data = load('C:\\Users\\KIRTHI\\Desktop\\b.txt');

no\_of\_instances = size(data,1);

no\_of\_attributes = size(data,2);

count\_yes = sum(sum(data == 100));

count\_no = sum(sum(data == 200));

probability\_of\_yes = (count\_yes + 1) / (no\_of\_instances + 2);

probability\_of\_no = (count\_no + 1) / (no\_of\_instances + 2);

#First Attribute(Class)

prob\_of\_no\_recurrence\_events = ((sum(sum(data == 222))) + 1) / (no\_of\_instances + 2) ;

prob\_of\_recurrence\_events = ((sum(sum(data == 333))) + 1) / (no\_of\_instances + 2);

#Second Attribute(Age)

prob\_of\_age\_group\_between\_10\_and\_19 = ((sum(sum(data == 19))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_20\_and\_29 = ((sum(sum(data == 29))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_30\_and\_39 = ((sum(sum(data == 39))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_40\_and\_49 = ((sum(sum(data == 49))) + 1) / (no\_of\_instances + 2) ;

prob\_of\_age\_group\_between\_50\_and\_59 = ((sum(sum(data == 59))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_60\_and\_69 = ((sum(sum(data == 69))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_70\_and\_79 = ((sum(sum(data == 79))) + 1) / (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_80\_and\_89 = ((sum(sum(data == 89))) + 1)/ (no\_of\_instances + 2);

prob\_of\_age\_group\_between\_90\_and\_99 = ((sum(sum(data == 99))) + 1) / (no\_of\_instances + 2);

#Third Attribute(Menopause)

prob\_of\_premeno = ((sum(sum(data == 10))) + 1) / (no\_of\_instances + 2);

prob\_of\_ge40 = ((sum(sum(data == 20))) + 1) / (no\_of\_instances + 2);

prob\_of\_lt40 = ((sum(sum(data == 30))) + 1) / (no\_of\_instances + 2);

#Fourth Attribute(Tumor-size)

prob\_of\_zero\_to\_fourth = ((sum(sum(data == 4))) + 1) / (no\_of\_instances + 2);

prob\_of\_fifth\_to\_nine = ((sum(sum(data == 9))) + 1) / (no\_of\_instances + 2);

prob\_of\_ten\_to\_fourteen = ((sum(sum(data == 14))) + 1) / (no\_of\_instances + 2);

prob\_of\_fifteen\_to\_ninteen = ((sum(sum(data == 17))) + 1) /(no\_of\_instances + 2);

prob\_of\_twenty\_to\_twentyfour = ((sum(sum(data == 24))) + 1) / (no\_of\_instances + 2);

prob\_of\_twentyfive\_to\_twentynine = ((sum(sum(data == 27))) + 1) / (no\_of\_instances + 2);

prob\_of\_thirty\_to\_thirtyfour = ((sum(sum(data == 34))) + 1)/ (no\_of\_instances + 2);

prob\_of\_thirtyfive\_to\_thirtynine = ((sum(sum(data == 37))) + 1) / (no\_of\_instances + 2);

prob\_of\_forty\_to\_fortyfour = ((sum(sum(data == 44))) + 1) / (no\_of\_instances + 2);

prob\_of\_fortyfive\_to\_fortynine = ((sum(sum(data ==47))) + 1) / (no\_of\_instances + 2);

prob\_of\_fifty\_to\_fiftyfour = ((sum(sum(data == 54))) + 1) / (no\_of\_instances + 2);

prob\_of\_fiftyfive\_to\_fiftynine = ((sum(sum(data == 57))) + 1) / (no\_of\_instances + 2);

#Fifth Attribute(inv-nodes)

prob\_of\_zero\_to\_two = ((sum(sum(data == 101)))+1) / (no\_of\_instances+2);

prob\_of\_three\_to\_five = ((sum(sum(data == 102)))+1) / (no\_of\_instances+2);

prob\_of\_six\_to\_eight = ((sum(sum(data == 103)))+1) / (no\_of\_instances+2);

prob\_of\_nine\_to\_eleven = ((sum(sum(data == 104)))+1) / (no\_of\_instances+2);

prob\_of\_twelve\_to\_fourteen = ((sum(sum(data == 105)))+1) / (no\_of\_instances+2);

prob\_of\_fifteen\_to\_seventeen = ((sum(sum(data == 106)))+1) / (no\_of\_instances+2);

prob\_of\_eighteen\_to\_twenty = ((sum(sum(data == 107)))+1) / (no\_of\_instances+2);

prob\_of\_twentyone\_to\_twentythree = ((sum(sum(data == 108)))+1) / (no\_of\_instances+2);

prob\_of\_twentyfour\_to\_twentysix = ((sum(sum(data == 109)))+1) / (no\_of\_instances+2);

prob\_of\_twentyseven\_to\_twentynine = ((sum(sum(data == 110)))+1) / (no\_of\_instances+2);

prob\_of\_thirty\_to\_thirtytwo = ((sum(sum(data == 111)))+1) / (no\_of\_instances+2);

prob\_of\_thirtythree\_to\_thirtyfive = ((sum(sum(data == 112)))+1) / (no\_of\_instances+2);

prob\_of\_thirtysix\_to\_thirtynine = ((sum(sum(data == 113)))+1) / (no\_of\_instances+2);

#Sixth Attribute(node-caps)

prob\_of\_having\_node\_cap = ((sum(sum(data == 11)))+1) / (no\_of\_instances+2);

prob\_of\_not\_having\_node\_cap = ((sum(sum(data == 90)))+1) / (no\_of\_instances+2);

#Seventh Attribute(Degree of malignity)

prob\_of\_degree\_one = ((sum(sum(data == 1)))+1) / (no\_of\_instances+2);

prob\_of\_degree\_two = ((sum(sum(data == 2)))+1) / (no\_of\_instances+2);

prob\_of\_degree\_three = ((sum(sum(data == 3)))+1) / (no\_of\_instances+2);

#Eighth Attribute(Breast)

prob\_of\_left\_breast = ((sum(sum(data == 300)))+1) / (no\_of\_instances+2);

prob\_of\_right\_breast = ((sum(sum(data == 400)))+1) / (no\_of\_instances+2);

#Ninth Attribute(Breast-Quad)

prob\_of\_left\_up = ((sum(sum(data == 500)))+1) / (no\_of\_instances+2);

prob\_of\_left\_low = ((sum(sum(data == 600)))+1) / (no\_of\_instances+2);

prob\_of\_right\_up = ((sum(sum(data == 700)))+1) / (no\_of\_instances+2);

prob\_of\_right\_low = ((sum(sum(data == 800)))+1) / (no\_of\_instances+2);

prob\_of\_central = ((sum(sum(data == 900)))+1) / (no\_of\_instances+2);

#Computing Conditional probabilities

#For no-recurrenece-events given yes and given no

no\_recurrence\_events\_given\_yes = 0;

no\_recurrence\_events\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,1) == 222) && (data(i,no\_of\_attributes) == 100)

no\_recurrence\_events\_given\_yes = no\_recurrence\_events\_given\_yes + 1;

elseif (data(i,1) == 222) && (data(i,no\_of\_attributes) ==200)

no\_recurrence\_events\_given\_no = no\_recurrence\_events\_given\_no + 1;

endif

endfor

prob\_of\_no\_recurrence\_events\_given\_no = (no\_recurrence\_events\_given\_no + 1) / (count\_no + 2);

prob\_of\_no\_recurrence\_events\_given\_yes = (no\_recurrence\_events\_given\_yes + 1) / (count\_yes + 2);

