Advent of Code

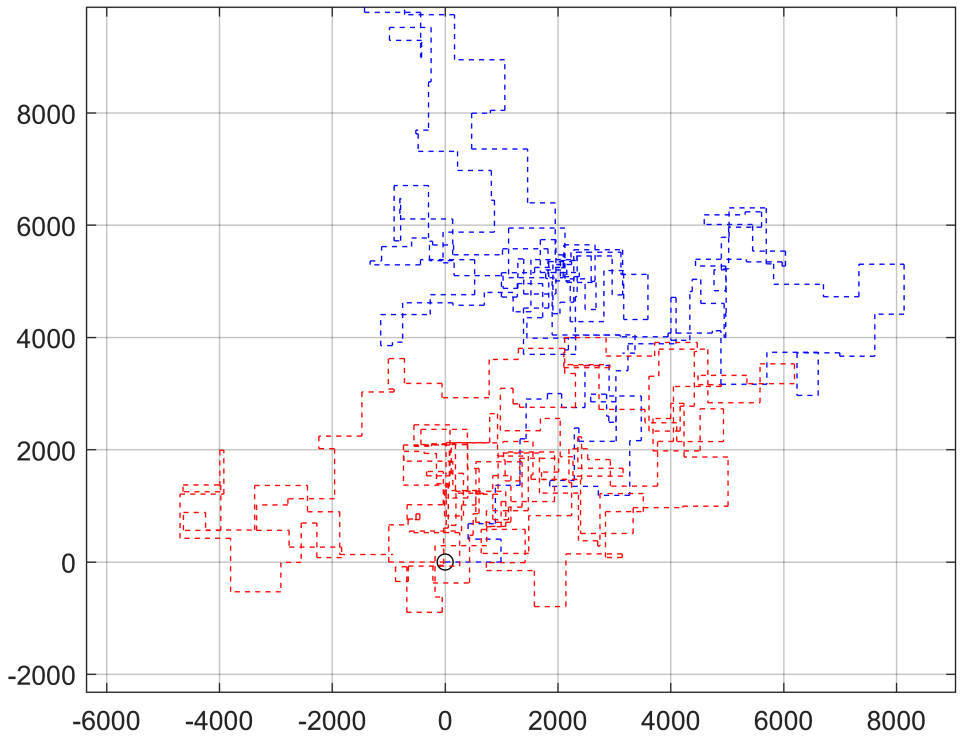
--- Day 3: Crossed Wires ---

Part 1

```
clear; close; clc
w1='R990,U408,L583,U275,R483,U684,R437,U828,R108,U709,R378,U97,R252,D248,R413,U750,R428,D545,R5
w2='L998,U662,R342,U104,R140,U92,R67,D102,L225,U265,R641,U592,L295,D77,R415,U908,L640,D381,R312
del1=isletter(w1); del2=isletter(w2);
w1d=w1; w2d=w2; w1n=w1; w2n=w2;
w1d(not(del1))=[]; w2d(not(del2))=[];
w1n(regexp(w1n,'[RULD]'))=[]; w2n(regexp(w2n,'[RULD]'))=[];
w1n=str2num(w1n); w2n=str2num(w2n);
x=[0 0]; y=[0 0];
plot(x,y,'ko'); hold on; grid on
axis([-4000 10000 -100 11000])
C1={}; con=1; %C1{1,1}=x; C1{2,1}=y;
for i=1:1:length(w1d)
    %pause(.1)
    if w1d(i)=='R'
        x=[x(2) x(2)+w1n(i)];
        y=[y(2) y(2)];
        plot(x,y,'b--')
    elseif w1d(i)=='L'
        x=[x(2) x(2)-w1n(i)];
        y=[y(2) y(2)];
        plot(x,y,'b--')

    elseif w1d(i)=='U'
        x=[x(2) x(2)];
        y=[y(2) y(2)+w1n(i)];
        plot(x,y,'b--')
    elseif w1d(i)=='D'
        x=[x(2) x(2)];
        y=[y(2) y(2)-w1n(i)];
        plot(x,y,'b--')
    end
    C1{1,con}=x; C1{2,con}=y;
    con=con+1;
end
x=[0 0]; y=[0 0];
C2={}; con2=1; %C2{1,1}=x; C2{2,1}=y;
for j=1:1:length(w2d)
    if w2d(j)=='R'
        x=[x(2) x(2)+w2n(j)];
        y=[y(2) y(2)];
        plot(x,y,'r--')
    elseif w2d(j)=='L'
        x=[x(2) x(2)-w2n(j)];
        y=[y(2) y(2)];
        plot(x,y,'r--')
    elseif w2d(j)=='U'
```

```
        x=[x(2) x(2)];
        y=[y(2) y(2)+w2n(j)];
        plot(x,y,'r--')
    elseif w2d(j)=='D'
        x=[x(2) x(2)];
        y=[y(2) y(2)-w2n(j)];
        plot(x,y,'r--')
xlim([-6352 9048])
ylim([-2323 9887])
    end
    C2{1,con2}=x; C2{2,con2}=y;
    con2=con2+1;
end
```

