



i). Between Zero and First Layer:

Edge Weight = User Rating for Specific Business Unit, i.e. $RS1_{(1)}$. **Here, $RSx_{(y)}$** means that the User x rating on Business Unit y .

ii). Between First and Second Layer:

Edge Weight = User Rating for Business Unit + $RAve()$. $RAve()$ calculates the average value for all ratings from the User.

iii). Between Second and Third Layer:

Edge Weight = User Rating for Business Unit + $RAve()$ + $Aux(cate, attr)$. $Aux(cate, attr)$ is a function relative to the Business Category and Attributes.

Zero Layer: User 1;

First Layer: Business Unit $1 \sim i$;

Second Layer: User $2 \sim j$;

Third Layer: Business Unit $i+1$, $i+2$, ...