Assignment -1

1. WAP for swapping first and last nibbles in given short integert[2 byte] .
Ex . i/p num is 63 .
It's binary : 0000 0000 0011 **1111**
After swap : **1111** 0000 0011 0000

2. WAP to reverse the bits of given character.
Ex. i/p char is 'O' // ascii is 79
It's binary : 0100 1111
After reverse : 1111 0010

3.WAP to find num is divisble by 8 or not
using bitwise operator + ternary operator
Ex1. i/p 40 o/p : yes
Ex.2 i/p 62 o/p : no

4.WAP to rotate the bits of given short int num.
Ex. i/p num is 31 , rotate bit is 3
It's binary : 0000 0000 0001 **1111**
After rotate : **1110** 0000 0000 0011

5. WAP to delete no of bit from particular position in given number .
Ex. i/p num is 511 , bit is 4 , pos is 2
00000000 00000000 00000001 **11111111**
after deleting 4 bit fron 2nd pos .
00000000 00000000 00000000 00011111

6. WAP to reverse 1st 6bit to last 6 bit in int.
Ex. i/p number number is 995
00000000 00000000 00000011 11**100011**
after reversing 6 bit only
11000100 00000000 00000011 11000000

7. WAP to set all bit of 1st nibble , clear all bit of 2nd nibble , toggle all bit of 3rd nibble .
Ex. i/p : 0xF5F0 (unsigned short int)
It's binary : 1111 0101 1111 0000
o/p binary : 1111 1010 0000 1111

8.WAP sum of even digit of given number.
[check digit is even or not using bitwise]
Ex. i/p : 7722494 o/p : 12

Assignment -2

1. WAP to print perfect number b/w 1 to 51.

2. WAP to print fibonacii series b/w 0 to 31

3. WAP to print and count palindrome number b/w 51 to 151 .

4. WAP to implement Calculator using switch .

5. WAP print strong number b/w 1 to 251

6. WAP to print and count prime number b/w 51 to 11 .

7. WAP to print factorial of num b/w 2 to 11.

8.WAP to print armstrong number b/w 1 to 501.

9. WAP to print sum of 1st 4 digit of int num .

10.WAP to print multiplication table from 2 to 9

11. WAP to print 1 st 7 prime number from 21.

12.WAP to print last 5 palindrome num from 99.

13.WAP to count prime digit from given num .
Ex. i/p num is 45678 , o/p is : 2

14. WAP to delete any digit from given num.
Ex. i/p is : 234547 , digit is 4
o/p is : 2357

15. WAP using swich case to check num is prime , perfect , strong , palindrome and armstrong number .

Recursive Function

1.
WAP in C using Recursive function to sum of even digits of given any int number .
i/p: n= 2345 o/p: sum= 6
int rec_fun_sum(int num);

2.
WAP in C using Recursive function to count digit less than 6 of given any int number .
i/p: n= 2658942 o/p: count= 4
int rec_fun_count(int num);

3.
WAP in C using Recursive function to product of digit factor of 3 given any int number .
i/p: n= 345638 o/p: product= 54
int rec_fun_product(int num);

4.
WAP in C using Recursive function to sum of last 3 digits of given any int number .
i/p: n= 23456 o/p: sum= 15
int rec_fun_sum(int num , int c);

5.
WAP in C using Recursive function to reverse the number of given any int number .
i/p: n= 23456 o/p: rev = 65432
int rec_fun_rev(int);

6.
WAP in C using Recursive function to check given num is perfect or not .
i/p: n= 6 o/p: yes perfect
int rec_fun_perfect(int);

7.
WAP in C using Recursive function to count set bit in given num. // pass address of variable
i/p: n= 63 o/p: count: 6
int rec_fun_count(int *);

8.
WAP in C using Recursive function to check given num is prime or not .
i/p: n= 17 o/p: yes prime
int rec_fun_prime (int ,int);

9.
WAP in C using Recursive function to count array element less than 99 more than 39.
i/p: int a[6]={71,53,145,21,49,153};
o/p: count = 3
int rec_fun_count_arr(int *p, int ele);

10.
WAP in C using Recursive function to sum of half of array element.
i/p: int a[6]={10,20,30,44,55,66};
o/p: sum = 60
int rec_fun_sum_arr(int *p, int ele);

11.
WAP in C using Recursive function to reverse array elements and print array in main .
i/p: int a[6]={11,22,33,44,55,66};
o/p: a[6]={66,55,44,33,22,11};
void rec_fun_rev_arr(int *p, int *q);