#For recurrenece-events given yes and given no

recurrence\_events\_given\_yes = 0;

recurrence\_events\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,1) == 333) && (data(i,no\_of\_attributes) == 100)

recurrence\_events\_given\_yes = recurrence\_events\_given\_yes + 1;

elseif (data(i,1) == 333) && (data(i,no\_of\_attributes) ==200)

recurrence\_events\_given\_no = recurrence\_events\_given\_no + 1;

endif

endfor

prob\_of\_recurrence\_events\_given\_no = (recurrence\_events\_given\_no + 1) / (count\_no + 2);

prob\_of\_recurrence\_events\_given\_yes = (recurrence\_events\_given\_yes + 1) / (count\_yes + 2);

#For Second Attribute

#Age 10 to 19

age\_10\_19\_given\_yes = 0;

age\_10\_19\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 19) && (data(i,no\_of\_attributes) == 100)

age\_10\_19\_given\_yes = age\_10\_19\_given\_yes + 1;

elseif (data(i,2) == 19) && (data(i,no\_of\_attributes) == 200)

age\_10\_19\_given\_no = age\_10\_19\_given\_no + 1;

endif

endfor

prob\_of\_age\_10\_19\_given\_no = (age\_10\_19\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_10\_19\_given\_yes = (age\_10\_19\_given\_yes + 1) / (count\_yes + 2);

#Age 20-29

age\_20\_29\_given\_yes = 0;

age\_20\_29\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 29) && (data(i,no\_of\_attributes) == 100)

age\_20\_29\_given\_yes = age\_20\_29\_given\_yes + 1;

elseif (data(i,2) == 29) && (data(i,no\_of\_attributes) == 200)

age\_20\_29\_given\_no = age\_20\_29\_given\_no + 1;

endif

endfor

#age\_20\_29\_given\_no

#age\_20\_29\_given\_yes

prob\_of\_age\_20\_29\_given\_no = (age\_20\_29\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_20\_29\_given\_yes = (age\_20\_29\_given\_yes + 1) / (count\_yes + 2);

#Age 30-39

age\_30\_39\_given\_yes = 0;

age\_30\_39\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 39) && (data(i,no\_of\_attributes) == 100)

age\_30\_39\_given\_yes = age\_30\_39\_given\_yes + 1;

elseif (data(i,2) == 39) && (data(i,no\_of\_attributes) == 200)

age\_30\_39\_given\_no = age\_30\_39\_given\_no + 1;

endif

endfor

#age\_30\_39\_given\_no

#age\_30\_39\_given\_yes

prob\_of\_age\_30\_39\_given\_no = (age\_30\_39\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_30\_39\_given\_yes = (age\_30\_39\_given\_yes + 1) / (count\_yes + 2);

#Age 40-49

age\_40\_49\_given\_yes = 0;

age\_40\_49\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 49) && (data(i,no\_of\_attributes) == 100)

age\_40\_49\_given\_yes = age\_40\_49\_given\_yes + 1;

elseif (data(i,2) == 49) && (data(i,no\_of\_attributes) == 200)

age\_40\_49\_given\_no = age\_40\_49\_given\_no + 1;

endif

endfor

#age\_40\_49\_given\_no

#age\_40\_49\_given\_yes

prob\_of\_age\_40\_49\_given\_no = (age\_40\_49\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_40\_49\_given\_yes = (age\_40\_49\_given\_yes + 1) / (count\_yes + 2);

#Age 50-59

age\_50\_59\_given\_yes = 0;

age\_50\_59\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 59) && (data(i,no\_of\_attributes) == 100)

age\_50\_59\_given\_yes = age\_50\_59\_given\_yes + 1;

elseif (data(i,2) == 59) && (data(i,no\_of\_attributes) == 200)

age\_50\_59\_given\_no = age\_50\_59\_given\_no + 1;

endif

endfor

#age\_50\_59\_given\_no

#age\_50\_59\_given\_yes

prob\_of\_age\_50\_59\_given\_no = (age\_50\_59\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_50\_59\_given\_yes = (age\_50\_59\_given\_yes + 1) / (count\_yes + 2);

#Age 60-69

age\_60\_69\_given\_yes = 0;

age\_60\_69\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 69) && (data(i,no\_of\_attributes) == 100)

age\_60\_69\_given\_yes = age\_60\_69\_given\_yes + 1;

elseif (data(i,2) == 69) && (data(i,no\_of\_attributes) == 200)

age\_60\_69\_given\_no = age\_60\_69\_given\_no + 1;

endif

endfor

#age\_60\_69\_given\_no

#age\_60\_69\_given\_yes

prob\_of\_age\_60\_69\_given\_no = (age\_60\_69\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_60\_69\_given\_yes = (age\_60\_69\_given\_yes + 1) / (count\_yes + 2);

#Age 70-79

age\_70\_79\_given\_yes = 0;

age\_70\_79\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 79) && (data(i,no\_of\_attributes) == 100)

age\_70\_79\_given\_yes = age\_70\_79\_given\_yes + 1;

elseif (data(i,2) == 79) && (data(i,no\_of\_attributes) == 200)

age\_70\_79\_given\_no = age\_70\_79\_given\_no + 1;

endif

endfor

#age\_70\_79\_given\_no

#age\_70\_79\_given\_yes

prob\_of\_age\_70\_79\_given\_no = (age\_70\_79\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_70\_79\_given\_yes = (age\_70\_79\_given\_yes + 1) / (count\_yes + 2);

#Age 80-89

age\_80\_89\_given\_yes = 0;

age\_80\_89\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 89) && (data(i,no\_of\_attributes) == 100)

age\_80\_89\_given\_yes = age\_80\_89\_given\_yes + 1;

elseif (data(i,2) == 89) && (data(i,no\_of\_attributes) == 200)

age\_80\_89\_given\_no = age\_80\_89\_given\_no + 1;

endif

endfor

#age\_80\_89\_given\_no

#age\_80\_89\_given\_yes

prob\_of\_age\_80\_89\_given\_no = (age\_80\_89\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_80\_89\_given\_yes = (age\_80\_89\_given\_yes + 1) / (count\_yes + 2);

#Age 90-99

age\_90\_99\_given\_yes = 0;

age\_90\_99\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,2) == 99) && (data(i,no\_of\_attributes) == 100)

age\_90\_99\_given\_yes = age\_90\_99\_given\_yes + 1;

elseif (data(i,2) == 99) && (data(i,no\_of\_attributes) == 200)

age\_90\_99\_given\_no = age\_90\_99\_given\_no + 1;

endif

endfor

#age\_90\_99\_given\_no

#age\_90\_99\_given\_yes

prob\_of\_age\_90\_99\_given\_no = (age\_90\_99\_given\_no + 1) / (count\_no + 2);

prob\_of\_age\_90\_99\_given\_yes = (age\_90\_99\_given\_yes + 1) / (count\_yes + 2);

