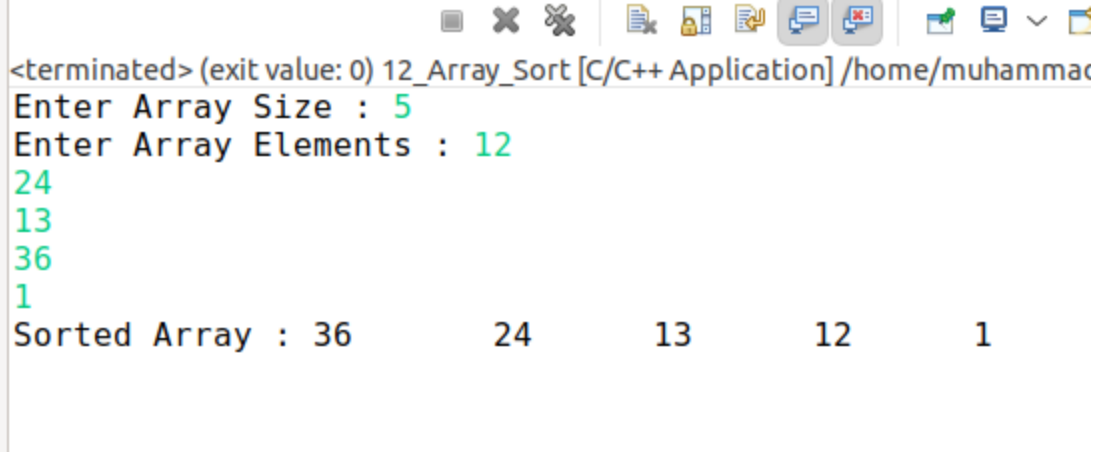
50, 40, 30, 20, 10

```
//Array Sort Descending Order
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int size,arr[20],i,j,temp;
    printf("Enter Array Size : ");
    scanf("%d",&size);
    printf("Enter Array Elements : ");
```

```

for(i=0;i<size;i++){
    scanf("%d",&arr[i]);
}
for(i=0;i<size-1;i++){
    for(j=i+1;j<size;j++){
        if(arr[i]<arr[j]){
            temp=arr[i];
            arr[i]=arr[j];
            arr[j]=temp;
        }
    }
}
printf("Sorted Array : ");
for(i=0;i<size;i++){
    printf("%d\t",arr[i]);
}
return EXIT_SUCCESS;
}

```



```

<terminated> (exit value: 0) 12_Array_Sort [C/C++ Application] /home/muhammac
Enter Array Size : 5
Enter Array Elements : 12
24
13
36
1
Sorted Array : 36      24      13      12      1

```

13. Write a program to identify whether a string is a palindrome or not

- a. A string is a palindrome if it reads the same backward or forward eg:  
MALAYALAM

Program should accept a string and display whether the string is a  
palindrome or not

Eg: **Output:** Enter a string

**Input:** MALAYALAM

**Output:** Entered string is a palindrome

Eg 2: **Output:** Enter a string

**Input:** HELLO

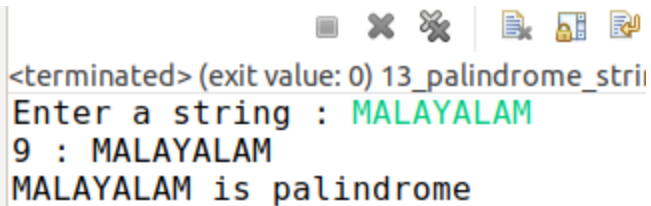
**Output:** Entered string is not a palindrome

```
//Palindrome String
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
int main(void) {
    char abc[20];
    int i,leng,flag=0;
    printf("Enter a string : ");
    scanf("%s",abc);
    leng=strlen(abc);
    //printf("%d : %s",leng,abc);
    for(i=0;i<leng;i++){
        if(abc[i]!=abc[leng-i-1]){
            flag=1;
            printf("\n%s is not palindrome",abc);
```

```

        break;
    }
}
if(flag==0){
    printf("\n%s is palindrome",abc);
}
return EXIT_SUCCESS;
}

