Editor - E:\Downloads\m\q3\q3.m

q3.m

```
clc
clear

%set files
inp_f = fopen('input.txt','r');
out_f = fopen('output.txt','w');

%get size of table
tsize = fscanf(inp_f,'%g');

%matrix to store the table
M = repmat(' ',[tsize(1) tsize(2)]);
for i = 1:tsize(1)
    a=fgetl(inp_f);
    for j = 1:tsize(2)
      M(i,j)=lower(a(j));
    end
end

%get number of word to look for
n=str2num(fgetl(inp_f));

for i = 1:n
    a=lower(fgetl(inp_f));
    first=a(1);
    [r, c]=find(M==first); %coordinates of first letter
    ro=[]; co=[]; %list of words output coordinates
    for j = 1:size(c,1)
       list="";
       %N
       word='';
       m=r(j);
       while m
           word=[word, M(m,c(j))];
```

```
        m=m-1;
    end
    list=[list,word];
    %S
    word='';
    m=r(j);
    while m<=size(M,1)
        word=[word,M(m,c(j))];
        m=m+1;
    end
    list=[list,word];
    %W
    word='';
    m=c(j);
    while m
        word=[word,M(r(j),m)];
        m=m-1;
    end
    list=[list,word];
    %E
    word='';
    m=c(j);
    while m<=size(M,2)
        word=[word,M(r(j),m)];
        m=m+1;
    end
    list=[list,word];
    %NW
    word='';
    m=r(j);
    k=c(j);
    while m & k
        word=[word,M(m,k)];
        m=m-1;
```

```
69 -            k=k-1;
70 -        end
71 -        list=[list,word];
72          %NE
73 -        word='';
74 -        m=r(j);
75 -        k=c(j);
76 -        while m & k<=size(M,2)
77 -            word=[word,M(m,k)];
78 -            m=m-1;
79 -            k=k+1;
80 -        end
81 -        list=[list,word];
82          %SW
83 -        word='';
84 -        m=r(j);
85 -        k=c(j);
86 -        while m<=size(M,1) & k
87 -            word=[word,M(m,k)];
88 -            k=k-1;
89 -            m=m+1;
90 -        end
91 -        list=[list,word];
92          %SE
93 -        word='';
94 -        m=r(j);
95 -        k=c(j);
96 -        while m<=size(M,1) & k<=size(M,2)
97 -            word=[word,M(m,k)];
98 -            k=k+1;
99 -            m=m+1;
100 -       end
101 -       list=[list,word];
102         %appending to output lists
```

```
103 -           for k = 1:size(list,2)
104 -               if startsWith(list(k),a)
105 -                   ro=[ro,r(j)]; co=[co,c(j)];
106 -               end
107 -           end
108 -       end
109 -       if isempty(ro)
110 -           ro=0;
111 -       end
112 -       if isempty(co)
113 -           co=0;
114 -       end
115 -       out=[a,string(ro),string(co)];
116 -       fprintf(out_f, out(1) + '\t' + out(2)+ '\t' + out(3) + '\n');
117 -   end
118
119 -   fclose(inp_f);
120 -   fclose(out_f);
121
```

Workspace

Name	Value
a	'dagbert'
ans	0
c	[4;8;8;8;8]
co	8
first	'd'
i	4
inp_f	3
j	5
k	9
list	*1x9 string*
m	9
M	*8x11 char*
n	4
out	*1x3 string*
out_f	4
r	[1;2;3;5;7]
ro	7
tsize	[8;11]
word	'db'