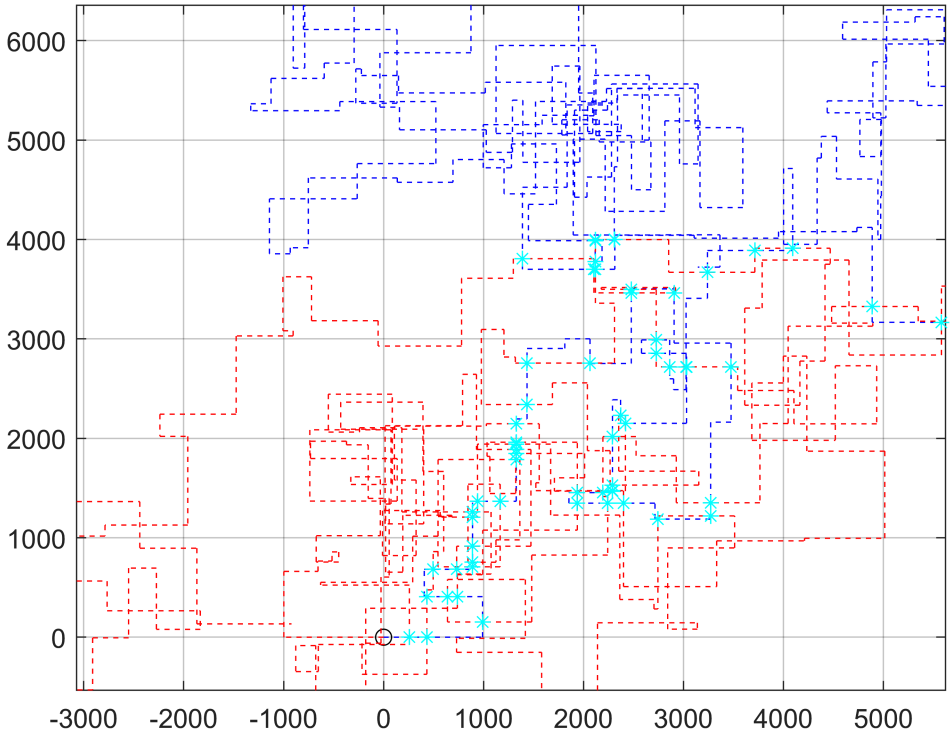


Part 2

```
cint={}; con3=1; cint1=[];
for i1=1:1:length(C1)
    x=sort(C1{1,i1}); y=sort(C1{2,i1});
    for i2=1:1:length(C2)
        x1=sort(C2{1,i2}); y1=sort(C2{2,i2});
        if length(unique(x))==1
            if length(unique(y1))==1
                temp1=x1(1):1:x1(2);
                temp2=y(1):1:y(2);
                if ismember(x(1),temp1) && ismember(y1(1),temp2)
                    cint{1,con3}=[x(1) y1(1)];
```

```
                    cint{2,con3}=[i1 i2];
                    cint1(1,con3)=sum(abs([x(1) y1(1)]));
                    con3=con3+1;
                    plot(x(1),y1(1),'c*')
                end
            end
        elseif length(unique(y))==1
            if length(unique(x1))==1
                temp1=x(1):1:x(2);
                temp2=y1(1):1:y1(2);
                if ismember(x1(1),temp1) && ismember(y(1),temp2)
                    cint{1,con3}=[x1(1) y(1)];
                    cint{2,con3}=[i1 i2];
                    cint1(1,con3)=sum(abs([x1(1) y(1)]));
                    con3=con3+1;
                    plot(x1(1),y(1),'c*')

xlim([-3070 5623])
ylim([-535 6357])
                end
            end
        end
    end
end
```

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disp(min(cint1))
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    258
```

```
sumsteps=[];
for fi=1:1:length(cint1)
    fs=cint{2,fi};
    fs1=cint{1,fi};
    p1=C1{1,fs(1)};
    if length(unique(p1))==1
        p1=C1{2,fs(1)};
    end
    p2=C2{2,fs(2)};
    if length(unique(p2))==1
        p2=C2{1,fs(2)};
    end
    q=sum(w1n(1:1:(fs(1)-1)))+sum(w2n(1:1:(fs(2)-1)));
    p=abs(p1(1)-fs1(1))+abs(p2(1)-fs1(2));
    sumsteps(1,fi)=p+q;
end
disp(min(sumsteps))
```

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12304
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