```




A terminal window with a title bar containing icons for window management and file operations. The text inside the terminal shows the program's execution for the input string 'MALAYALAM'.

```

<terminated> (exit value: 0) 13_palindrome_stri
Enter a string : MALAYALAM
9 : MALAYALAM
MALAYALAM is palindrome

```



A terminal window with a title bar containing icons for window management and file operations. The text inside the terminal shows the program's execution for the input string 'HELLO'.

```

<terminated> (exit value: 0) 13_palindrome_stri
Enter a string : HELLO

HELLO is not palindrome

```

14. Write a program to add to two dimensional arrays

- a. Program should accept two 2D arrays and display its sum

Eg: **Output:** Enter the size of arrays

**Input:** 3

**Output:** Enter the values of array 1

**Input:**

1 2 3

4 5 6

7 8 9

**Output:** Enter the values of array 2

**Input:**

10 20 30

40 50 60

70 80 90

**Output:** Sum of 2 arrays is:

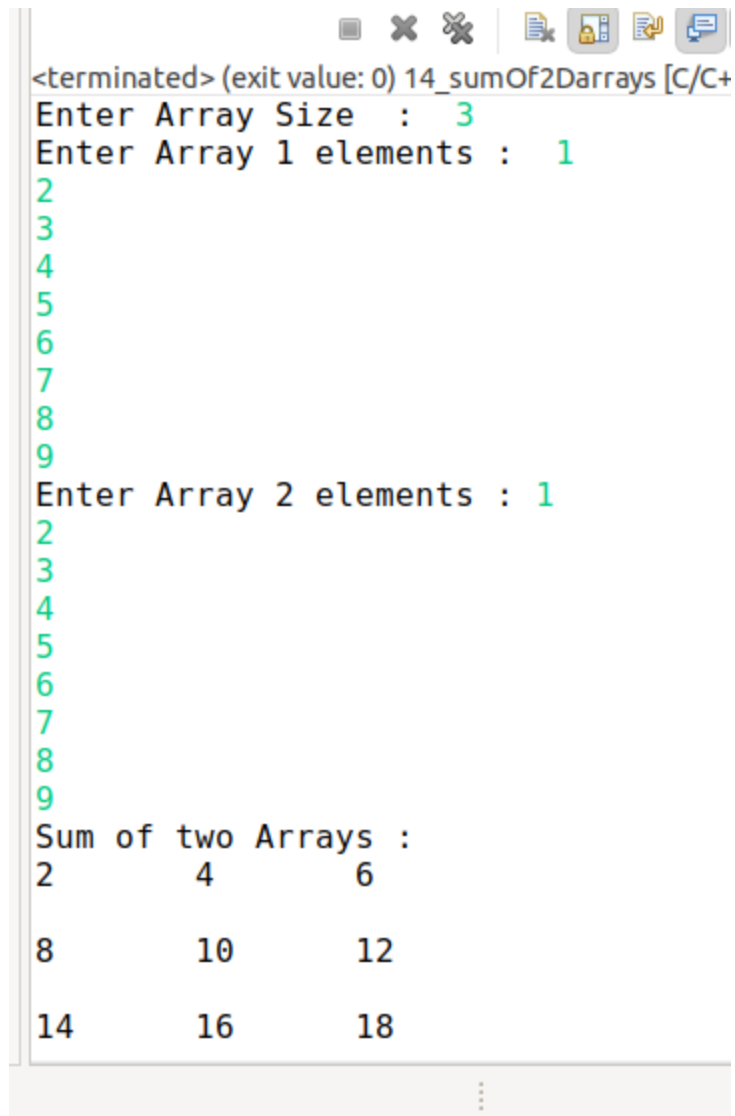
11 22 33

44 55 66

77 88 99

```
//Sum of two 2D Arrays
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int arr1[10][10],arr2[10][10],i,j,limit;
    printf("Enter Array Size : ");
    scanf("%d",&limit);
    printf("Enter Array 1 elements : ");
    for(i=0;i<limit;i++){
```

```
        for(j=0;j<limit;j++){
            scanf("%d",&arr1[i][j]);
        }
    }
    printf("Enter Array 2 elements : ");
    for(i=0;i<limit;i++){
        for(j=0;j<limit;j++){
            scanf("%d",&arr2[i][j]);
        }
    }
    printf("Sum of two Arrays : \n");
    for(i=0;i<limit;i++){
        for(j=0;j<limit;j++){
            printf("%d\t",arr1[i][j]+arr2[i][j]);
        }
        printf("\n\n");
    }
    return EXIT_SUCCESS;
}
```



```
<terminated> (exit value: 0) 14_sumOf2Darrays [C/C+
Enter Array Size : 3
Enter Array 1 elements : 1
2
3
4
5
6
7
8
9
Enter Array 2 elements : 1
2
3
4
5
6
7
8
9
Sum of two Arrays :
2      4      6
8      10     12
14     16     18
```

15. Write a program to accept an array and display it on the console using functions

- a. Program should contain 3 functions including main() function

**main()**

1. Declare an array
2. Call function `getArray()`
3. Call function `displayArray()`

**getArray()**

1. Get values to the array

**displayArray()**

1. Display the array values

```
//Array function elements reading and displaying
#include <stdio.h>
#include <stdlib.h>
int getArray(int array[10]){
    int size;
    printf("Enter Array Size : ");
    scanf("%d",&size);