#Third Attribute(Menopause)

#Premeno

premeno\_given\_yes = 0;

premeno\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,3) == 10) && (data(i,no\_of\_attributes) == 100)

premeno\_given\_yes = premeno\_given\_yes + 1;

elseif (data(i,3) == 10) && (data(i,no\_of\_attributes) == 200)

premeno\_given\_no = premeno\_given\_no + 1;

endif

endfor

#premeno\_given\_yes

#premeno\_given\_no

prob\_of\_premeno\_given\_no = (premeno\_given\_no + 1) / (count\_no + 2);

prob\_of\_premeno\_given\_yes = (premeno\_given\_yes + 1) / (count\_yes + 2);

#ge40

ge40\_given\_yes = 0;

ge40\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,3) == 20) && (data(i,no\_of\_attributes) == 100)

ge40\_given\_yes = ge40\_given\_yes + 1;

elseif (data(i,3) == 20) && (data(i,no\_of\_attributes) == 200)

ge40\_given\_no = ge40\_given\_no + 1;

endif

endfor

#ge40\_given\_yes

#ge40\_given\_no

prob\_of\_ge40\_given\_no = (ge40\_given\_no + 1) / (count\_no + 2);

prob\_of\_ge40\_given\_yes = (ge40\_given\_yes + 1) / (count\_yes + 2);

#lt40

lt40\_given\_yes = 0;

lt40\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,3) == 30) && (data(i,no\_of\_attributes) == 100)

lt40\_given\_yes = lt40\_given\_yes + 1;

elseif (data(i,3) == 30) && (data(i,no\_of\_attributes) == 200)

lt40\_given\_no = lt40\_given\_no + 1;

endif

endfor

#lt40\_given\_yes

#lt40\_given\_no

prob\_of\_lt40\_given\_no = (lt40\_given\_no + 1) / (count\_no + 2);

prob\_of\_lt40\_given\_yes = (lt40\_given\_yes + 1) / (count\_yes + 2);

#Fourth Attribute(Tumor Size)

#0-4

Tumor\_0\_4\_given\_yes = 0;

Tumor\_0\_4\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 4) && (data(i,no\_of\_attributes) == 100)

Tumor\_0\_4\_given\_yes = Tumor\_0\_4\_given\_yes + 1;

elseif (data(i,4) == 4) && (data(i,no\_of\_attributes) == 200)

Tumor\_0\_4\_given\_no = Tumor\_0\_4\_given\_no + 1;

endif

endfor

#Tumor\_0\_4\_given\_yes

#Tumor\_0\_4\_given\_no

prob\_of\_Tumor\_0\_4\_given\_no = (Tumor\_0\_4\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_0\_4\_given\_yes = (Tumor\_0\_4\_given\_yes + 1) / (count\_yes + 2);

#5-9

Tumor\_5\_9\_given\_yes = 0;

Tumor\_5\_9\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 9) && (data(i,no\_of\_attributes) == 100)

Tumor\_5\_9\_given\_yes = Tumor\_5\_9\_given\_yes + 1;

elseif (data(i,4) == 9) && (data(i,no\_of\_attributes) == 200)

Tumor\_5\_9\_given\_no = Tumor\_5\_9\_given\_no + 1;

endif

endfor

#Tumor\_5\_9\_given\_yes

#Tumor\_5\_9\_given\_no

prob\_of\_Tumor\_5\_9\_given\_no = (Tumor\_5\_9\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_5\_9\_given\_yes = (Tumor\_5\_9\_given\_yes + 1) / (count\_yes + 2);

#10-14

Tumor\_10\_14\_given\_yes = 0;

Tumor\_10\_14\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 14) && (data(i,no\_of\_attributes) == 100)

Tumor\_10\_14\_given\_yes = Tumor\_10\_14\_given\_yes + 1;

elseif (data(i,4) == 14) && (data(i,no\_of\_attributes) == 200)

Tumor\_10\_14\_given\_no = Tumor\_10\_14\_given\_no + 1;

endif

endfor

#Tumor\_10\_14\_given\_yes

#Tumor\_10\_14\_given\_no

prob\_of\_Tumor\_10\_14\_given\_no = (Tumor\_10\_14\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_10\_14\_given\_yes = (Tumor\_10\_14\_given\_yes + 1) / (count\_yes + 2);

#15-19

Tumor\_15\_19\_given\_yes = 0;

Tumor\_15\_19\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 17) && (data(i,no\_of\_attributes) == 100)

Tumor\_15\_19\_given\_yes = Tumor\_15\_19\_given\_yes + 1;

elseif (data(i,4) == 17) && (data(i,no\_of\_attributes) == 200)

Tumor\_15\_19\_given\_no = Tumor\_15\_19\_given\_no + 1;

endif

endfor

#Tumor\_15\_19\_given\_yes

#Tumor\_15\_19\_given\_no

prob\_of\_Tumor\_15\_19\_given\_no = (Tumor\_15\_19\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_15\_19\_given\_yes = (Tumor\_15\_19\_given\_yes + 1) / (count\_yes + 2);

#20-24

Tumor\_20\_24\_given\_yes = 0;

Tumor\_20\_24\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 24) && (data(i,no\_of\_attributes) == 100)

Tumor\_20\_24\_given\_yes = Tumor\_20\_24\_given\_yes + 1;

elseif (data(i,4) == 24) && (data(i,no\_of\_attributes) == 200)

Tumor\_20\_24\_given\_no = Tumor\_20\_24\_given\_no + 1;

endif

endfor

#Tumor\_20\_24\_given\_yes

#Tumor\_20\_24\_given\_no

prob\_of\_Tumor\_20\_24\_given\_no = (Tumor\_20\_24\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_20\_24\_given\_yes = (Tumor\_20\_24\_given\_yes + 1) / (count\_yes + 2);

#25-29

Tumor\_25\_29\_given\_yes = 0;

Tumor\_25\_29\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 27) && (data(i,no\_of\_attributes) == 100)

Tumor\_25\_29\_given\_yes = Tumor\_25\_29\_given\_yes + 1;

elseif (data(i,4) == 27) && (data(i,no\_of\_attributes) == 200)

Tumor\_25\_29\_given\_no = Tumor\_25\_29\_given\_no + 1;

endif

endfor

#Tumor\_25\_29\_given\_yes

#Tumor\_25\_29\_given\_no

prob\_of\_Tumor\_25\_29\_given\_no = (Tumor\_25\_29\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_25\_29\_given\_yes = (Tumor\_25\_29\_given\_yes + 1) / (count\_yes + 2);

#30-34

Tumor\_30\_34\_given\_yes = 0;

Tumor\_30\_34\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 34) && (data(i,no\_of\_attributes) == 100)

Tumor\_30\_34\_given\_yes = Tumor\_30\_34\_given\_yes + 1;

elseif (data(i,4) == 34) && (data(i,no\_of\_attributes) == 200)

Tumor\_30\_34\_given\_no = Tumor\_30\_34\_given\_no + 1;

endif

endfor

#Tumor\_30\_34\_given\_yes

#Tumor\_30\_34\_given\_no

prob\_of\_Tumor\_30\_34\_given\_no = (Tumor\_30\_34\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_30\_34\_given\_yes = (Tumor\_30\_34\_given\_yes + 1) / (count\_yes + 2);

