Propagation Cost

Code:

```
load myfile.mat;
N=columns(D);
M=rows(D);

if(N!=M)
    printf("Error in the Input Matrix\n");
endif

I=eye(N);
sum=I;
mul=D;

while(nnz(mul)!=0)
    sum=sum+mul;
    mul=mul*D;
endwhile

printf("RESULT\n**********\n");
V=sum

cost=0;
for i=1:N
    temp=nnz(sum(i,:));
    cost=cost+temp;
    printf("FanOut of %c is %d\n",64+i, temp);
endfor

printf("**********\n");
for i=1:N
    printf("FanIn of %c is %d\n",64+i, nnz(sum(:,i)));
endfor

cost=round(cost/(6*6)*100);
printf("Propagation Cost is %d%%\n",cost);
```

Input File: DSM

myfile.mat

```
# Created by Octave 4.2.2, Tue Sep 17 13:09:44 2019 MDT
# name: D
# type: matrix
# rows: 6
# columns: 6
 0 1 1 0 0 0
 0 0 0 1 0 0
 0 0 0 0 1 0
 0 0 0 0 0 0
 0 0 0 0 0 1
 0 0 0 0 0 0
```

Output:

```
RESULT
**********
V =

   1   1   1   1   1   1
   0   1   0   1   0   0
   0   0   1   0   1   1
   0   0   0   1   0   0
   0   0   0   0   1   1
   0   0   0   0   0   1

FanOut of A is 6
FanOut of B is 2
FanOut of C is 3
FanOut of D is 1
FanOut of E is 2
FanOut of F is 1
**********
FanIn of A is 1
FanIn of B is 2
FanIn of C is 2
FanIn of D is 3
FanIn of E is 3
FanIn of F is 4
Propagation Cost is 42%
```