    printf("Enter Array elements : \n");
    for(int i=0;i<size;i++){
        scanf("%d",&array[i]);
    }
    return size;
}
void displayArray(int array[10],int size){
    int i;
    printf("Array Elements : \n");
    for(i=0;i<size;i++){
        printf("%d\n",array[i]);
    }
}
int main(void){
    int limit,arr[10];
    limit=getArray(arr);
    displayArray(arr,limit);
}
```



```
return EXIT_SUCCESS;
}

<terminated> (exit value: 0) 15_array
Enter Array Size : 5
Enter Array elements :
1
2
3
4
5
Array Elements :
1
2
3
4
5
```

16. Write a java program to check whether a given number is prime or not

- a. Program should accept an input from the user and display whether the number is prime or not

Eg: **Output:** Enter a number

**Input:** 7

**Output:** Entered number is a Prime number

```
//Prime Nmbre
import java.util.Scanner;
public class primeNumber {
    public static void main(String a[]) {
        int num,i,flag=0;
        Scanner s=new Scanner(System.in);
        System.out.println("Enter a number : ");
        num=s.nextInt();
```

```

for(i=2;i<=num/2;i++) {
    if(num%i==0) {
        flag=1;
        System.out.println(num+" is not a prime number");
        break;
    }
}
if(flag==0) {
    System.out.println(num+" is a prime number");
}
}
}

```

```

<terminated> primeNumber [Java Application] /t
Enter a number :
3
3 is a prime number

```

17. Write a menu driven java program to do the basic mathematical operations such as addition, subtraction, multiplication and division (**hint**: use if else ladder or switch)
- Program should have 4 functions named addition(), subtraction(), multiplication() and division()
  - Should create a class object and call the appropriate function as user prefers in the main function

### **Main Class**

```
import java.util.Scanner;
```

```
public class SampleMain {
```

```

public static void main(String aa[]) {
    int choice;
    Scanner sc=new Scanner(System.in);
    Options obj1=new Options();
    System.out.println("Enter two numbers : ");
    obj1.num1=sc.nextInt();
    obj1.num2=sc.nextInt();
    System.out.println("1. Addition\t2.Subtraction\t3.Multiplication\t4.Division");
    System.out.print("Enter your choice : ");
    choice=sc.nextInt();
    switch(choice) {
        case 1 : obj1.sum();obj1.display();break;
        case 2 : obj1.subtraction();obj1.display();break;
        case 3 : obj1.multiplication();obj1.display();break;
        case 4 : obj1.division();obj1.display();break;
        default : System.out.println("Invalid Choice !");break;
    }
}
}

