```
for j=1:4;
g(j, i)=g(j, i)/s(i);
end
end

wg(1)=0;wg(2)=0;wg(3)=0;wg(4)=0;
fori=1:4;
for j=1:4;
wg(i)=wg(i)+g(i, j);
end
wg(i)=wg(i)/4;
end
lambdamax=wg(1)*s(1)+wg(2)*s(2)+wg(3)*s(3)+wg(4)*s(
4);
CI=(lambdamax-4)/3;
CR=CI/0.9;
printf('\nlambdamax at level 1 %f', lambdamax)
printf('\nconsistency ratio for comparison of the factors wrt
goal is %f', CR)
//comparison matrix for level2(with respect to the factor A
xa=[1 6 8;1/6 1 4;1/8 1/4 1];
sa(1)=0;sa(2)=0;sa(3)=0;
fori=1:3;
for j=1:3;
sa(i)=sa(i)+xa(j, i);
end
end
fori=1:3;
for j=1:3;
xa(j, i)=xa(j, i)/sa(i);
end
end

wa(1)=0;wa(2)=0;wa(3)=0;
fori=1:3;
for j=1:3;
wa(i)=wa(i)+xa(i, j);
end
wa(i)=wa(i)/3;
end
lambdamax=wa(1)*sa(1)+wa(2)*sa(2)+wa(3)*sa(3);
CI=(lambdamax-3)/2;
CR=CI/0.58;
printf('\nlambdamax at level 2 for the wrt factor A %f',
lambdamax)
printf('\nconsistency ratio for comparison of the factors wrt
factor A is %f', CR)
//comparison matrix for level2(with respect to the factor B
xb=[1 7 1/5;1/7 1 1/8;5 8 1];
sb(1)=0;sb(2)=0;sb(3)=0;
fori=1:3;
for j=1:3;
sb(i)=sb(i)+xb(j, i);
end
end
fori=1:3;
for j=1:3;
xb(j, i)=xb(j, i)/sb(i);
end
end
wb(1)=0;wb(2)=0;wb(3)=0;
fori=1:3;
for j=1:3;
wb(i)=wb(i)+xb(i, j);
end
wb(i)=wb(i)/3;
end
lambdamax=wb(1)*sb(1)+wb(2)*sb(2)+wb(3)*sb(3)
CI=(lambdamax-3)/2;
CR=CI/0.58;
printf('\nlambdamax at level 2 for the wrt factor B %f',
lambdamax)
printf('\nconsistency ratio for comparison of the factors wrt
factor B is %f', CR)
xc=[1 8 6;1/8 1 1/4;1/6 4 1];
sc(1)=0;sc(2)=0;sc(3)=0;
fori=1:3;
for j=1:3;
sc(i)=sc(i)+xc(j, i);
end
end
fori=1:3;
for j=1:3;
xc(j, i)=xc(j, i)/sc(i);
end
end

wc(1)=0;wc(2)=0;wc(3)=0;
fori=1:3;
for j=1:3;
wc(i)=wc(i)+xc(i, j);
end
wc(i)=wc(i)/3;
end
lambdamax=wc(1)*sc(1)+wc(2)*sc(2)+wc(3)*sc(3)
CI=(lambdamax-3)/2
CR=CI/0.58
xd=[1 5 4;1/5 1 1/3;1/4 3 1];
sd(1)=0;sd(2)=0;sd(3)=0;
fori=1:3;
for j=1:3;
sd(i)=sd(i)+xd(j, i);
end
end
fori=1:3;
for j=1:3;
xd(j, i)=xd(j, i)/sd(i);
end
end
wd(1)=0;wd(2)=0;wd(3)=0;
fori=1:3;
for j=1:3;
wd(i)=wd(i)+xd(i, j);
end
wd(i)=wd(i)/3;
end
lambdamax=wd(1)*sd(1)+wd(2)*sd(2)+wd(3)*sd(3)
CI=(lambdamax-3)/2
CR=CI/0.58
disp(CR)
adjwa=wg(1)/(wg(1)+wg(2)+wg(3)+wg(4))
adjwb=wg(2)/(wg(1)+wg(2)+wg(3)+wg(4))
adjwc=wg(3)/(wg(1)+wg(2)+wg(3)+wg(4))
adjwd=wg(4)/(wg(1)+wg(2)+wg(3)+wg(4))
x=adjwa*wa(1)+adjwb*wb(1)+adjwc*wc(1)+adjwd*wd(1)
y=adjwa*wa(2)+adjwb*wb(2)+adjwc*wc(2)+adjwd*wd(2)
z=adjwa*wa(3)+adjwb*wb(3)+adjwc*wc(3)+adjwd*wd(3)
printf('composite weight for A %f\n', x)
```

```
printf('composite weight for B %f\n', y)
printf('composite weight for C %f\n', z)
```

Output of the result

```
Enter the comparison matrix for the criterion [1 5 3 7;1/5 1 1/3 5;1/3 3 1 6;1/7 1/5 1/6 1];
lambdamax at level 1 4.341409
consistency ratio for comparison of the factors wrt goal is 0.126448
lambdamax at level 2 for the wrt factor A 3.245477
consistency ratio for comparison of the factors wrt factor A is 0.211618
lambdamax at level 2 for the wrt factor B 3.412413
consistency ratio for comparison of the factors wrt factor B is 0.355528

consistency ratio for comparison of the factors wrt factor C is 0.2116180
consistency ratio for comparison of the factors wrt factor B is 0.1132911
composite weight for A0.666367
composite weight for B0.136193
composite weight for C0.197440.
```

3. Conclusion

Input for the program will be only the comparison matrix entered by the user according to his/her preference. The comparison matrices for the alternative with respect to criterions will be given by the experts in the field. Here as the composite weight for A is more followed by C and B, the best alternative is A. The manual results and the programming result matches. However modifications in the program can be made according to the number of criterion and alternatives.

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