

## **Objective of this document**

Describe, in a procedural format, how to implement RAG 2017 calculations, including model parameters and method to calculate weights, RAG score and RAG color (main output).

## **Calculation logic**

**\*\*\*\* Gender \*\*\*\***

if Gender = 'Male' then Intercept = +0.0509;  
elseif Gender = 'Female' then Intercept = -0.7368;

**\*\*\*\* Location \*\*\*\***

if Gender = 'Male' and City = 'Dammam' then Location\_weight = +0.44529; else  
if Gender = 'Male' and City = 'Jeddah' then Location\_weight = +0.44529; else  
if Gender = 'Male' and City = 'Riyadh' then Location\_weight = +0.44529; else  
if Gender = 'Male' and City = 'Makkah' then Location\_weight = -0.12251; else  
if Gender = 'Male' and City = 'Medina' then Location\_weight = -0.12251; else  
if Gender = 'Male' and City = 'Hafouf' then Location\_weight = -0.18491; else  
if Gender = 'Male' and City = 'Buraydah' then Location\_weight = -0.18491; else  
if Gender = 'Male' and City = 'Tabuk' then Location\_weight = -0.18491; else  
if Gender = 'Male' and City = 'Jubail' then Location\_weight = -0.18491; else  
if Gender = 'Male' and City = 'Najran' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Abha' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Hail' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Taif' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Al Kharj' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Hafr Al Batin' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Yanbu' then Location\_weight = -0.36871; else  
if Gender = 'Male' and City = 'Arar' then Location\_weight = -0.40361; else  
if Gender = 'Male' and City = 'Jizan' then Location\_weight = -0.40361; else  
if Gender = 'Male' and City = 'Al Baha' then Location\_weight = -0.40361; else  
if Gender = 'Male' and City = 'Qurayyat' then Location\_weight = -0.40361; else  
if Gender = 'Male' and City = 'Sakaka' then Location\_weight = -0.40361; else  
if Gender = 'Female' and City = 'Jeddah' then Location\_weight = +0.04082; else  
if Gender = 'Female' and City = 'Riyadh' then Location\_weight = +0.04082; else  
if Gender = 'Female' and City = 'Makkah' then Location\_weight = -0.03418; else  
if Gender = 'Female' and City = 'Dammam' then Location\_weight = -0.03418; else  
if Gender = 'Female' and City = 'Khobar' then Location\_weight = -0.03418; else  
if Gender = 'Female' and City = 'Medina' then Location\_weight = -0.22348; else  
if Gender = 'Female' and City = 'Tabuk' then Location\_weight = -0.22348; else  
if Gender = 'Female' and City = 'Al Kharj' then Location\_weight = -0.22348; else  
if Gender = 'Female' and City = 'Hafouf' then Location\_weight = -0.22348; else  
if Gender = 'Female' and City = 'Najran' then Location\_weight = -0.22348; else  
if Gender = 'Female' and City = 'Abha' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Taif' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Al Baha' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Arar' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Hafr Al Batin' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Jizan' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Jubail' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Qatif' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Qurayyat' then Location\_weight = -1.29758; else  
if Gender = 'Female' and City = 'Sakaka' then Location\_weight = -1.29758;