```

### **Options Class**

```

public class Options {

    int num1,num2,result;

    void sum() {

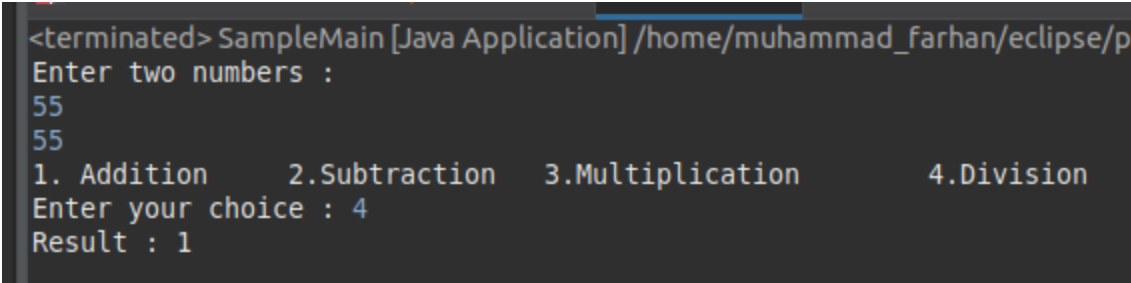
```

```

        result=num1+num2;
    }
    void subtraction() {
        result=num1-num2;
    }
    void multiplication() {
        result=num1*num2;
    }
    void division() {
        result=num1/num2;
    }
    void display() {
        System.out.println("Result : "+result);
    }
}

```

Result :



```

<terminated> SampleMain [Java Application] /home/muhammad_farhan/eclipse/p
Enter two numbers :
55
55
1. Addition    2.Subtraction    3.Multiplication    4.Division
Enter your choice : 4
Result : 1

```

18. Grades are computed using a weighted average. Suppose that the written test counts 70%, lab exams 20% and assignments 10%.

If Arun has a score of

Written test = 81

Lab exams = 68

Assignments = 92

Arun's overall grade =  $(81 \times 70)/100 + (68 \times 20)/100 + (92 \times 10)/100 = 79.5$

Write a program to find the grade of a student during his academic year.

- a. Program should accept the scores for written test, lab exams and assignments
- b. Output the grade of a student (using weighted average)

Eg:

Enter the marks scored by the students

Written test = 55

Lab exams = 73

Assignments = 87

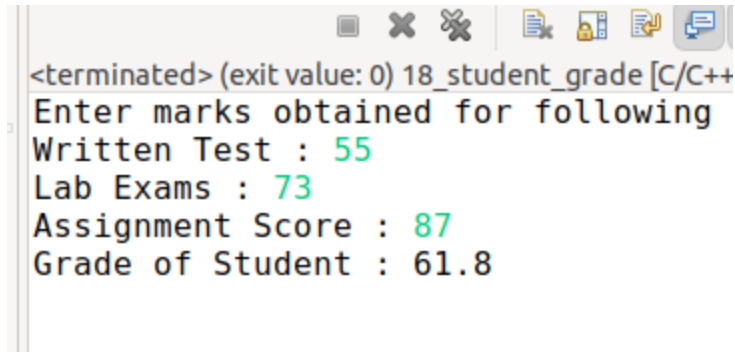
Grade of the student is 61.8

```
//Student Grade using weighted average
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    float written,lab,assignment,grade;
    printf("Enter marks obtained for following");
    printf("\nWritten Test : ");
    scanf("%f",&written);
    printf("Lab Exams : ");
    scanf("%f",&lab);
    printf("Assignment Score : ");
    scanf("%f",&assignment);
```

```

grade=((written*70/100)+(lab*20/100)+(assignment*10/100));
printf("Grade of Student : %.1f",grade);
return EXIT_SUCCESS;
}

```



The screenshot shows a terminal window with the following text:

```

<terminated> (exit value: 0) 18_student_grade [C/C++
Enter marks obtained for following
Written Test : 55
Lab Exams : 73
Assignment Score : 87
Grade of Student : 61.8

```

19. Income tax is calculated as per the following table

Annual Income	Tax percentage
Up to 2.5 Lakhs	No Tax
Above 2.5 Lakhs to 5 Lakhs	5%
Above 5 Lakhs to 10 Lakhs	20%
Above 10 Lakhs to 50 Lakhs	30%

Write a program to find out the income tax amount of a person.

