**Understanding data generation code in visual basic:**

1. Define all the variables: x1,y1.d1,x2,y2,d2,c1,c2,t

2. For 100 rows-

i) Randomly generate x1,y1,d1,x2,y2,d2

ii) Rnd() \* 9 – generates real random number between 0 and 9

iii) Application.WorksheetFunction.RoundUp(Rnd() \* 9, 0)- rounds up number to zeo decimal point making it whole number- for coordinates: 0-9,direction:0-7

3. Do while when obj1pos ! = obj2pos and count loop<20

i) Increase count by 1

ii) Behavior of Obj1 inside box:

1. if obj1: 1< x and y coordinates<10:

Then according to direction -adjust x and y coordinates

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(2) Else if obj1pos(1,1): direction =3; x=x+1, y=y+1

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(3 )Else if obj1 pos: (10,1): direction = 5, x=x-1 & y=y+1

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(4) Else obj1 pos: (1,10): direction = 1, x=x+1 & y=y-1

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(5) Else obj1 pos: (10,10): direction = 7, x=x-1 & y=y-1

X



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(6)Else if obj1 pos: x=1

(a)If direction == 0 ---> y= y-1

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(b)If direction == 1 --->x=x+1 | y= y-1



Y

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(c)If direction == 2 --->x=x+1



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(d)If direction == 3 --->x=x+1 | y = y+1



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(e)If direction == 4 --->y=y+1



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(f)If direction == 5 --->x=x+1 , y=y+1



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(g)If direction == 6 --->x=x+1



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(h)If direction == 7 --->x=x+1 | y=y-1; direction =1



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(7) Else if obj1 pos: x=10

(a)If direction == 0 ---> y= y-1

X



Y

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(b)If direction == 1 --->x=x-1 | y= y-1 | direction =7



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(c)If direction == 2 --->x=x-1 | direction = 6



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(d)If direction == 3 --->x=x-1 | y = y+1 | direction =5



Y

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(e)If direction == 4 --->y=y+1



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(f)If direction == 5 --->x=x-1 , y=y+1



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(g)If direction == 6 --->x=x-1



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(h)If direction == 7 --->x=x-1 | y=y-1; direction =1



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(8) Else if obj1 pos: y=1

(a)If direction == 0 ---> y= y-1 | direction =4

X



Y

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(b)If direction == 1 --->x=x-1 | y= y-1 | direction =7



Y

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(c)If direction == 2 --->x=x-1 | direction = 6



Y

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(d)If direction == 3 --->x=x-1 | y = y+1 | direction =5



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(e)If direction == 4 --->y=y+1



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(f)If direction == 5 --->x=x-1 , y=y+1



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(g)If direction == 6 --->x=x-1



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(h)If direction == 7 --->x=x-1 | y=y-1; direction =1



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(9) Else if obj1 pos: y=10

(a)If direction == 0 ---> y= y-1

X



Y

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(b)If direction == 1 --->x=x+1 | y= y-1



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(c)If direction == 2 --->x=x+1



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(d)If direction == 3 --->x=x+1 | y = y-1 | direction =1



Y

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(e)If direction == 4 --->y=y+1



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(f)If direction == 5 --->x=x-1 , y=y-1 | Direction =7



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(g)If direction == 6 --->x=x-1



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(h)If direction == 7 --->x=x-1 | y=y-1;



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(2)if obj2: 1< x and y coordinates<10:

Then according to direction -adjust x and y coordinates…………

Everything is same for obj2 as for obj1

The do while loop ends and colliding x and y cordinates and counter is stored in excel columns.