

Assignment of C programming

1. WAP where input base and height and then calculate area of triangle.
2. WAP where input length and breadth from user and display the area of rectangle.
3. WAP to find the simple interest.
4. WAP to convert temperature from degree Centigrade to Fahrenheit and Fahrenheit to Centigrade.
5. WAP to convert Kilogram to Gram and Gram to Kilogram.
6. WAP where input the value of a and b display the following output
 1. $(a+b)^2 = a^2 + 2ab + b^2$
 2. $a^2 - b^2 = (a+b) * (a-b)$
7. WAP to swap two numbers without using third variable.
8. WAP swap two values.

Input
 1. A=10
 2. B=30Output
 3. A=30
 4. B=10
9. WAP calculate compound interest.

If statement

10. Write a C program to find maximum between two numbers.
11. Write a C program to find maximum between three numbers without logical operator
12. Write a C program to check whether a number is negative, positive or zero.
13. Write a C program to check whether a number is divisible by 5 and 11 or not.
14. Write a C program to check whether a number is even or odd.
15. Write a C program to check whether a year is leap year or not.
16. Write a C program to input week number and print week day.
17. Write a C program to input month number and print number of days in that month.
18. Write a C program to count total number of notes in given amount.
19. Write a C program to input angles of a triangle and check whether triangle is valid or not.
20. Write a C program to input all sides of a triangle and check whether triangle is valid or not.

21. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.
22. Write a C program to find all roots of a quadratic equation.
23. Write a C program to calculate profit or loss.
24. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:

Percentage	>=	90%	:	Grade	A
Percentage	>=	80%	:	Grade	B
Percentage	>=	70%	:	Grade	C
Percentage	>=	60%	:	Grade	D
Percentage	>=	40%	:	Grade	E
Percentage < 40% : Grade F					
25. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:

Basic Salary	<=	10000	:	HRA	=	20%,	DA	=	80%
Basic Salary	<=	20000	:	HRA	=	25%,	DA	=	90%
Basic Salary > 20000 : HRA = 30%, DA = 95%									
26. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:

For	first	50	units	Rs.	0.50/unit
For	next	100	units	Rs.	0.75/unit
For	next	200	units	Rs.	1.20/unit
For unit above 250 Rs. 1.50/unit					

An additional surcharge of 20% is added to the bill

Switch case

1. Write a C program to print day of week name using switch case.
2. Write a C program print total number of days in a month using switch case.
3. Write a C program to check whether an alphabet is vowel or consonant using switch case.
4. Write a C program to find maximum between two numbers using switch case.
5. Write a C program to check whether a number is even or odd using switch case.
6. Write a C program to check whether a number is positive, negative or zero using switch case.
7. Write a C program to find roots of a quadratic equation using switch case.
8. Write a C program to create Simple Calculator using switch case.

For loop , while loop, do loop

1. Write a C program to print all natural numbers from 1 to n. - using while loop
2. Write a C program to print all natural numbers in reverse (from n to 1). - using while loop
3. Write a C program to print all alphabets from a to z. - using while loop
4. Write a C program to print all even numbers between 1 to 100. - using while loop
5. Write a C program to print all odd number between 1 to 100.
6. Write a C program to find sum of all natural numbers between 1 to n.
7. Write a C program to find sum of all even numbers between 1 to n.
8. Write a C program to find sum of all odd numbers between 1 to n.
9. Write a C program to print multiplication table of any number.
10. Write a C program to count number of digits in a number.
11. Write a C program to find first and last digit of a number.
12. Write a C program to find sum of first and last digit of a number.
13. Write a C program to swap first and last digits of a number.
14. Write a C program to calculate sum of digits of a number.
15. Write a C program to calculate product of digits of a number.
16. Write a C program to enter a number and print its reverse.
17. Write a C program to check whether a number is palindrome or not.
18. Write a C program to find frequency of each digit in a given integer.
19. Write a C program to enter a number and print it in words.
20. Write a C program to print all ASCII character with their values.
21. Write a C program to find power of a number using for loop.
22. Write a C program to find all factors of a number.
23. Write a C program to calculate factorial of a number.
24. Write a C program to find HCF (GCD) of two numbers.
25. Write a C program to find LCM of two numbers.
26. Write a C program to check whether a number is Prime number or not.
27. Write a C program to print all Prime numbers between 1 to n.
28. Write a C program to find sum of all prime numbers between 1 to n.
29. Write a C program to find all prime factors of a number.
30. Write a C program to check whether a number is Armstrong number or not.
31. Write a C program to print all Armstrong numbers between 1 to n.
32. Write a C program to check whether a number is Perfect number or not.
33. Write a C program to print all Perfect numbers between 1 to n.
34. Write a C program to check whether a number is Strong number or not.
35. Write a C program to print all Strong numbers between 1 to n.
36. Write a C program to print Fibonacci series up to n terms.
 - 1) Write a C program to find one's complement of a binary number.

