

// Vsat Spatial Low Pass Filtering

```
#include<stdio.h>
#include<string.h>
#include<math.h>
#include<conio.h>
```

```
int main (void)
```

```
{
    FILE *fs, *fp1;
    unsigned char buff, temp[258][258]={0}, temp2, p, t;
    int x,y,i,j, mask[3][3]={1, 1, 1, 1, 1, 1, 1, 1, 1},q;

    float temp1, sum;

    fs=fopen("giraffe.bmp","rb");
    if (fs==NULL)
    {
        printf("\n Error in reading a file \n");
        getch();
        return 1;
    }

    fp1=fopen("blur_giraffe.bmp","wb+");
    if (fp1==NULL)
    {
        printf("\n Error in reading a file \n");
        getch();
        return 1;
    }

    // Header
    for(i=0; i<1078; i++)
    {
        fread(&buff,sizeof(unsigned char),1,fs);
        fwrite(&buff,sizeof(unsigned char),1,fp1);
    }

    // Image Matrix with zero padding
    for (x=1;x<257;x++)
    {
        for (y=1;y<257;y++)
        {
```

```

        fread(&buff,sizeof(unsigned char),1,fs);
        temp[x][y]=buff;
    }

}

for (x=1;x<257;x++)
{
    for (y=1;y<257;y++)
    {
        for (i=-1;i<2;i++)
        {
            for (j=-1;j<2;j++)
            {
                p=temp[x+i][y+j];
                t=mask[i+1][j+1];
                sum=sum+p*t;
            }
        }
        temp1=sum/9;
        temp2=temp1;
        fwrite(&temp2, sizeof(unsigned char), 1, fp1);
        sum=0;
    }

}

fclose(fs);

printf("\nSpatial Image Filtering Successfully done.\n");
//getch();
return 0;
} //End of File

```