

Compiler Design Lab

Assignment-8

Implementation of code optimization techniques

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Code:

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

void main()
{
    FILE *fp;
    fp=fopen("input.txt","r");
    while(!feof(fp))
    {
        char st[100];
        fscanf(fp,"%[^\\n]",st);
        if(!feof(fp))
        {
            if(st[3]=='+')
            {
                if(st[2]=='0' || st[4]=='0')
                {
                    printf("Line Eliminated\\n");
                }
                else
                {
                    printf("%s\\n",st);
                }
            }
            else if(st[3]=='*')
            {
                if(st[2]=='1' || st[4]=='1')
                {
                    printf("Line Eliminated\\n");
                }
                else
                {
                    printf("%s\\n",st);
                }
            }
            else if(st[3]=='-')
            {
                if(st[4]=='0')
                {
                    printf("Line Eliminated\\n");
                }
                else if(st[2]=='0')
                {
                    sprintf(st,"%c%c%c%c",st[0],st[1],st[3],st[4]);
                    printf("%s\\n",st);
                }
                else
                {
                    printf("%s\\n",st);
                }
            }
        }
    }
}
```

```

    }
    else if(st[3]=='/')
    {
        if(st[4]=='1')
        {
            printf("Line Eliminated\n");
        }
        else if(st[2]=='0')
        {
            sprintf(st,"%c%c0",st[0],st[1]);
            printf("%s\n",st);
        }
        else
            printf("%s\n",st);
    }
    else if(st[2]=='p' && st[3]=='o' && st[4]=='w')
    {
        sprintf(st,"%c%c%c*%c",st[0],st[1],st[6],st[6]);
        printf("%s\n",st);
    }
    }
}
fclose(fp);
}

```

input.txt:

```

a=a+0
i=i+1
i=i*4
a=a*1
a=a-0
a=0-a
a=a/1
a=0/a
a=pow(3,2)

```

Output:

```

viki@viki:~/Desktop/CD Lab/Ex8$ gcc code_optimisation.c -o a
viki@viki:~/Desktop/CD Lab/Ex8$ ./a
Line Eliminated
i=i+1
i=i*4
Line Eliminated
Line Eliminated
a=-a
Line Eliminated
a=0
a=3*3
viki@viki:~/Desktop/CD Lab/Ex8$ S

```