#35-59

Tumor\_35\_39\_given\_yes = 0;

Tumor\_35\_39\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 37) && (data(i,no\_of\_attributes) == 100)

Tumor\_35\_39\_given\_yes = Tumor\_35\_39\_given\_yes + 1;

elseif (data(i,4) == 37) && (data(i,no\_of\_attributes) == 200)

Tumor\_35\_39\_given\_no = Tumor\_35\_39\_given\_no + 1;

endif

endfor

#Tumor\_35\_39\_given\_yes

#Tumor\_35\_39\_given\_no

prob\_of\_Tumor\_35\_39\_given\_no = (Tumor\_35\_39\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_35\_39\_given\_yes = (Tumor\_35\_39\_given\_yes + 1) / (count\_yes + 2);

#40-44

Tumor\_40\_44\_given\_yes = 0;

Tumor\_40\_44\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 44) && (data(i,no\_of\_attributes) == 100)

Tumor\_40\_44\_given\_yes = Tumor\_40\_44\_given\_yes + 1;

elseif (data(i,4) == 44) && (data(i,no\_of\_attributes) == 200)

Tumor\_40\_44\_given\_no = Tumor\_40\_44\_given\_no + 1;

endif

endfor

#Tumor\_40\_44\_given\_yes

#Tumor\_40\_44\_given\_no

prob\_of\_Tumor\_40\_44\_given\_no = (Tumor\_40\_44\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_40\_44\_given\_yes = (Tumor\_40\_44\_given\_yes + 1) / (count\_yes + 2);

#45-49

Tumor\_45\_49\_given\_yes = 0;

Tumor\_45\_49\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 47) && (data(i,no\_of\_attributes) == 100)

Tumor\_45\_49\_given\_yes = Tumor\_45\_49\_given\_yes + 1;

elseif (data(i,4) == 47) && (data(i,no\_of\_attributes) == 200)

Tumor\_45\_49\_given\_no = Tumor\_45\_49\_given\_no + 1;

endif

endfor

#Tumor\_45\_49\_given\_yes

#Tumor\_45\_49\_given\_no

prob\_of\_Tumor\_45\_49\_given\_no = (Tumor\_45\_49\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_45\_49\_given\_yes = (Tumor\_45\_49\_given\_yes + 1) / (count\_yes + 2);

#50-54

Tumor\_50\_54\_given\_yes = 0;

Tumor\_50\_54\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 54) && (data(i,no\_of\_attributes) == 100)

Tumor\_50\_54\_given\_yes = Tumor\_50\_54\_given\_yes + 1;

elseif (data(i,4) == 54) && (data(i,no\_of\_attributes) == 200)

Tumor\_50\_54\_given\_no = Tumor\_50\_54\_given\_no + 1;

endif

endfor

#Tumor\_50\_54\_given\_yes

#Tumor\_50\_54\_given\_no

prob\_of\_Tumor\_50\_54\_given\_no = (Tumor\_50\_54\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_50\_54\_given\_yes = (Tumor\_50\_54\_given\_yes + 1) / (count\_yes + 2);

#55-59

Tumor\_55\_59\_given\_yes = 0;

Tumor\_55\_59\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,4) == 57) && (data(i,no\_of\_attributes) == 100)

Tumor\_55\_59\_given\_yes = Tumor\_55\_59\_given\_yes + 1;

elseif (data(i,4) == 57) && (data(i,no\_of\_attributes) == 200)

Tumor\_55\_59\_given\_no = Tumor\_55\_59\_given\_no + 1;

endif

endfor

#Tumor\_55\_59\_given\_yes

#Tumor\_55\_59\_given\_no

prob\_of\_Tumor\_55\_59\_given\_no = (Tumor\_55\_59\_given\_no + 1) / (count\_no + 2);

prob\_of\_Tumor\_55\_59\_given\_yes = (Tumor\_55\_59\_given\_yes + 1) / (count\_yes + 2);

#Fifth Attribute

#Inv-Nodes

#0-2

inv\_0\_2\_given\_yes = 0;

inv\_0\_2\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 101) && (data(i,no\_of\_attributes) == 100)

inv\_0\_2\_given\_yes = inv\_0\_2\_given\_yes + 1;

elseif (data(i,5) == 101) && (data(i,no\_of\_attributes) == 200)

inv\_0\_2\_given\_no = inv\_0\_2\_given\_no + 1;

endif

endfor

#inv\_0\_2\_given\_yes

#inv\_0\_2\_given\_no

prob\_of\_inv\_0\_2\_given\_no = (inv\_0\_2\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_0\_2\_given\_yes = (inv\_0\_2\_given\_yes + 1) / (count\_yes + 2);

#3-5

inv\_3\_5\_given\_yes = 0;

inv\_3\_5\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 102) && (data(i,no\_of\_attributes) == 100)

inv\_3\_5\_given\_yes = inv\_3\_5\_given\_yes + 1;

elseif (data(i,5) == 102) && (data(i,no\_of\_attributes) == 200)

inv\_3\_5\_given\_no = inv\_3\_5\_given\_no + 1;

endif

endfor

#inv\_3\_5\_given\_yes

#inv\_3\_5\_given\_no

prob\_of\_inv\_3\_5\_given\_no = (inv\_3\_5\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_3\_5\_given\_yes = (inv\_3\_5\_given\_yes + 1) / (count\_yes + 2);

#6-8

inv\_6\_8\_given\_yes = 0;

inv\_6\_8\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 103) && (data(i,no\_of\_attributes) == 100)

inv\_6\_8\_given\_yes = inv\_6\_8\_given\_yes + 1;

elseif (data(i,5) == 103) && (data(i,no\_of\_attributes) == 200)

inv\_6\_8\_given\_no = inv\_6\_8\_given\_no + 1;

endif

endfor

#inv\_6\_8\_given\_yes

#inv\_6\_8\_given\_no

prob\_of\_inv\_6\_8\_given\_no = (inv\_6\_8\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_6\_8\_given\_yes = (inv\_6\_8\_given\_yes + 1) / (count\_yes + 2);

#9-11

inv\_9\_11\_given\_yes = 0;

inv\_9\_11\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 104) && (data(i,no\_of\_attributes) == 100)

inv\_9\_11\_given\_yes = inv\_9\_11\_given\_yes + 1;

elseif (data(i,5) == 104) && (data(i,no\_of\_attributes) == 200)

inv\_9\_11\_given\_no = inv\_9\_11\_given\_no + 1;

endif

endfor

#inv\_9\_11\_given\_yes

#inv\_9\_11\_given\_no

prob\_of\_inv\_9\_11\_given\_no = (inv\_9\_11\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_9\_11\_given\_yes = (inv\_9\_11\_given\_yes + 1) / (count\_yes + 2);

#12-14

inv\_12\_14\_given\_yes = 0;

inv\_12\_14\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 105) && (data(i,no\_of\_attributes) == 100)

inv\_12\_14\_given\_yes = inv\_12\_14\_given\_yes + 1;

elseif (data(i,5) == 105) && (data(i,no\_of\_attributes) == 200)

inv\_12\_14\_given\_no = inv\_12\_14\_given\_no + 1;

endif

endfor

#inv\_12\_14\_given\_yes

#inv\_12\_14\_given\_no

prob\_of\_inv\_12\_14\_given\_no = (inv\_12\_14\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_12\_14\_given\_yes = (inv\_12\_14\_given\_yes + 1) / (count\_yes + 2);