- Program should accept annual income of a person  
Output the amount of tax he has to pay

Eg 1:

Enter the annual income

495000

Income tax amount = 24750.00

Eg 2:

Enter the annual income

500000

Income tax amount = 25000.00

```
//Annual Income Tax
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    long int inc;
    float inc_tax;
    printf("Enter annual income : ");
    scanf("%ld",&inc);
    if(inc<250000){
        printf("No Income tax");
    }else if(inc>=250000&&inc<500000){
        inc_tax=0.05*inc;
        printf("Income Tax Amount : %.2f",inc_tax);
    }else if(inc>=500000&&inc<1000000){
        inc_tax=0.2*inc;
        printf("Income Tax Amount : %.2f",inc_tax);
    }else if(inc>=1000000&&inc<5000000){
        inc_tax=0.3*inc;
        printf("Income Tax Amount : %.2f",inc_tax);
    }
    return EXIT_SUCCESS;
}
```

```
<terminated> (exit value: 0) 19_income_tax [C/C+  
Enter annual income : 500002  
Income Tax Amount : 100000.40
```

20. Write a program to print the following pattern using for loop

```
1  
  
2    3  
  
4    5    6  
  
7    8    9    10
```

```
//Number Pattern  
#include <stdio.h>  
#include <stdlib.h>  
int main(void) {  
    int limit,i,j,k=1;  
    printf("Enter Number of rows : ");  
    scanf("%d",&limit);  
    for(i=0;i<=limit;i++){  
        for(j=0;j<i;j++){  
            printf("%d  ",k);  
            k=k+1;  
        }
```



```

    }
    printf("\n");
}
return EXIT_SUCCESS;
}

```

```

<terminated> (exit value: 0) 20_number_pattern [
Enter Number of rows : 5

1
2  3
4  5  6
7  8  9  10
11 12 13 14 15

```

21. Write a program to multiply the adjacent values of an array and store it in an another array

- Program should accept an array
- Multiply the adjacent values
- Store the result into another array

Eg:

Enter the array limit

5

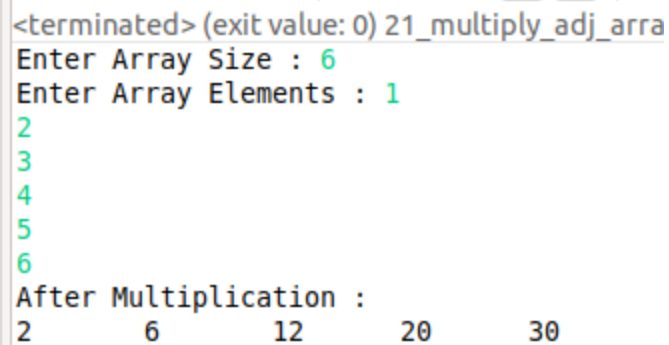
Enter the values of array

1      2      3      4      5

Output

2      6      12      20

```
//Multiply adjacent array values
#include <stdio.h>
#include <stdlib.h>
int main(void) {
    int arr1[10],arr2[10],arr_size,i;
    printf("Enter Array Size : ");
    scanf("%d",&arr_size);
    printf("Enter Array Elements : ");
    for(i=0;i<arr_size;i++){
        scanf("%d",&arr1[i]);
    }
    printf("After Multiplication : \n");
    for(i=0;i<arr_size-1;i++){
        arr2[i]=arr1[i]*arr1[i+1];
        printf("%d\t",arr2[i]);
    }
    return EXIT_SUCCESS;
}
```



```
<terminated> (exit value: 0) 21_multiply_adj_arra
Enter Array Size : 6
Enter Array Elements : 1
2
3
4
5
6
After Multiplication :
2      6      12      20      30
```