12.
WAP in C using Recursive fun to reverse string .
i/p: char s[20]="123 abc 789";
o/p: 987 cba 321
void rec_fun_rev_string(char *p, char *q);

13.
WAP in C using Recursive function to count char in given any string .
i/p: char s[20]="123 aacc tata "; , ch= 'a'
o/p: count = 4
int rec_fun_count_string(char *p, char ch);

14.
WAP in C using Recursive fun to reverse bits .
i/p : n= 31
00000000 00000000 00000000 00011111
o/p: // print binary in main function
11111000 00000000 00000000 00000000
int rec_fun_rev_bit (int);
void rec_fun_binary (int);

15. copy a string
void my_strncpy(char *p, char *q, int n);

16. compare two strings
int my_strncmp(char *p, char *q, int n);

17. locate character in string
char* my_strchr (char *p, char ch);

if you found any mistake or doubts send mail to pawan.ky@vectorindia.org

ARRAY

1.
WAP in C to reverse the element of given array

i/p: int a[6]={2,3,4,5,6,7};
o/p: 7 6 5 4 3 2

2.
WAP in C to delete a element at desired position from an array .

i/p: int a[6]={2,3,4,5,6,7}; , pos= 2
o/p: 2 3 5 6 7

3.
WAP in C to insert an element at desired postion in an array .

i/p : int a[6]={2,3,4,5,6}; ,pos=1,n=9
o/p : 2 9 3 4 5 6

4.
WAP in C delete duplicate element of array .

i/p: int a[7]={2,2,2,3,3,3,4};
o/p : 2 3 4

5.
WAP in C to count duplicate elements .

i/p: int a[8]={1,1,2,3,2,2,1,7};
o/p: 1 -->3 times , 2-->3 times

6.
WAP in C to print non-repeted elemnts.

i/p: int a[8]={1,1,2,3,5,2,1,7};
o/p: 3 5 7

7.
WAP in C to print second largest element.

i/p: int a[5]={1,21,51,21,11};
o/p: 21

8.
WAP in C to print perfect num in array.

i/p: int a[5]={2,6,6,28,11};
o/p: 6 6 28 , count= 3

9.
WAP in C to print strong num in array.

i/p :int a[6]={2,2,3,4,145,6}
o/p : 2 2 145 , count = 3

NOTE: take i/p at runtime

STRING

1.
WAP in C to count no of words in given string.

i/p: s[20]="abc pqr xyz 12"
o/p: word count= 4

2.
WAP in C to count vowels in string.

i/p: s[20]="abc pqr aeio"
o/p: vowels count= 5

3.
WAP in C to check string is Palindrome or not.
i/p: s[20]= "radar"
o/p: yes

4.
WAP in C to delete desired char only 2 times from string.
i/p: s[20]="accbccab" , char= c
o/p: abccab

5.
WAP in C to remove conjucutive spaces in sring

i/p: s[20]="abc coding sirji"
o/p: abc coding sirji

6.
WAP in C to delete duplicate char from string.

i/p: s[20]="abc abc ppp 122"
o/p : abc p12

7.
WAP in C to count dublicate char from string.

i/p: s[20]="aaababcdeb"
o/p: a-->4 times b-->3 times

8.
WAP in C to sort string in any order .

i/p : "615DSppzaA"
o/p: 156ADSappz

9.
WAP in C to reverse all words in string.
i/p: "coding sirji vector"
o/p: gnidoc ijris rotcev

10.
WAP in C to merge 2 string to another string.

i/p: s1[10]="1234" s2[10]="ABCD"
o/p : s3[20]="1A2B3C4D"

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Command Line Arguments [CLA]

int main(int argc , char **argv)

1.
WAP in C using CLA to write given function.

int my_atoi(const char *nptr);

2.
WAP in C using CLA to print 1st digit of num.

i/p: ./a.out 1234
o/p : 1

3.
WAP in C using CLA to prime number b/w 11 to 66 .

i/p: ./a.out 11 66

4.
WAP in C using CLA to print strong number b/w 1 to 199 .

i/p: ./a.out 1 199

4.
WAP in C using CLA to take array input and print in reverse order .

i/p: ./a.out 11 22 33 44 55
o/p : 55 44 33 22 11

5.
WAP in C using CLA to write given function.

double my_atof(const char *nptr);