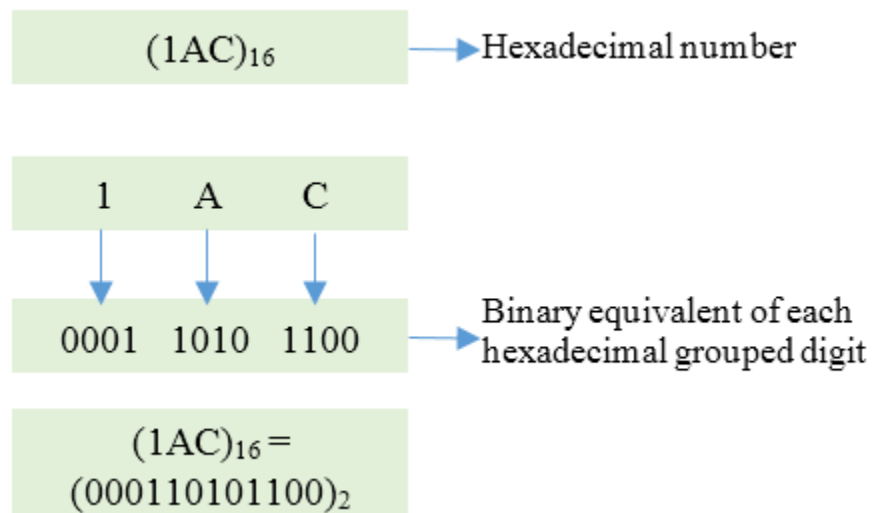
- 2) Write a C program to find two's complement of a binary number.
- 3) Write a C program to convert Binary to Octal number system.
- 4) Write a C program to convert Binary to Decimal number system.
- 5) Write a C program to convert Binary to Hexadecimal number system.
- 6) Write a C program to convert Octal to Binary number system.
- 7) Write a C program to convert Octal to Decimal number system.
- 8) Write a C program to convert Octal to Hexadecimal number system.
- 9) Write a C program to convert Decimal to Binary number system.
- 10) Write a C program to convert Decimal to Octal number system.
- 11) Write a C program to convert Decimal to Hexadecimal number system.
- 12) Write a C program to convert Hexadecimal to Binary number system.

Input

Input hexadecimal: 1A

Output

Decimal number: 26



- 13) Write a C program to convert Hexadecimal to Octal number system.

Input

Input hexadecimal: 1A

Output

Octal number: 32

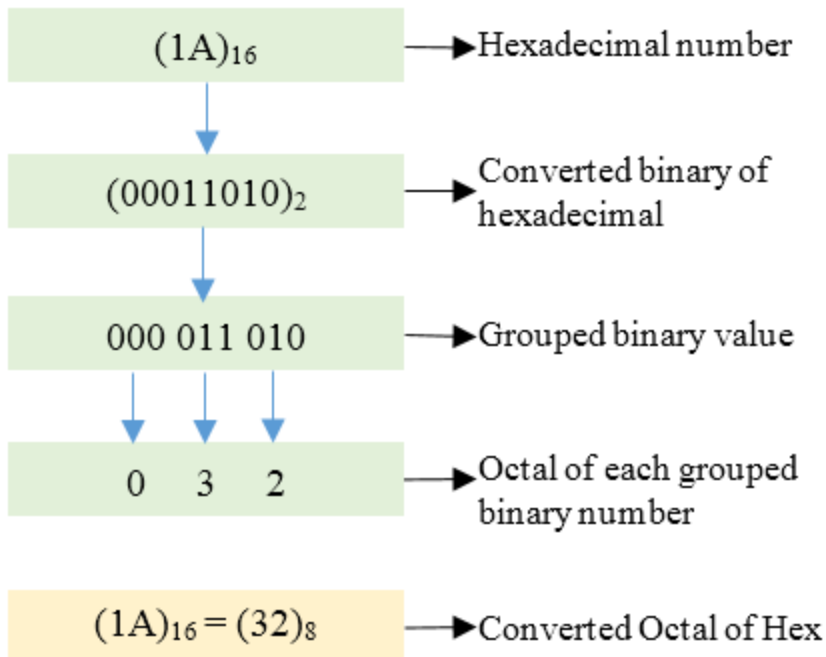
- 14) Write a C program to convert Hexadecimal to Decimal number system.

