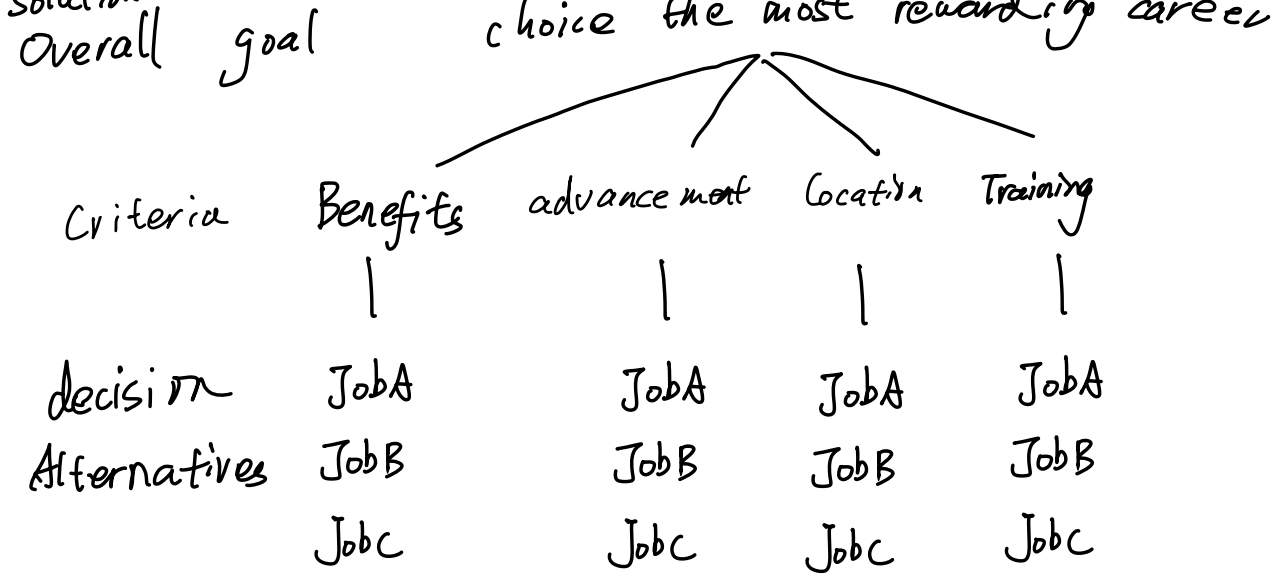
Problem

Q1 graphical form

Solution



Q2.

Solution

$$\begin{bmatrix} 0.0769 & 0.0852 & 0.0588 & 0.0690 \\ 0.538 & 0.597 & 0.588 & 0.621 \\ 0.154 & 0.119 & 0.118 & 0.103 \\ 0.231 & 0.199 & 0.235 & 0.207 \end{bmatrix} \begin{bmatrix} 0.0725 \\ 0.586 \\ 0.124 \\ 0.218 \end{bmatrix}$$

$$13 \quad 1.676 \quad 8.5 \quad 4.833$$

- 정규화

$$\begin{bmatrix} 1 & 1/7 & 1/2 & 1/3 \\ 7 & 1 & 5 & 3 \\ 2 & 1/5 & 1 & 1/2 \\ 3 & 1/3 & 2 & 1 \end{bmatrix} \begin{bmatrix} 0.0725 \\ 0.586 \\ 0.124 \\ 0.218 \end{bmatrix}$$

$$= 0.0725 \times \begin{bmatrix} 1 \\ 7 \\ 2 \\ 3 \end{bmatrix} + 0.586 \times \begin{bmatrix} 1/7 \\ 1 \\ 1/5 \\ 1/3 \end{bmatrix} + 0.124 \times \begin{bmatrix} 1/2 \\ 5 \\ 1 \\ 2 \end{bmatrix} + 0.218 \times \begin{bmatrix} 1/3 \\ 3 \\ 1/2 \\ 1 \end{bmatrix}$$

$$= \begin{bmatrix} 0.291 \\ 2.368 \\ 0.495 \\ 0.879 \end{bmatrix}$$

$0.291 / 0.0725 = 4.014$

$2.368 / 0.586 = 4.041$

$0.495 / 0.124 = 3.992$

$0.879 / 0.218 = 4.032$

$\lambda_{max} = 4.0198$

$C.I. = \frac{\lambda_{max} - n}{n-1} = \frac{4.0198-4}{4-1} = 0.0066$

$CR = \frac{CI}{RI} = \frac{0.0066}{0.9} = 0.00733 < 0.1$

acceptable consistency

Q3.

Solution Advancement priority vectors

$= \begin{bmatrix} 0.2213 \\ 0.0934 \\ 0.6853 \end{bmatrix}$ Training $= \begin{bmatrix} 0.2748 \\ 0.6572 \\ 0.0682 \end{bmatrix}$

题目数据给错了
[0.2064
0.7146
0.0789]

$\begin{bmatrix} 0.2213 & 0.2213 & 0.4545 & 0.2748 \\ 0.0934 & 0.0934 & 0.0909 & 0.6572 \\ 0.6853 & 0.6853 & 0.4545 & 0.0682 \end{bmatrix} \begin{bmatrix} 0.0725 \\ 0.586 \\ 0.124 \\ 0.218 \end{bmatrix}$

$$= \begin{bmatrix} 0.1453 \\ 0.1668 \\ 0.1611 \end{bmatrix}$$

Job B 1st

Job C 2st

Job A 3rd.

[0.253 0.58 0.167]