6.
WAP in C using CLA to print average and sum of 3 float number .
i/p: ./a.out 12.56 45.7 345.23
o/p : sum= 403.49 avg=134.496

7.
WAP in C using CLA to implement Calculator
ex1 ./a.out 44 + 200
o/p : 244
ex2 ./a.out 44 / 0
o/p : FPE

8.
WAP in C using CLA to reverse string .

i/p : ./a.out "123 789 CBA"
o/p: ABC 987 321

9.
WAP in C using CLA to insert one char in string at given postion .
i/p : ./a.out ABCDEF 2 P
o/p : ABPCDEF
m

10.
WAP in C using CLA to print given Pattern .

i/p: ./a.out 5

```
9 7 5 3 1
  7 5 3 1
    5 3 1
      3 1
        1
```

./a.out 3

```
5 3 1
  3 1
    1
```

11.
WAP in C using CLA to count digit in string.

i/p: ./a.out gd53gd82js
o/p: count= 4

12.
WAP in C using CLA to write given functio.

i/p: ./a.out coding c_ds
o/p : len1= 6 , len2= 4
both string not equal

int my_strlen(char *);
int my_strcmp(char *, char*);

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FILE

1.
WAP in C to count line , word and digit in file.
i/p: 123 abc coding
file c ds 789 sirji

o/p: no of line = 2 , word= 8 , digit= 6
-------$ ./a.out data

2.
WAP in C to convet small to capital later .
Using fseek function :
--------$ ./a.out data

3.
WAP in C to print all word length .
i/p: 123 abc coding
file sirji FILE
o/p : 3 3 6 4 5 4
-------$ ./a.out data

4.
WAP in C merge char by char in 3rd file .
---------$ ./a.out data1 data2 data3

5.
WAP in C to merge word by word in 3rd file .
---------$ ./a.out data1 data2 data3

6.
WAP in C to merge line by line in 3rd file.
---------$ ./a.out data1 data2 data3

7.
WAP in C to delete any line of given file .
--------$ ./a.out data line_no

8.
WAP in C to delete line 1st and last line only in given any file using CLA.
--------$ ./a.out data

9.
WAP in C to replace one word with another word.
-------$ ./a.out data hello coding

10,
WAP in C to convert all word 1st and last char as a capital in file using CLA.
i/p: 123 abc coding
file ds 789 sirji

o/p: 123 AbC CodinG
FilE DS 789 SirjI
-------$ ./a.out data

PROJECT

Title : Preprocessor

-------$ vi project.c

```
int main(){

// write logic hare for given Task ...
// Task1 + Task2 + Task3
}
```

-------$ cc project.c -o my_Preprocessor
-------$ ./my_Preprocessor abc.c

------$ vi abc.c // input file

```
#include<stdio.h>
#include<string.h>
#define abc 3456
#define pf printf
#define coding 65
int main(){
// delete single line comment
int k=abc;
/* remove multi line comment
*/
pf("%d %d\n",k,coding );
}
```

-----$ vi abc.i // output file
header file content

```
int main(){

int k= 3456;

printf("%d %d \n",k, 65 );
}
```

Task1: **Remove All the Comments**

Task2: **Header File Inclusion**

Task3: **Macro Substitution**

NOTE: use Modular coding with makefile

ID:
Name:

[POINTER]

