Programa principal

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Mètode d'Euler millorat o Heun

```
clear variables; clc;
```

EDO

```
f=@(t,y)-y+t+1;  % y'=f(t,y)
a=0; alpha=1;    % y(a)=alpha
b=1;             % y(b)=...
g=@(t)exp(-t)+t;
texa=[a:0.01:b];
yexa=g(texa);
```

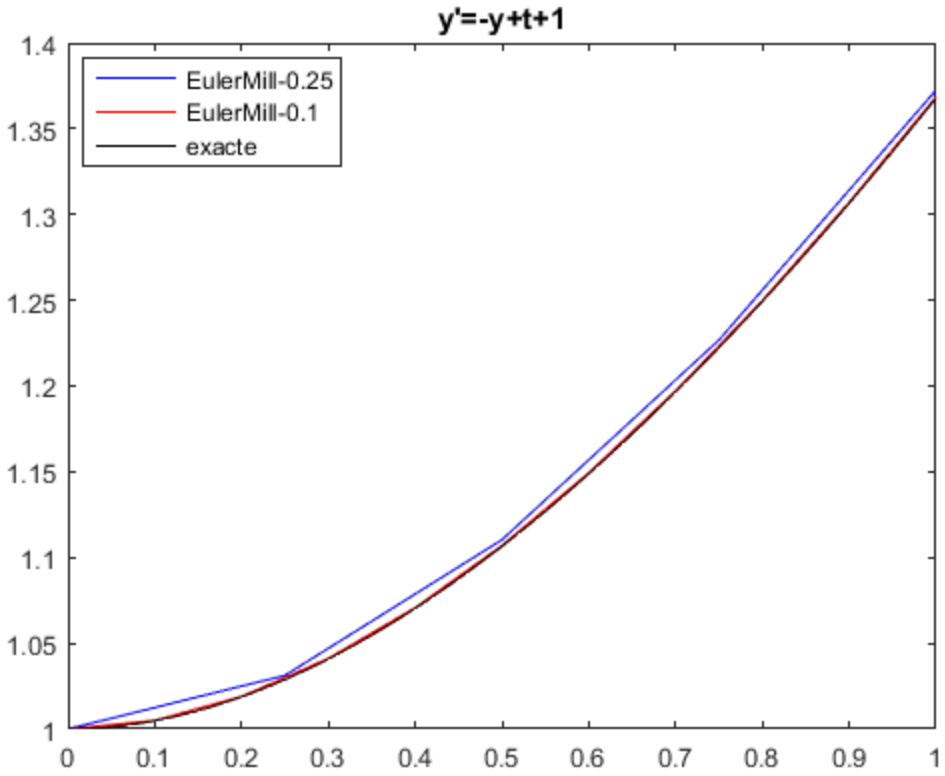
Euler Millorat

```
h=0.25; t1=[a:h:b];
[ ye1 ] = EulerMill( f,a,b,h,alpha );
format short g;
disp('    EulerMill         y(t)')
disp([ye1' ,g(t1)'])
h=0.1; t2=[a:h:b];
[ ye2 ] = EulerMill( f,a,b,h,alpha );
```

```
    EulerMill         y(t)
            1            1
       1.0313       1.0288
       1.1104       1.1065
       1.2268       1.2224
       1.3725       1.3679
```

Gràfiques

```
plot(t1,ye1,'b',t2,ye2,'r',texa,yexa,'k'),title('y''=-y+t+1')
legend('EulerMill-0.25','EulerMill-0.1','exacte','Location','best')
```



Error

```
ye1error=norm(ye1-g(t1))
ye2error=norm(ye2-g(t2))
```

```
ye1error =
    0.0078869
ye2error =
    0.0016826
```

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