#15-17

inv\_15\_17\_given\_yes = 0;

inv\_15\_17\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 106) && (data(i,no\_of\_attributes) == 100)

inv\_15\_17\_given\_yes = inv\_15\_17\_given\_yes + 1;

elseif (data(i,5) == 106) && (data(i,no\_of\_attributes) == 200)

inv\_15\_17\_given\_no = inv\_15\_17\_given\_no + 1;

endif

endfor

#inv\_15\_17\_given\_yes

#inv\_15\_17\_given\_no

prob\_of\_inv\_15\_17\_given\_no = (inv\_15\_17\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_15\_17\_given\_yes = (inv\_15\_17\_given\_yes + 1) / (count\_yes + 2);

#18-20

inv\_18\_20\_given\_yes = 0;

inv\_18\_20\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 107) && (data(i,no\_of\_attributes) == 100)

inv\_18\_20\_given\_yes = inv\_18\_20\_given\_yes + 1;

elseif (data(i,5) == 107) && (data(i,no\_of\_attributes) == 200)

inv\_18\_20\_given\_no = inv\_18\_20\_given\_no + 1;

endif

endfor

#inv\_18\_20\_given\_yes

#inv\_18\_20\_given\_no

prob\_of\_inv\_18\_20\_given\_no = (inv\_18\_20\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_18\_20\_given\_yes = (inv\_18\_20\_given\_yes + 1) / (count\_yes + 2);

#21-23

inv\_21\_23\_given\_yes = 0;

inv\_21\_23\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 108) && (data(i,no\_of\_attributes) == 100)

inv\_21\_23\_given\_yes = inv\_21\_23\_given\_yes + 1;

elseif (data(i,5) == 108) && (data(i,no\_of\_attributes) == 200)

inv\_21\_23\_given\_no = inv\_21\_23\_given\_no + 1;

endif

endfor

#inv\_21\_23\_given\_yes

#inv\_21\_23\_given\_no

prob\_of\_inv\_21\_23\_given\_no = (inv\_21\_23\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_21\_23\_given\_yes = (inv\_21\_23\_given\_yes + 1) / (count\_yes + 2);

#24-26

inv\_24\_26\_given\_yes = 0;

inv\_24\_26\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 109) && (data(i,no\_of\_attributes) == 100)

inv\_24\_26\_given\_yes = inv\_24\_26\_given\_yes + 1;

elseif (data(i,5) == 109) && (data(i,no\_of\_attributes) == 200)

inv\_24\_26\_given\_no = inv\_24\_26\_given\_no + 1;

endif

endfor

#inv\_24\_26\_given\_yes

#inv\_24\_26\_given\_no

prob\_of\_inv\_24\_26\_given\_no = (inv\_24\_26\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_24\_26\_given\_yes = (inv\_24\_26\_given\_yes + 1) / (count\_yes + 2);

#27-29

inv\_27\_29\_given\_yes = 0;

inv\_27\_29\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 110) && (data(i,no\_of\_attributes) == 100)

inv\_27\_29\_given\_yes = inv\_27\_29\_given\_yes + 1;

elseif (data(i,5) == 110) && (data(i,no\_of\_attributes) == 200)

inv\_27\_29\_given\_no = inv\_27\_29\_given\_no + 1;

endif

endfor

#inv\_27\_29\_given\_yes

#inv\_27\_29\_given\_no

prob\_of\_inv\_27\_29\_given\_no = (inv\_27\_29\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_27\_29\_given\_yes = (inv\_27\_29\_given\_yes + 1) / (count\_yes + 2);

#30-32

inv\_30\_32\_given\_yes = 0;

inv\_30\_32\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 111) && (data(i,no\_of\_attributes) == 100)

inv\_30\_32\_given\_yes = inv\_30\_32\_given\_yes + 1;

elseif (data(i,5) == 111) && (data(i,no\_of\_attributes) == 200)

inv\_30\_32\_given\_no = inv\_30\_32\_given\_no + 1;

endif

endfor

#inv\_30\_32\_given\_yes

#inv\_30\_32\_given\_no

prob\_of\_inv\_30\_32\_given\_no = (inv\_30\_32\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_30\_32\_given\_yes = (inv\_30\_32\_given\_yes + 1) / (count\_yes + 2);

#33-35

inv\_33\_35\_given\_yes = 0;

inv\_33\_35\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 112) && (data(i,no\_of\_attributes) == 100)

inv\_33\_35\_given\_yes = inv\_33\_35\_given\_yes + 1;

elseif (data(i,5) == 112) && (data(i,no\_of\_attributes) == 200)

inv\_33\_35\_given\_no = inv\_33\_35\_given\_no + 1;

endif

endfor

#inv\_33\_35\_given\_yes

#inv\_33\_35\_given\_no

prob\_of\_inv\_33\_35\_given\_no = (inv\_33\_35\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_33\_35\_given\_yes = (inv\_33\_35\_given\_yes + 1) / (count\_yes + 2);

#36-39

inv\_36\_39\_given\_yes = 0;

inv\_36\_39\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,5) == 113) && (data(i,no\_of\_attributes) == 100)

inv\_36\_39\_given\_yes = inv\_36\_39\_given\_yes + 1;

elseif (data(i,5) == 113) && (data(i,no\_of\_attributes) == 200)

inv\_36\_39\_given\_no = inv\_36\_39\_given\_no + 1;

endif

endfor

#inv\_36\_39\_given\_yes

#inv\_36\_39\_given\_no

prob\_of\_inv\_36\_39\_given\_no = (inv\_36\_39\_given\_no + 1) / (count\_no + 2);

prob\_of\_inv\_36\_39\_given\_yes = (inv\_36\_39\_given\_yes + 1) / (count\_yes + 2);

#Sixth Attribute

#Node\_Cap

node\_cap\_yes\_given\_yes = 0;

node\_cap\_yes\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,6) == 11) && (data(i,no\_of\_attributes) == 100)

node\_cap\_yes\_given\_yes = node\_cap\_yes\_given\_yes + 1;

elseif (data(i,6) == 11) && (data(i,no\_of\_attributes) == 200)

node\_cap\_yes\_given\_no = node\_cap\_yes\_given\_no + 1;

endif

endfor

#node\_cap\_yes\_given\_yes

#node\_cap\_yes\_given\_no

prob\_of\_node\_cap\_yes\_given\_no = (node\_cap\_yes\_given\_no + 1) / (count\_no + 2);

prob\_of\_node\_cap\_yes\_given\_yes = (node\_cap\_yes\_given\_yes + 1) / (count\_yes + 2);

node\_cap\_no\_given\_yes = 0;

node\_cap\_no\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,6) == 90) && (data(i,no\_of\_attributes) == 100)

node\_cap\_no\_given\_yes = node\_cap\_no\_given\_yes + 1;

elseif (data(i,6) == 90) && (data(i,no\_of\_attributes) == 200)

node\_cap\_no\_given\_no = node\_cap\_no\_given\_no + 1;

endif

endfor

#node\_cap\_no\_given\_yes

#node\_cap\_no\_given\_no

prob\_of\_node\_cap\_no\_given\_no = (node\_cap\_no\_given\_no + 1) / (count\_no + 2);

prob\_of\_node\_cap\_no\_given\_yes = (node\_cap\_no\_given\_yes + 1) / (count\_yes + 2);