1.
```
int main(){
int a=10;
int *p=&a;
printf("%d \n",*p);
}
```
2.
```
int main(){
int a=100;
int *p= &a;
printf("%x \n",*p);
}
```
3.
```
int main(){
int a='1';
int *p= &a;
printf("%o \n",*p);
}
```
4.
```
int main(){
int a=0x10;
int *p= &a;
printf("%d \n",*p);
}
```
5.
```
int main(){
int a=1000;
int *p=&a;
printf("%x \n",*p);
}
```
6.
```
int main(){
int a=2000;
int *p= &a;
printf("%d \n",*p+10);
}
```
7.
```
int main(){
int a=100;
int *p= &a;
printf("%c \n",*p-3);
}
```
8.
```
int main(){
int a=100;
int *p= &a;
printf("%d\n",*p+*p);
}
```
9.
```
int main(){
int a=0101;
int *p= &a;
printf("%d\n",*p);
}
```
10.
```
int main(){
int a=100;
int *p= &a;
printf("%d\n",'a'-*p);
}
```
11.
```
int main(){
int a=10;
int *p= &a;
*p=200;
printf("%d\n",a+2);
}
```
12.
```
int main(){
int a=10;
int *p= &a;
*p=20+a;
printf("%d\n",a);
}
```
13.
```
int main(){
int a=10;
int *p= &a;
*p=20+'0';
printf("%d\n",*p%10);
}
```
14.
```
int main(){
int a=10;
int *p= &a;
*p=20+'0';
printf("%d\n",a+*p*10);
}
```
15.
```
int main(){
int a=10;
char *p=(char*)&a;
printf("%d\n",*p);}
```
16.
```
int main(){
int a=100;
char *p=(char*)&a;
printf("%c \n",*p);
}
```
17.
```
int main(){
int a=110;
char *p=(char*)&a;
printf("%x \n",*p);
}
```
18.
```
int main(){
int a=0123;
char *p=(char*)&a;
printf("%d \n",*p);
}
```
19.
```
int main(){
int a=130;
char *p=(char*)&a;
printf("%d\n",*p);
}
```
20.
```
int main(){
int a=148;
char *p=(char*)&a;
printf("%d\n",*p);
}
```
21.
```
int main(){
int a=198;
char *p=(char*)&a;
printf("%d\n",*p);
}
```
22.
```
int main(){
int a=220;
char *p=(char*)&a;
printf("%d\n",*p);
}
```
23.
```
int main(){
int a=290;
char *p=(char*)&a;
printf("%d\n",*++p);}
```
24.
```
int main(){
int a=479;
char *p=(char*)&a;
printf("%d\n",*p);
}
```
25.
```
int main(){
int a=581;
char *p=(char*)&a;
printf("%d\n",*++p);}
```

FUNCTION

1.
WAP in C using function to sum of digit of all elements in array , store results in another array.

i/p: int a[6]={1,22,121,34,78,444};
o/p: int b[6]= {1, 4, 4, 7, 15, 12 };
void sum_fun(int *a,int *b , int ele);

2.
WAP in C using function to reverse all elements of array ,store results in another array.

i/p: int a[6]={12,42,123,34,78,414};
o/p: int b[6]={21,24,321,43,87,414};
void rev_fun(int *a,int *b , int ele);

3.
WAP in C using function to delete 1st digits of all elements in array .

i/p: int a[6]={12,142,1234,314,78,414};
o/p: int a[6]={2,42,234,34,8,14};
void del_fun(int *a, int ele);

4.
WAP in C using function to count strong and armstrong number elements in array .

i/p: int a[6]={2,153,145,2,3,153};
o/p: strong number count = 3
armstrong number count = 5
int strong_fun(int *a, int ele);
int armstrong_fun(int *a, int ele);

5.
WAP in C using function to count -ve element (bitwise op) and delete -ve elements in array .

i/p: int a[6]={-2, 2,-5,-12,5,-7};
o/p: -ve number count = 4
int count_del_fun(int *a, int *ele);

6.
WAP in C using function to right rotate array 2 times .

i/p: int a[6]={-2, 2,-5,-12,5,-7};
o/p: int a[6]={5,-7,-2, 2,-5,-12};
void rotate_fun(int *a, int ele ,int n);

7.
WAP in C using function to insert num in array at given particular location (index).

i/p: int a[6]={-1,2,3,-5,-7}; , n= 99 , p=2
o/p: int a[6]= {-1, 2 ,99 ,3,-5, -7};
void in_fun(int *a, int ele,int n, int p);

8.
WAP in C using function to merge 2 array data in 3rd array .

i/p: int a[6]={2,3,4}, b[3]={11,22,33};
o/p: int c[6]= {2,11,3,22,4,33};

void in_fun(int *a, int *b, int *c,
int ele1,int ele2, int ele3);

9.
WAP in C using function to **delete the duplicate** char from given string .

i/p: char s[20]="abcaaabbccaa";
o/p: abc
void del_fun(char * s);

10.
WAP in C using function to **delete all** digits in strings and count deleted digits .

i/p: char s[20]="a1b2c3d4123";
o/p: abcd , digit count = 7
int del_count_fun(char * s);

11.
WAP in C using function to revesre all word in string ,count no of word having digits .
i/p: char s[20]="coding sirji vec123 A123 ";
o/p: gnidoc ijris **321cev 321A**
word count = 2

void rev_word_fun(char * s);
int count_word_fun(char * s);

Note: Take all input at runtime (use scanf).
Use same function prototype only .

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