22. Write a program to add the values of two 2D arrays
- Program should contains 3 functions including the main function

### **main()**

1. Call function `getArray()`
2. Call function `addArray()`
3. Call function `displayArray()`

### **getArray()**

1. Get values to the array

### **getArray()**

1. Add array 1 and array 2

### **displayArray()**

1. Display the array values

Eg:

Enter the size of array

2

Enter the values of array 1

1      2

3      4

Enter the values of array 2

5      6

7      8

Output:

Sum of array 1 and array 2:

6      8

10     12

```
//Array functions for reading,sum,displaying two 2D Arrays
```

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

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

```
int getArray(int array1[10][10],int array2[10][10]){
```

```
    int i,j,size;
```

```
    printf("Enter Array Size : ");
```

```
    scanf("%d",&size);
```

```
    printf("Enter Array 1 elements : \n");
```

```
    for(i=0;i<size;i++){
```

```
        for(j=0;j<size;j++){
```

```
            scanf("%d",&array1[i][j]);
```

```
        }
```

```
    }
```

```
    printf("Enter Array 2 elements : \n");
```

```
    for(i=0;i<size;i++){
```

```
        for(j=0;j<size;j++){
```

```
            scanf("%d",&array2[i][j]);
```

```
        }
```

```
    }
```

```
    return size;
```

```
}
```

```
void addArray(int array1[10][10],int array2[10][10],int array3[10][10],int size){
```

```
int i,j;
for(i=0;i<size;i++){
    for(j=0;j<size;j++){
        array3[i][j]=array1[i][j]+array2[i][j];
    }
}

void displayArray(int array[10][10], int size){
    int i,j;
    printf("Array after adding : \n");
    for(i=0;i<size;i++){
        for(j=0;j<size;j++){
            printf("%d\t",array[i][j]);
        }
        printf("\n\n");
    }
}

int main(void){
    int limit,arr1[10][10],arr2[10][10],arr3[10][10];
    limit=getArray(arr1,arr2);
    addArray(arr1,arr2,arr3,limit);
    displayArray(arr3,limit);
    return EXIT_SUCCESS;
}
```

```
<terminated> (exit value: 0) 22_array_f
```

```
Enter Array Size : 3
```

```
Enter Array 1 elements :
```

```
1  
2  
3  
4  
5  
6  
7  
8  
9
```

```
Enter Array 2 elements :
```

```
10  
20  
30  
40  
50  
60  
70  
80  
90
```

```
Array after adding :
```

```
11      22      33  
  
44      55      66  
  
77      88      99
```

23. Write an object oriented program in java to store and display the values of a 2D array

- a. Program should contains 3 functions including the main function

**main()**

1. Declare an array
2. Call function `getArray()`
3. Call function `displayArray()`

**getArray()**

1. Get values to the array

### **displayArray()**

1. Display the array values

Eg:

Enter the size of array

3

Enter the array values

1      2      3

4      5      6

7      8      9

Array elements are:

1      2      3

4      5      6

7      8      9

### **Main Class**

```
public class MyClass {  
    public static void main(String str[]) {  
        ArrayClass obj1=new ArrayClass();  
        obj1.getArray();  
        obj1.displayArray();  
    }  
}
```

```
}
```

### **Array Functions' Class**

```
import java.util.Scanner;
```

```
public class ArrayClass {
```

```
    int size,i,j;
```

```
    int[][] arr=new int[5][5];
```

```
//    arr=new int[5][5];
```

```
    Scanner sca=new Scanner(System.in);
```

```
    void getArray() {
```

```
        System.out.print("Enter Array Size : ");
```

```
        size=sca.nextInt();
```

```
        System.out.println("Enter Array Elements : ");
```

```
        for(i=0;i<size;i++) {
```

```
            for(j=0;j<size;j++) {
```

```
                arr[i][j]=sca.nextInt();
```

```
            }
```

```
        }
```

```
    }
```

```
    void displayArray() {
```

```
        System.out.println("Array Elements : ");
```

```
        for(i=0;i<size;i++) {
```

```
            for(j=0;j<size;j++) {
```

```
                System.out.print(arr[i][j]+"\\t");
```

