#include <cstdio>

#include <cstring>

const int MAXN = 1001;

struct point

{

int x, y, mem\_step;

bool bool\_fire;// 区分是否是‘火’

} que[MAXN\*MAXN];

int r, c, fx, fy;

int step\_x[4]= {1,-1,0,0};

int step\_y[4]= {0,0,1,-1};

char image[MAXN][MAXN];

bool vis[MAXN][MAXN];

int bfs()

{

int font=0, rear=0;

memset(vis, false, sizeof(vis));

for(int i=0; i<r; i++)

for(int j=0; j<c; j++)// '火'进队列（注意：初始时不止一个位置‘起火’）

if(image[i][j]=='F')

{

que[rear].x = j;

que[rear].y = i;

que[rear].mem\_step = 0;

que[rear].bool\_fire = true;

++rear;

}

que[rear].x=fx;// '人'进队列

que[rear].y=fy;

que[rear].mem\_step = 0;

que[rear++].bool\_fire = false;

while(font<rear)

{

int xx = que[font].x;

int yy = que[font].y;

if(que[font].bool\_fire)// 对‘火’进行扩展

{

for(int i=0; i<4; i++)

{

xx = que[font].x + step\_x[i];

yy = que[font].y + step\_y[i];

if(xx<0||xx>=c||yy<0||yy>=r||image[yy][xx]=='#'||image[yy][xx]=='F')

continue;

image[yy][xx] = 'F';

que[rear].x = xx;

que[rear].y = yy;

que[rear].bool\_fire = true;

que[rear].mem\_step = que[font].mem\_step+1;

++rear;

}

}

else

{

for(int i=0; i<4; i++)// 对‘人’进行扩展

{

int xx = que[font].x + step\_x[i];

int yy = que[font].y + step\_y[i];

if(vis[yy][xx]||image[yy][xx]=='#'||image[yy][xx]=='F')

continue;

if(xx<0||xx>=c||yy<0||yy>=r)

return que[font].mem\_step+1;

vis[yy][xx] = true;

que[rear].x = xx;

que[rear].y = yy;

que[rear].bool\_fire = false;

que[rear].mem\_step = que[font].mem\_step+1;

++rear;

}

}

++font;

}

return 0;

}

int main()

{

// freopen("sample.txt", "r", stdin);

int t, flag;

scanf("%d", &t);

while(t--)

{

scanf("%d%d", &r, &c);

fx = fy = -1;

for(int i=0; i<r; i++)

{

scanf("%s", image[i]);

if(fx == -1)

for(int j=0; j<c; j++)

if(image[i][j] == 'J')

{

fx = j;

fy = i;

break;

}

}

flag = bfs();

if(flag)

printf("%d\n", flag);

else

printf("IMPOSSIBLE\n");

}

return 0;

}

可能不止一个位置起火