Input

Input hexadecimal: 1A

Output

Decimal number: 26



15) Write a C program to print Pascal triangle upto n rows.

Input

Input rows: 5

Output

```

    1
   1 1
  1 2 1
 1 3 3 1
1 4 6 4 1

```

List of star pattern programming

```

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

```

Square Star Pattern

```

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

```

Hollow Square Star Pattern

```

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

```

Hollow Square Star Pattern with Diagonal

```

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

```

Rhombus Star Pattern

```

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

```

Hollow Rhombus Star Pattern

```

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

```

Mirrored Rhombus Star Pattern

```

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

```

Hollow Mirrored Rhombus Star Pattern

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

Right Triangle Star Pattern

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

Hollow Right Triangle Star Pattern

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

Mirrored Right Triangle Star Pattern

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

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

Inverted Right Triangle Star Pattern

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

Hollow Inverted Right Triangle Star Pattern

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

Inverted Mirrored Right Triangle Star Pattern

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

Hollow Inverted Mirrored Right Triangle Star Pattern

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

Pyramid Star Pattern

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

Hollow Pyramid Star Pattern

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

Inverted Pyramid Star Pattern

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


*

Hollow Inverted Pyramid Star Pattern

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

Half Diamond Star Pattern

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

Mirrored Half Diamond Star Pattern

Square number patterns

```
11111
11111
11111
11111
11111
```

Number pattern 1

```
11111
00000
11111
00000
11111
```

Number pattern 2

01010
01010
01010
01010
01010

Number pattern 3

11111
10001
10001
10001
11111

Number pattern 4

11111
11111
11011
11111
11111

Number pattern 5

10101
01010
10101
01010
10101

Number pattern 6

11011
11011
00000
11011
11011

Number pattern 7

10001
01010
00100
01010
10001

Triangle Easy Number Patterns

1
22
333
4444
55555

Number pattern 20

55555
4444
333
22
1

Number pattern 21

11111
2222
333
44
5

Number pattern 22

5
44
333
2222
11111

Number pattern 23

1
12
123
1234

12345

Number pattern 24

12345
1234
123
12
1

Number pattern 25

1
21
321
4321
54321

Number pattern 26

54321
4321
321
21
1

Number pattern 27

Function, recursion programming

1. Write a C program to find cube of any number using function.
2. Write a C program to find diameter, circumference and area of circle using functions.
3. Write a C program to find maximum and minimum between two numbers using functions.
4. Write a C program to check whether a number is even or odd using functions.
5. Write a C program to check whether a number is prime, Armstrong or perfect number using functions.
6. Write a C program to find all prime numbers between given interval using functions.
7. Write a C program to print all strong numbers between given interval using functions.
8. Write a C program to print all Armstrong numbers between given interval using functions.
9. Write a C program to print all perfect numbers between given interval using functions.
10. Write a C program to find power of any number using recursion.

Array and Matrix programming

1. Write a C program to read and print elements of array..
2. Write a C program to print all negative elements in an array.
3. Write a C program to find sum of all array elements.
4. Write a C program to find maximum and minimum element in an array.
5. Write a C program to find second largest element in an array.
6. Write a C program to count total number of even and odd elements in an array.
7. Write a C program to count total number of negative elements in an array.
8. Write a C program to copy all elements from an array to another array.
9. Write a C program to insert an element in an array.
10. Write a C program to delete an element from an array at specified position.
11. Write a C program to count frequency of each element in an array.
12. Write a C program to print all unique elements in the array.
13. Write a C program to count total number of duplicate elements in an array.
14. Write a C program to delete all duplicate elements from an array.
15. Write a C program to merge two array to third array.
16. Write a C program to find reverse of an array.
17. Write a C program to put even and odd elements of array in two separate array.
18. Write a C program to search an element in an array.
19. Write a C program to sort array elements in ascending or descending order.
20. Write a C program to sort even and odd elements of array separately.
21. Write a C program to left rotate an array.
22. Write a C program to right rotate an array.
23. Write a C program to add two matrices.
24. Write a C program to subtract two matrices.
25. Write a C program to perform Scalar matrix multiplication.
26. Write a C program to multiply two matrices.
27. Write a C program to check whether two matrices are equal or not.
28. Write a C program to find sum of main diagonal elements of a matrix.
29. Write a C program to find sum of minor diagonal elements of a matrix.
30. Write a C program to find sum of each row and column of a matrix.
31. Write a C program to interchange diagonals of a matrix.
32. Write a C program to find upper triangular matrix.
33. Write a C program to find lower triangular matrix.
34. Write a C program to find sum of upper triangular matrix.

