```
%NAME: Sarthak Abhay Patil
%DIV:B
%BATCH:B-4
% SimultaneousRK2Method

function sim_rk1_methjod()
x1=input('Enter the vlaue of x1:');
y1=input('Enter the value of y1:');
z1=input('Enter the evalue of z1:');
h=input('Enter stepsize h:');
xn=input('Enter xn value:');
while x1<xn
    ky1=h*f(x1,y1,z1);
    kz1=h*g(x1,y1,z1);
    ky2=h*f(x1+h,y1+ky1,z1+kz1);
    kz2=h*g(x1+h,y1+ky1,z1+kz1);
    ky=(ky1+ky2)/2;
    kz=(kz1+kz2)/2;
    y1=y1+ky;
    z1=z1+kz;
    x1=x1+h;
    fprintf('\n%f   %f   %f',x1,y1,z1);
end
fprintf('\nat xn=%f, yn=%f',x1,y1,z1);
end
function s=f(x,y,z)
s=y*z;
end
function w=g(x,y,z)
w=x*y
end

% OUTPUT
% Enter the vlaue of x1:0
% Enter the value of y1:1
% Enter the evalue of z1:1
% Enter stepsize h:0.1
% Enter xn value:0.2
%
% w =
%
%      0
%
%
% w =
%
%     0.1100
%
%
% 0.100000   1.105000   1.005500
% w =
%
%     0.1105
```

```
%
%
% w =
%
%     0.2432
%
%
% 0.200000   1.222366   1.023186
% at xn=0.200000, yn=1.222366
% at xn=1.023186, yn=>>
```