**/\*\*\*\*\* JS Motivation \*\*\*\*\*/**

```
if Gender = 'Male' and Motivation = 'Referral' then Motivation_weight = -0.5677; else
if Gender = 'Male' and Motivation = 'Walk-in' then Motivation_weight = +0.1611; else
if Gender = 'Female' and Motivation = 'Referral' then Motivation_weight = -0.91696; else
if Gender = 'Female' and Motivation = 'Walk-in' then Motivation_weight = +0.37214;
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**/\*\*\*\*\* Age \*\*\*\*\*/**

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if Gender = 'Male' and Age at attachment = 17 then Age_weight = +0.12385; else
if Gender = 'Male' and Age at attachment = 18 then Age_weight = +0.10745; else
if Gender = 'Male' and Age at attachment = 19 then Age_weight = +0.09105; else
if Gender = 'Male' and Age at attachment = 20 then Age_weight = +0.07465; else
if Gender = 'Male' and Age at attachment = 21 then Age_weight = +0.05825; else
if Gender = 'Male' and Age at attachment = 22 then Age_weight = +0.04185; else
if Gender = 'Male' and Age at attachment = 23 then Age_weight = +0.02545; else
if Gender = 'Male' and Age at attachment = 24 then Age_weight = +0.00905; else
if Gender = 'Male' and Age at attachment = 25 then Age_weight = -0.00735; else
if Gender = 'Male' and Age at attachment = 26 then Age_weight = -0.02375; else
if Gender = 'Male' and Age at attachment = 27 then Age_weight = -0.04015; else
if Gender = 'Male' and Age at attachment = 28 then Age_weight = -0.05655; else
if Gender = 'Male' and Age at attachment = 29 then Age_weight = -0.07295; else
if Gender = 'Male' and Age at attachment = 30 then Age_weight = -0.08935; else
if Gender = 'Male' and Age at attachment = 31 then Age_weight = -0.10575; else
if Gender = 'Male' and Age at attachment = 32 then Age_weight = -0.12215; else
if Gender = 'Male' and Age at attachment = 33 then Age_weight = -0.13855; else
if Gender = 'Male' and Age at attachment = 34 then Age_weight = -0.15495; else
if Gender = 'Male' and Age at attachment = 35 then Age_weight = -0.17135; else
if Gender = 'Male' and Age at attachment = 36 then Age_weight = -0.18775; else
if Gender = 'Male' and Age at attachment = 37 then Age_weight = -0.20415; else
if Gender = 'Male' and Age at attachment = 38 then Age_weight = -0.22055; else
if Gender = 'Male' and Age at attachment = 39 then Age_weight = -0.23695; else
if Gender = 'Male' and Age at attachment = 40 then Age_weight = -0.25335; else
if Gender = 'Male' and Age at attachment = 41 then Age_weight = -0.26975; else
if Gender = 'Male' and Age at attachment = 42 then Age_weight = -0.28615; else
if Gender = 'Male' and Age at attachment = 43 then Age_weight = -0.30255; else
if Gender = 'Male' and Age at attachment = 44 then Age_weight = -0.31895; else
if Gender = 'Male' and Age at attachment = 45 then Age_weight = -0.33535; else
if Gender = 'Male' and Age at attachment = 46 then Age_weight = -0.35175; else
if Gender = 'Male' and Age at attachment = 47 then Age_weight = -0.36815; else
if Gender = 'Male' and Age at attachment = 48 then Age_weight = -0.38455; else
if Gender = 'Male' and Age at attachment = 49 then Age_weight = -0.40095; else
if Gender = 'Male' and Age at attachment = 50 then Age_weight = -0.41735; else
if Gender = 'Male' and Age at attachment = 51 then Age_weight = -0.43375; else
if Gender = 'Male' and Age at attachment = 52 then Age_weight = -0.45015; else
if Gender = 'Male' and Age at attachment = 53 then Age_weight = -0.46655; else
if Gender = 'Male' and Age at attachment = 54 then Age_weight = -0.48295; else
if Gender = 'Male' and Age at attachment = 55 then Age_weight = -0.49935; else
if Gender = 'Male' and Age at attachment = 56 then Age_weight = -0.51575; else
if Gender = 'Male' and Age at attachment = 57 then Age_weight = -0.53215; else
if Gender = 'Male' and Age at attachment = 58 then Age_weight = -0.54855; else
if Gender = 'Male' and Age at attachment = 59 then Age_weight = -0.56495; else
if Gender = 'Male' and Age at attachment = 60 then Age_weight = -0.58135; else
if Gender = 'Female' and Age at attachment = 17 then Age_weight = +0.25518; else
if Gender = 'Female' and Age at attachment = 18 then Age_weight = +0.23278; else
if Gender = 'Female' and Age at attachment = 19 then Age_weight = +0.21038; else
if Gender = 'Female' and Age at attachment = 20 then Age_weight = +0.18798; else
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if Gender = 'Female' and Age at attachment = 21 then Age\_weight = +0.16558; else  
 if Gender = 'Female' and Age at attachment = 22 then Age\_weight = +0.14318; else  
 if Gender = 'Female' and Age at attachment = 23 then Age\_weight = +0.12078; else  
 if Gender = 'Female' and Age at attachment = 24 then Age\_weight = +0.09838; else  
 if Gender = 'Female' and Age at attachment = 25 then Age\_weight = +0.07598; else  
