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%SPEARMAN RANK CORRELATION COEFFICIENT
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x = [24,29,19,14,30,19,27,30,20,28,11];
y = [37,35,16,26,23,27,19,20,16,11,21];
rx = tiedrank(x);
ry = tiedrank(y);
unique_elementsx=unique(x);
unique_elementsy=unique(y);
countsx=histc(x,unique_elementsx);
countsy=histc(y,unique_elementsy);
for i = 1:length(unique_elementsx)
fprintf('%d appears %d times.\n', unique_elementsx(i), countsx(i));
end
for i = 1:length(unique_elementsy)
fprintf('%d appears %d times.\n', unique_elementsy(i), countsy(i));
end
c=0;
e=0;
for i = 1:length(countsx)
a=countsx(i);
c=c+((1/12)*a*((a.^2)-1));
end
for i = 1:length(countsy)
b=countsy(i);
e=e+((1/12)*b*((b.^2)-1));
end
af=e+c;
n=length(x);
d = sum((rx - ry).^2);
disp(d);
nr=(6*(d+af));
disp(nr);
dr=n*((n^2)-1);
disp(dr);
r =(nr/dr);
rho=1-r;
fprintf('Spearman's rank correlation coefficient: %.4f\n', rho);
```