35. Write a C program to find sum of lower triangular matrix.
36. Write a C program to find transpose of a matrix.
37. Write a C program to find determinant of a matrix.

List of pointer programming exercises

1. Write a C program to create, initialize and use pointers.
2. Write a C program to add two numbers using pointers.
3. Write a C program to swap two numbers using pointers.
4. Write a C program to input and print array elements using pointer.
5. Write a C program to copy one array to another using pointers.
6. Write a C program to swap two arrays using pointers.
7. Write a C program to reverse an array using pointers.
8. Write a C program to search an element in array using pointers.
9. Write a C program to access two dimensional array using pointers.
10. Write a C program to add two matrix using pointers.
11. Write a C program to multiply two matrix using pointers.
12. Write a C program to find length of string using pointers.
13. Write a C program to copy one string to another using pointers.
14. Write a C program to concatenate two strings using pointers.
15. Write a C program to compare two strings using pointers.
16. Write a C program to find reverse of a string using pointers.
17. Write a C program to sort array using pointers.
18. Write a C program to return multiple value from function using pointers.

List of file handling exercises

1. Write a C program to create a file and write contents, save and close the file.
2. Write a C program to read file contents and display on console.
3. Write a C program to read numbers from a file and write even, odd and prime numbers to separate file.
4. Write a C program to append content to a file.
5. Write a C program to compare two files.
6. Write a C program to copy contents from one file to another file.
7. Write a C program to merge two file to third file.
8. Write a C program to count characters, words and lines in a text file.
9. Write a C program to remove a word from text file.
10. Write a C program to remove specific line from a text file.
11. Write a C program to remove empty lines from a text file.

12. Write a C program to find occurrence of a word in a text file.
13. Write a C program to count occurrences of a word in a text file.
14. Write a C program to count occurrences of all words in a text file.
15. Write a C program to find and replace a word in a text file.
16. Write a C program to replace specific line in a text file.
17. Write a C program to print source code of same program.
18. Write a C program to convert uppercase to lowercase character and vice versa in a text file.
19. Write a C program to find properties of a file using stat() function.
20. Write a C program to check if a file or directory exists.
21. Write a C program to rename a file using rename() function.
22. Write a C program to list all files and sub-directories recursively.

List of C programming Recursion Examples, Programs

1. **C program to read a value and print its corresponding percentage from 1% to 100% using recursion.**
C program to read a value and print its corresponding percentage from 1% to 100% using recursion
2. **C program to find factorial using recursion.**
This program will read an integer value and print its factorial using recursion, in this program there will be a function which will calculate factorial by calling itself (recursion).
3. **C program to print fibonacci series using recursion.**
This program will print the Fibonacci series till N numbers (which will be input through the user) using recursion.
4. **C program to calculate power of a number using recursion.**
This program will read base and power and calculate its result using recursion, for example base is 2 and power is 3 then result will be ($2^3=8$).
5. **C program to count digits of a number using recursion.**
This program will read an integer number and count its total digits using recursion, for example: input value is 34562, and then total number of digits is: 5.

6. **C program to find sum of all digits using recursion.**

This program will read an integer number and print sum of all digits using recursion, for example: input value is 34562, and then sum of all digits is: 20.

7. **C program to calculate length of the string using recursion.**

This program will read a string and count its total number of characters (length of the string) using recursion.

<https://codeforwin.org/2018/04/file-handling-programming-exercises-and-solutions-in-c.html>

Format specifier	Description	Supported data types
%c	Character	char unsigned char
%d	Signed Integer	short unsigned short int long
%e or %E	Scientific notation of float values	float double
%f	Floating point	float
%g or %G	Similar as %e or %E	float double
%hi	Signed Integer(Short)	short
%hu	Unsigned Integer(Short)	unsigned short
%i	Signed Integer	short unsigned short int long
%l or %ld or %li	Signed Integer	long
%lf	Floating point	double
%Lf	Floating point	long double
%lu	Unsigned integer	unsigned int unsigned long
%lli, %lld	Signed Integer	long long
%llu	Unsigned Integer	unsigned long long
%o	Octal representation of Integer.	short unsigned short int unsigned int long
%p	Address of pointer to void void *	void *
%s	String	char *
%u	Unsigned Integer	unsigned int unsigned long
%x or %X	Hexadecimal representation of Unsigned Integer	short unsigned short int unsigned int long
%n	Prints nothing	

Format specifier	Description	Supported data types
%%	Prints % character	