 if Gender = 'Female' and Age at attachment = 26 then Age\_weight = +0.05358; else  
 if Gender = 'Female' and Age at attachment = 27 then Age\_weight = +0.03118; else  
 if Gender = 'Female' and Age at attachment = 28 then Age\_weight = +0.00878; else  
 if Gender = 'Female' and Age at attachment = 29 then Age\_weight = -0.01362; else  
 if Gender = 'Female' and Age at attachment = 30 then Age\_weight = -0.03602; else  
 if Gender = 'Female' and Age at attachment = 31 then Age\_weight = -0.05842; else  
 if Gender = 'Female' and Age at attachment = 32 then Age\_weight = -0.08082; else  
 if Gender = 'Female' and Age at attachment = 33 then Age\_weight = -0.10322; else  
 if Gender = 'Female' and Age at attachment = 34 then Age\_weight = -0.12562; else  
 if Gender = 'Female' and Age at attachment = 35 then Age\_weight = -0.14802; else  
 if Gender = 'Female' and Age at attachment = 36 then Age\_weight = -0.17042; else  
 if Gender = 'Female' and Age at attachment = 37 then Age\_weight = -0.19282; else  
 if Gender = 'Female' and Age at attachment = 38 then Age\_weight = -0.21522; else  
 if Gender = 'Female' and Age at attachment = 39 then Age\_weight = -0.23762; else  
 if Gender = 'Female' and Age at attachment = 40 then Age\_weight = -0.26002; else  
 if Gender = 'Female' and Age at attachment = 41 then Age\_weight = -0.28242; else  
 if Gender = 'Female' and Age at attachment = 42 then Age\_weight = -0.30482; else  
 if Gender = 'Female' and Age at attachment = 43 then Age\_weight = -0.32722; else  
 if Gender = 'Female' and Age at attachment = 44 then Age\_weight = -0.34962; else  
 if Gender = 'Female' and Age at attachment = 45 then Age\_weight = -0.37202; else  
 if Gender = 'Female' and Age at attachment = 46 then Age\_weight = -0.39442; else  
 if Gender = 'Female' and Age at attachment = 47 then Age\_weight = -0.41682; else  
 if Gender = 'Female' and Age at attachment = 48 then Age\_weight = -0.43922; else  
 if Gender = 'Female' and Age at attachment = 49 then Age\_weight = -0.46162; else  
 if Gender = 'Female' and Age at attachment = 50 then Age\_weight = -0.48402; else  
 if Gender = 'Female' and Age at attachment = 51 then Age\_weight = -0.50642; else  
 if Gender = 'Female' and Age at attachment = 52 then Age\_weight = -0.52882; else  
 if Gender = 'Female' and Age at attachment = 53 then Age\_weight = -0.55122; else  
 if Gender = 'Female' and Age at attachment = 54 then Age\_weight = -0.57362; else  
 if Gender = 'Female' and Age at attachment = 55 then Age\_weight = -0.59602; else  
 if Gender = 'Female' and Age at attachment = 56 then Age\_weight = -0.61842; else  
 if Gender = 'Female' and Age at attachment = 57 then Age\_weight = -0.64082; else  
 if Gender = 'Female' and Age at attachment = 58 then Age\_weight = -0.66322; else  
 if Gender = 'Female' and Age at attachment = 59 then Age\_weight = -0.68562; else  
 if Gender = 'Female' and Age at attachment = 60 then Age\_weight = -0.70802;

**/\*\*\*\*\* Education \*\*\*\*\*/**

if Gender = 'Male' and Education = 'Illiterate' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Literate' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Primary school' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Secondary school' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'High school' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Diploma' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Higher diploma' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Bachelor' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Master' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Doctorate' then Education\_weight = 0; else  
 if Gender = 'Male' and Education = 'Fellowship' then Education\_weight = 0; else  
 if Gender = 'Female' and Education = 'Illiterate' then Education\_weight = -0.19585; else  
 if Gender = 'Female' and Education = 'Literate' then Education\_weight = -0.02115; else

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if Gender = 'Female' and Education = 'Primary school' then Education_weight = +0.35035; else
if Gender = 'Female' and Education = 'Secondary school' then Education_weight = +0.17455; else
if Gender = 'Female' and Education = 'High school' then Education_weight = +0.28295; else
if Gender = 'Female' and Education = 'Diploma' then Education_weight = -0.05175; else
if Gender = 'Female' and Education = 'Higher diploma' then Education_weight = -0.12735; else
if Gender = 'Female' and Education = 'Bachelor' then Education_weight = -0.17415; else
if Gender = 'Female' and Education = 'Master' then Education_weight = -0.04345; else
if Gender = 'Female' and Education = 'Doctorate' then Education_weight = -0.04345; else
if Gender = 'Female' and Education = 'Fellowship' then Education_weight = -0.04345;

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**/\*\*\*\*\* work experience \*\*\*\*\*/**

