Lab Assignment 4

(Topic: Functions, Call by Value, Call by Reference and Pointers)

1) What will be the output of the following program? Note down your understanding of every program, in few sentences.

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a)

```c
#include<stdio.h>
int main()
{
       int i=3, *j, k;
       j = &i;
       printf("%d\n", i**j*i+*j);
       return 0;

}
```

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b)

```c
#include<stdio.h>
int main()
{
int x=30, *y, *z;
        y=&x;
//Address of x depends from pc-pc.
//However, integer is 4 byte size
        z=y;
        *y++=*z++;
        x++;
        printf("x=%d, y=%d, z=%d\n",
x, y, z);
return 0;
}
```

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c)

```c
#include<stdio.h>
int main()
{
       int ***r, **q, *p, i=8;
       p = &i;
       q = &p;
       r = &q;
       printf("%d, %d, %d\n", *p,
**q, ***r);
return 0;
 }
```

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d)

```c
#include<stdio.h>
void fun(void *p);
int i;
int main()
{
       void *vptr;
       vptr = &i;
       fun(vptr);
return 0;
}

void fun(void *p)
{
       int **q;
       q = (int**)&p;
       printf("%d\n", **q);
}
```

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e)

```
#include <stdio.h>
int main()
{
        int *ptr;
        int x;
        ptr = &x;
        *ptr = 0;

        printf(" x = %d\n", x);
        printf(" *ptr = %d\n", *ptr);

        *ptr += 5;
        printf(" x = %d\n", x);
        printf(" *ptr = %d\n", *ptr);

        (*ptr)++;
        printf(" x = %d\n", x);
        printf(" *ptr = %d\n", *ptr);
    return 0;
}
```

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f)

```
#include<stdio.h>
int main()
{
        char *str;
        str = "%s";
        printf(str, "K\n");
    return 0;
}
```

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2) Write a C Program to swap 4-different elements using Call by Reference.

3) WAP a program to find if the Year entered by the user through keyboard is a leap year or not. Apply Call by Reference concept.

4) WAP with inbuilt C-function that reverses the input text one line at a time.
   e.g. input : ***The boy sat in the car. The car went away.***
   Output: ***rac eht ni yob eht. Yawa tnew rac ehT.***