#Seventh Attribute(Degree of Malignity)

degree\_one\_given\_yes = 0;

degree\_one\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,7) == 1) && (data(i,no\_of\_attributes) == 100)

degree\_one\_given\_yes = degree\_one\_given\_yes + 1;

elseif (data(i,7) == 1) && (data(i,no\_of\_attributes) == 200)

degree\_one\_given\_no = degree\_one\_given\_no + 1;

endif

endfor

#degree\_one\_given\_no

#degree\_one\_given\_yes

prob\_of\_degree\_one\_given\_no = (degree\_one\_given\_no + 1) / (count\_no + 2);

prob\_of\_degree\_one\_given\_yes = (degree\_one\_given\_yes + 1) / (count\_yes + 2);

degree\_two\_given\_yes = 0;

degree\_two\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,7) == 2) && (data(i,no\_of\_attributes) == 100)

degree\_two\_given\_yes = degree\_two\_given\_yes + 1;

elseif (data(i,7) == 2) && (data(i,no\_of\_attributes) == 200)

degree\_two\_given\_no = degree\_two\_given\_no + 1;

endif

endfor

#degree\_two\_given\_no

#degree\_two\_given\_yes

prob\_of\_degree\_two\_given\_no = (degree\_two\_given\_no + 1) / (count\_no + 2);

prob\_of\_degree\_two\_given\_yes = (degree\_two\_given\_yes + 1) / (count\_yes + 2);

degree\_three\_given\_yes = 0;

degree\_three\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,7) == 3) && (data(i,no\_of\_attributes) == 100)

degree\_three\_given\_yes = degree\_three\_given\_yes + 1;

elseif (data(i,7) == 3) && (data(i,no\_of\_attributes) == 200)

degree\_three\_given\_no = degree\_three\_given\_no + 1;

endif

endfor

#degree\_three\_given\_no

#degree\_three\_given\_yes

prob\_of\_degree\_three\_given\_no = (degree\_three\_given\_no + 1) / (count\_no + 2);

prob\_of\_degree\_three\_given\_yes = (degree\_three\_given\_yes + 1) / (count\_yes + 2);

#Eighth Attribute

#Breast Side

#Left Breast

left\_breast\_given\_yes = 0;

left\_breast\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,8) == 300) && (data(i,no\_of\_attributes) == 100)

left\_breast\_given\_yes = left\_breast\_given\_yes + 1;

elseif (data(i,8) == 300) && (data(i,no\_of\_attributes) == 200)

left\_breast\_given\_no = left\_breast\_given\_no + 1;

endif

endfor

#left\_breast\_given\_no

#left\_breast\_given\_yes

prob\_of\_left\_breast\_given\_no = (left\_breast\_given\_no + 1) / (count\_no + 2);

prob\_of\_left\_breast\_given\_yes = (left\_breast\_given\_yes + 1) / (count\_yes + 2);

#Right Breast

right\_breast\_given\_yes = 0;

right\_breast\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,8) == 400) && (data(i,no\_of\_attributes) == 100)

right\_breast\_given\_yes = right\_breast\_given\_yes + 1;

elseif (data(i,8) == 400) && (data(i,no\_of\_attributes) == 200)

right\_breast\_given\_no = right\_breast\_given\_no + 1;

endif

endfor

#right\_breast\_given\_no

#right\_breast\_given\_yes

prob\_of\_right\_breast\_given\_no = (right\_breast\_given\_no + 1) / (count\_no + 2);

prob\_of\_right\_breast\_given\_yes = (right\_breast\_given\_yes + 1) / (count\_yes + 2);

#Ninth Attribute

#Breast-quad

#Left-Up

left\_up\_given\_yes = 0;

left\_up\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,9) == 500) && (data(i,no\_of\_attributes) == 100)

left\_up\_given\_yes = left\_up\_given\_yes + 1;

elseif (data(i,9) == 500) && (data(i,no\_of\_attributes) == 200)

left\_up\_given\_no = left\_up\_given\_no + 1;

endif

endfor

#left\_up\_given\_no

#left\_up\_given\_yes

prob\_of\_left\_up\_given\_no = (left\_up\_given\_no + 1) / (count\_no + 2);

prob\_of\_left\_up\_given\_yes = (left\_up\_given\_yes + 1) / (count\_yes + 2);

#Left-Low

left\_low\_given\_yes = 0;

left\_low\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,9) == 600) && (data(i,no\_of\_attributes) == 100)

left\_low\_given\_yes = left\_low\_given\_yes + 1;

elseif (data(i,9) == 600) && (data(i,no\_of\_attributes) == 200)

left\_low\_given\_no = left\_low\_given\_no + 1;

endif

endfor

#left\_low\_given\_yes

#left\_low\_given\_no

prob\_of\_left\_low\_given\_no = (left\_low\_given\_no + 1) / (count\_no + 2);

prob\_of\_left\_low\_given\_yes = (left\_low\_given\_yes + 1) / (count\_yes + 2);

#Right-up

right\_up\_given\_yes = 0;

right\_up\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,9) == 700) && (data(i,no\_of\_attributes) == 100)

right\_up\_given\_yes = right\_up\_given\_yes + 1;

elseif (data(i,9) == 700) && (data(i,no\_of\_attributes) == 200)

right\_up\_given\_no = right\_up\_given\_no + 1;

endif

endfor

#right\_up\_given\_yes

#right\_up\_given\_no

prob\_of\_right\_up\_given\_no = (right\_up\_given\_no + 1) / (count\_no + 2);

prob\_of\_right\_up\_given\_yes= (right\_up\_given\_yes + 1) / (count\_yes + 2);

#Right-low

right\_low\_given\_yes = 0;

right\_low\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,9) == 800) && (data(i,no\_of\_attributes) == 100)

right\_low\_given\_yes = right\_low\_given\_yes + 1;

elseif (data(i,9) == 800) && (data(i,no\_of\_attributes) == 200)

right\_low\_given\_no = right\_low\_given\_no + 1;

endif

endfor

#right\_low\_given\_yes

#right\_low\_given\_no

prob\_of\_right\_low\_given\_no = (right\_low\_given\_no + 1) / (count\_no + 2);

prob\_of\_right\_low\_given\_yes= (right\_low\_given\_yes + 1) / (count\_yes + 2);

#central

central\_given\_yes = 0;

central\_given\_no = 0;

for i = 1 : no\_of\_instances

if (data(i,9) == 900) && (data(i,no\_of\_attributes) == 100)

central\_given\_yes = central\_given\_yes + 1;

elseif (data(i,9) == 900) && (data(i,no\_of\_attributes) == 200)

central\_given\_no = central\_given\_no + 1;

endif

endfor

#central\_given\_yes

#central\_given\_no

prob\_of\_central\_given\_no = (central\_given\_no + 1) / (count\_no + 2);

prob\_of\_central\_given\_yes = (central\_given\_yes + 1) / (count\_yes + 2);