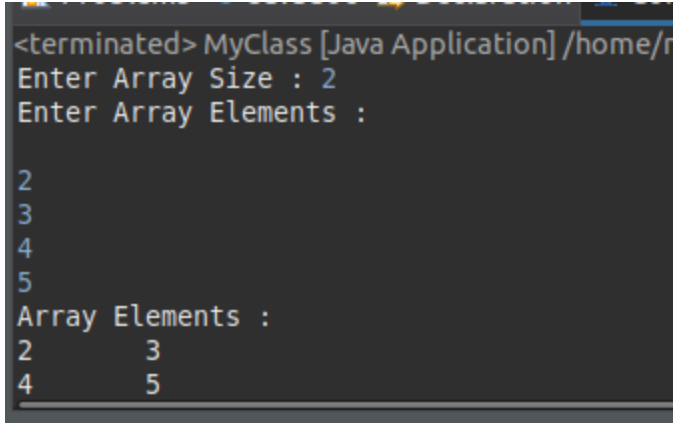
```
            }
```

```
        System.out.println();
```

```
    }
```



```
}  
}
```



```
<terminated> MyClass [Java Application] /home/r  
Enter Array Size : 2  
Enter Array Elements :  
  
2  
3  
4  
5  
Array Elements :  
2      3  
4      5
```

24. Write a menu driven program in java to calculate the area of a given object.
- Program should contain two classes
    - Class 1: MyClass
    - Class 2: Area
  - Class MyClass should inherit class Area and should contain the following functions
    - main()
    - circle()
    - square()
    - rectangle()
    - triangle()
  - Class Area should contain the following functions to calculate the area of different objects
    - circle()
    - square()
    - rectangle()
    - triangle()

```
Class MyClass extends Area{

    public static void main(string args[]){

    }

    circle() {

    }

    square() {

    }

    rectangle() {

    }

    triangle() {

    }

}
```

```
Class Area{

    circle(){

    }

    square(){

    }

    rectangle() {
```

```
}  
  
triangle() {  
  
}  
  
}
```

Eg 1:

Enter your choice

1. Circle
2. Square
3. Rectangle
4. Triangle

2

Enter the length

2

Output

Area of the square is: 4

Eg 2:

Enter your choice

1. Circle

2. Square
3. Rectangle
4. Triangle

1

Enter the radius

3

Output

Area of the circle is: 28.26

*Code of the program & screenshot of the output*

25. Write a program to skip two elements after the occurrence of an odd number and print the array elements in the following pattern

```
* *  
*  
*  
*  
* * * *  
*  
*  
*  
*  
*  
*  
* * * * *  
* * * * * *
```

*//Number Pattern*

*#include <stdio.h>*

*#include <stdlib.h>*

```

int main(void) {
    int row,i,j,val=1;
    printf("Enter No of rows : ");
    scanf("%d",&row);
    for(i=1;i<=row;i++){
        for(j=1;j<=2*i;j++){
            printf("%d ",val);
            if(val%2==1){
                val=val+3;
            }else{
                val=val+1;
            }
        }
        printf("\n");
        if(i==row){
            break;
        }
        for(j=1;j<=3;j++){
            printf("%d\n",val);
            if(val%2==1){
                val=val+3;
            }else{
                val=val+1;
            }
        }
    }
    return EXIT_SUCCESS;
}

```

```
<terminated> (exit value: 0) WEEK_0.1_25 [C/C++
Enter No of rows : 3
1 4
5
8
9
12 13 16 17
20
21
24
25 28 29 32 33 36
```