```

if Gender = 'Male' and Work exp. (years) = '0' then Work_weight = -0.02124; else
if Gender = 'Male' and Work exp. (years) = '1' then Work_weight = 0.13206; else
if Gender = 'Male' and Work exp. (years) = '2' then Work_weight = 0.20406; else
if Gender = 'Male' and Work exp. (years) = '3' then Work_weight = 0.26246; else
if Gender = 'Male' and Work exp. (years) = '4' then Work_weight = 0.25956; else
if Gender = 'Male' and Work exp. (years) = '5' then Work_weight = 0.18606; else
if Gender = 'Male' and Work exp. (years) = '6' then Work_weight = 0.10346; else
if Gender = 'Male' and Work exp. (years) => '7' then Work_weight = 0.00526; else
if Gender = 'Female' and Work exp. (years) = '0' then Work_weight = -0.04843; else
if Gender = 'Female' and Work exp. (years) = '1' then Work_weight = 0.49347; else
if Gender = 'Female' and Work exp. (years) = '2' then Work_weight = 0.56087; else
if Gender = 'Female' and Work exp. (years) = '3' then Work_weight = 0.72817; else
if Gender = 'Female' and Work exp. (years) = '4' then Work_weight = 0.57677; else
if Gender = 'Female' and Work exp. (years) = '5' then Work_weight = 0.41407; else
if Gender = 'Female' and Work exp. (years) => '6' then Work_weight = 0.17547;

```

**/\*\*\*\*\* Weight sum \*\*\*\*\*/**

```

Sum_weights = Intercept + Location_weight + Motivation_weight + Age_weight + Education_weight + Work_weight;

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**/\*\*\*\*\* RAG score \*\*\*\*\*/**

```

RAG_SCORE = EXP(Sum_weights)/(1 + EXP(Sum_weights));

```

**/\*\*\*\*\* RAG color \*\*\*\*\*/**

```

if RAG_SCORE >= 0.511 then RAG_COLOR = 'Green';
else if RAG_SCORE >= 0.354 then RAG_COLOR = 'Amber';
else RAG_COLOR = 'Red';

```