Evidence = 1;

#For Tumor Class

display("Please Enter the Choices\n");

display("Enter the Tumor Class");

class\_choice = input("Enter Your Choice\n1.No-Recurrence-Events\n2.Recurrence-Events\n");

if class\_choice == 1

prob\_of\_one = prob\_of\_no\_recurrence\_events\_given\_yes;

prob\_of\_not\_one = prob\_of\_no\_recurrence\_events\_given\_no;

Evidence = Evidence \* prob\_of\_no\_recurrence\_events;

elseif class\_choice == 2

prob\_of\_one = prob\_of\_recurrence\_events\_given\_yes;

prob\_of\_not\_one = prob\_of\_recurrence\_events\_given\_no;

Evidence = Evidence \* prob\_of\_recurrence\_events;

else

display("Invalid Input");

return

endif

#For Age

display("Enter the choice for Age-Group\n");

age\_choice = input("1.10-19\n2.20-29\n3.30-39\n4.40-49\n5.50-59\n6.60-69\n7.70-79\n8.80-89\n9.90-99\n");

if age\_choice == 1

prob\_of\_two = prob\_of\_age\_10\_19\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_10\_19\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_10\_and\_19;

elseif age\_choice == 2

prob\_of\_two = prob\_of\_age\_20\_29\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_20\_29\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_20\_and\_29;

elseif age\_choice == 3

prob\_of\_two = prob\_of\_age\_30\_39\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_30\_39\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_30\_and\_39;

elseif age\_choice == 4

prob\_of\_two = prob\_of\_age\_40\_49\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_40\_49\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_40\_and\_49;

elseif age\_choice == 5

prob\_of\_two = prob\_of\_age\_50\_59\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_50\_59\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_50\_and\_59;

elseif age\_choice == 6

prob\_of\_two = prob\_of\_age\_60\_69\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_60\_69\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_60\_and\_69;

elseif age\_choice == 7

prob\_of\_two = prob\_of\_age\_70\_79\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_70\_79\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_70\_and\_79;

elseif age\_choice == 8

prob\_of\_two = prob\_of\_age\_80\_89\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_80\_89\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_80\_and\_89;

elseif age\_choice == 9

prob\_of\_two = prob\_of\_age\_90\_99\_given\_yes;

prob\_of\_not\_two = prob\_of\_age\_90\_99\_given\_no;

Evidence = Evidence \* prob\_of\_age\_group\_between\_90\_and\_99;

else

display("Invalid Input");

return

endif

#Third Attribute

#Menopause

display("Enter the menopause state");

men\_choice = input("\n1.Premeno\n2.Ge40\n3.Lt40\n");

if men\_choice == 1

prob\_of\_three = prob\_of\_premeno\_given\_yes;

prob\_of\_not\_three = prob\_of\_premeno\_given\_no;

Evidence = Evidence \* prob\_of\_premeno;

elseif men\_choice == 2

prob\_of\_three = prob\_of\_ge40\_given\_yes;

prob\_of\_not\_three = prob\_of\_ge40\_given\_no;

Evidence = Evidence \* prob\_of\_ge40;

elseif men\_choice == 3

prob\_of\_three = prob\_of\_lt40\_given\_yes;

prob\_of\_not\_three = prob\_of\_lt40\_given\_no;

Evidence = Evidence \* prob\_of\_lt40;

else

display("Invalid Input");

return;

endif

#Fourth Attribute

#Tumor-Size

display("\nEnter the tumor size")

size\_choice = input("\n1.0-4\n2.5-9\n3.10-14\n4.15-19\n5.20-24\n6.25-29\n7.30-34\n8.35-39\n9.40-44\n10.45-49\n11.50-54\n12.55-59\n");

if size\_choice == 1

prob\_of\_four = prob\_of\_Tumor\_0\_4\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_0\_4\_given\_no;

Evidence = Evidence \* prob\_of\_zero\_to\_fourth;

elseif size\_choice == 2

prob\_of\_four = prob\_of\_Tumor\_5\_9\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_5\_9\_given\_no;

Evidence = Evidence \* prob\_of\_fifth\_to\_nine;

elseif size\_choice == 3

prob\_of\_four = prob\_of\_Tumor\_10\_14\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_10\_14\_given\_no;

Evidence = Evidence \* prob\_of\_ten\_to\_fourteen;

elseif size\_choice == 4

prob\_of\_four = prob\_of\_Tumor\_15\_19\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_15\_19\_given\_no;

Evidence = Evidence \* prob\_of\_fifteen\_to\_ninteen;

elseif size\_choice == 5

prob\_of\_four = prob\_of\_Tumor\_20\_24\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_20\_24\_given\_no;

Evidence = Evidence \* prob\_of\_twenty\_to\_twentyfour;

elseif size\_choice == 6

prob\_of\_four = prob\_of\_Tumor\_25\_29\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_25\_29\_given\_no;

Evidence = Evidence \* prob\_of\_twentyfive\_to\_twentynine;

elseif size\_choice == 7

prob\_of\_four = prob\_of\_Tumor\_30\_34\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_30\_34\_given\_no;

Evidence = Evidence \* prob\_of\_thirty\_to\_thirtyfour;

elseif size\_choice == 8

prob\_of\_four = prob\_of\_Tumor\_35\_39\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_35\_39\_given\_no;

Evidence = Evidence \* prob\_of\_thirtyfive\_to\_thirtynine;

elseif size\_choice == 9

prob\_of\_four = prob\_of\_Tumor\_40\_44\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_40\_44\_given\_no;

Evidence = Evidence \* prob\_of\_forty\_to\_fortyfour;

elseif size\_choice == 10

prob\_of\_four = prob\_of\_Tumor\_45\_49\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_45\_49\_given\_no;

Evidence = Evidence \* prob\_of\_fortyfive\_to\_fortynine;

elseif size\_choice == 11

prob\_of\_four = prob\_of\_Tumor\_50\_54\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_50\_54\_given\_no;

Evidence = Evidence \* prob\_of\_fifty\_to\_fiftyfour;

elseif size\_choice == 12

prob\_of\_four = prob\_of\_Tumor\_55\_59\_given\_yes;

prob\_of\_not\_four = prob\_of\_Tumor\_55\_59\_given\_no;

Evidence = Evidence \* prob\_of\_fiftyfive\_to\_fiftynine;

else

display("Invalid input");

return

endif

#Fifth Attribute

#Number of inv-nodes

display("\nEnter the choice of number of inv-nodes\n");

inv\_choice = input("\n1.0-2\n2.3-5\n3.6-8\n4.9-11\n5.12-14\n6.15-17\n7.18-20\n8.21-23\n9.24-26\n10.27-29\n11.30-32\n12.33-35\n13.36-39\n");

if inv\_choice == 1

prob\_of\_five = prob\_of\_inv\_0\_2\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_0\_2\_given\_no;

Evidence = Evidence \* prob\_of\_zero\_to\_two;

elseif inv\_choice == 2

prob\_of\_five = prob\_of\_inv\_3\_5\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_3\_5\_given\_no;

Evidence = Evidence \* prob\_of\_three\_to\_five;

elseif inv\_choice == 3

prob\_of\_five = prob\_of\_inv\_6\_8\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_6\_8\_given\_no;

Evidence = Evidence \* prob\_of\_six\_to\_eight;

elseif inv\_choice == 4

prob\_of\_five = prob\_of\_inv\_9\_11\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_9\_11\_given\_no;

Evidence = Evidence \* prob\_of\_nine\_to\_eleven;

elseif inv\_choice == 5

prob\_of\_five = prob\_of\_inv\_12\_14\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_12\_14\_given\_no;

Evidence = Evidence \* prob\_of\_twelve\_to\_fourteen;

elseif inv\_choice == 6

prob\_of\_five = prob\_of\_inv\_15\_17\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_15\_17\_given\_no;

Evidence = Evidence \* prob\_of\_fifteen\_to\_seventeen;

elseif inv\_choice == 7

prob\_of\_five = prob\_of\_inv\_18\_20\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_18\_20\_given\_no;

Evidence = Evidence \* prob\_of\_eighteen\_to\_twenty;

elseif inv\_choice == 8

prob\_of\_five = prob\_of\_inv\_21\_23\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_21\_23\_given\_no;

Evidence = Evidence \* prob\_of\_twentyone\_to\_twentythree;

elseif inv\_choice == 9

prob\_of\_five = prob\_of\_inv\_24\_26\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_24\_26\_given\_no;

Evidence = Evidence \* prob\_of\_twentyfour\_to\_twentysix;

elseif inv\_choice == 10

prob\_of\_five = prob\_of\_inv\_27\_29\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_27\_29\_given\_no;

Evidence = Evidence \* prob\_of\_twentyseven\_to\_twentynine;

elseif inv\_choice == 11

prob\_of\_five = prob\_of\_inv\_30\_32\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_30\_32\_given\_no;

Evidence = Evidence \* prob\_of\_thirty\_to\_thirtytwo;

elseif inv\_choice == 12

prob\_of\_five = prob\_of\_inv\_33\_35\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_33\_35\_given\_no;

Evidence = Evidence \* prob\_of\_thirtythree\_to\_thirtyfive;

elseif inv\_choice == 13

prob\_of\_five = prob\_of\_inv\_36\_39\_given\_yes;

prob\_of\_not\_five = prob\_of\_inv\_36\_39\_given\_no;

Evidence = Evidence \* prob\_of\_thirtysix\_to\_thirtynine;

else

display("Invalid Input\n");

return

endif

#Sixth Attribute

#Node\_Cap

display("\nEnter the presence of node cap\n");

cap\_choice = input("\n1.Yes\n2.No\n");

if cap\_choice == 1

prob\_of\_six = prob\_of\_node\_cap\_yes\_given\_yes;

prob\_of\_not\_six = prob\_of\_node\_cap\_yes\_given\_no;

Evidence = Evidence \* prob\_of\_having\_node\_cap;

elseif cap\_choice == 2

prob\_of\_six = prob\_of\_node\_cap\_no\_given\_yes;

prob\_of\_not\_six = prob\_of\_node\_cap\_no\_given\_no;

Evidence = Evidence \* prob\_of\_not\_having\_node\_cap;

else

display("Invalid input")

return;

endif

#Seventh Attribute

#Degree of Malignity

display("\nEnter the degree of malignity");

degree\_choice = input("\n1.One\n2.Two\n3.Three");

if degree\_choice == 1

prob\_of\_seven = prob\_of\_degree\_one\_given\_yes;

prob\_of\_not\_seven = prob\_of\_degree\_one\_given\_no;

Evidence = Evidence \* prob\_of\_degree\_one;

elseif degree\_choice == 2

prob\_of\_seven = prob\_of\_degree\_two\_given\_yes;

prob\_of\_not\_seven = prob\_of\_degree\_two\_given\_no;

Evidence = Evidence \* prob\_of\_degree\_two;

elseif degree\_choice == 3

prob\_of\_seven = prob\_of\_degree\_three\_given\_yes;

prob\_of\_not\_seven = prob\_of\_degree\_three\_given\_no;

Evidence = Evidence \* prob\_of\_degree\_three;

else

display("Invalid option")

return

endif

#Eighth Attribute

#Breast Side

display("Enter the breast side\n");

breast\_choice = input("\n1.Left\n2.Right");

if breast\_choice == 1

prob\_of\_eight = prob\_of\_left\_breast\_given\_yes;

prob\_of\_not\_eight = prob\_of\_left\_breast\_given\_no;

Evidence = Evidence \* prob\_of\_left\_breast;

elseif breast\_choice == 2

prob\_of\_eight = prob\_of\_right\_breast\_given\_yes;

prob\_of\_not\_eight = prob\_of\_right\_breast\_given\_no;

Evidence = Evidence \* prob\_of\_right\_breast;

else

display("Invalid option");

return;

endif

#Ninth Attribute

#Breast Quad

display("\nEnter the breast quad");

quad\_choice = input("\n1.Left\_Up\n2.Left\_Low\n3.Right\_up\n4.Right\_Low\n5.Central\n");

if quad\_choice == 1

prob\_of\_nine = prob\_of\_left\_up\_given\_yes;

prob\_of\_not\_nine = prob\_of\_left\_up\_given\_no;

Evidence = Evidence \* prob\_of\_left\_up;

elseif quad\_choice == 2

prob\_of\_nine = prob\_of\_left\_low\_given\_yes;

prob\_of\_not\_nine = prob\_of\_left\_low\_given\_no;

Evidence = Evidence \* prob\_of\_left\_low;

elseif quad\_choice == 3

prob\_of\_nine = prob\_of\_right\_up\_given\_yes;

prob\_of\_not\_nine = prob\_of\_right\_up\_given\_no;

Evidence = Evidence \* prob\_of\_right\_up;

elseif quad\_choice == 4

prob\_of\_nine = prob\_of\_right\_low\_given\_yes;

prob\_of\_not\_nine = prob\_of\_right\_low\_given\_no;

Evidence = Evidence \* prob\_of\_right\_low;

elseif quad\_choice == 5

prob\_of\_nine = prob\_of\_central\_given\_yes;

prob\_of\_not\_nine = prob\_of\_central\_given\_no;

Evidence = Evidence \* prob\_of\_central;

else

display("Invalid Input")

return

endif

#display(Evidence);

final\_probability\_yes = (prob\_of\_one \* prob\_of\_two \* prob\_of\_three \* prob\_of\_four \* prob\_of\_five \* prob\_of\_six \* prob\_of\_seven \* prob\_of\_eight \* prob\_of\_nine \* probability\_of\_yes) / (Evidence);

final\_probability\_no = (prob\_of\_not\_one \* prob\_of\_not\_two \* prob\_of\_not\_three \* prob\_of\_not\_four \* prob\_of\_not\_five \* prob\_of\_not\_six \* prob\_of\_not\_seven \* prob\_of\_not\_eight \* prob\_of\_not\_nine \* probability\_of\_no) / (Evidence);

display(final\_probability\_no);

display(final\_probability\_yes);

if final\_probability\_no > final\_probability\_yes

display("Chillax You have less chances of having a breast cancer");

else

display("Please consult gynaecologist as soon as possible");

endif