



Key	Name	Constraints
Pop	Popularity	High, Medium, Low
A	Ability	High, Medium, Low
S	Support	Majority, Minority, Medium
MPO	My Personal Opinion	Yes, No
WD	Gets the Work done	Yes, No
RO	Gives respect to Opinion	Yes, No
WE	Previous Works engaged	Yes, No
L	Location	A, B
C1	Candidate 1	Yes, No
C2	Candidate 2	Yes, No
C3	Candidate 3	Yes, No
C4	Candidate 4	Yes, No

Conditional Probability Tables:

Popularity:

Pop	High	Medium	Low
P(Pop)	0.5	0.3	0.2

Ability:

A	High	Medium	Low
P(A)	0.6	0.3	0.1

Support:

S	Majority	Medium	Minority
P(S)	0.4	0.3	0.3

My Personal Opinion:

MPO	Yes	No
P(MPO)	0.5	0.5

Manifesto:

L	A	B
P(L)	0.7	0.3

Gets the Work done:

Pop	A	WD.Yes	WD.No
High	High	0.9	0.1
High	Medium	0.8	0.2
High	Low	0.7	0.3
Medium	High	0.8	0.2
Medium	Medium	0.7	0.3
Medium	Low	0.6	0.4

Low	High	0.8	0.2
Low	Medium	0.6	0.4
Low	Low	0.4	0.6

Gives respect to Opinion:

S	Pop	A	RO.Yes	RO.No
Majority	High	High	0.5	0.5
Majority	High	Medium	0.6	0.4
Majority	High	Low	0.5	0.5
Majority	Medium	High	0.5	0.5
Majority	Medium	Medium	0.5	0.5
Majority	Medium	Low	0.6	0.4
Majority	Low	High	0.5	0.5
Majority	Low	Medium	0.6	0.4
Majority	Low	Low	0.6	0.4
Medium	High	High	0.7	0.3
Medium	High	Medium	0.7	0.3
Medium	High	Low	0.8	0.2
Medium	Medium	High	0.8	0.2
Medium	Medium	Medium	0.7	0.3
Medium	Medium	Low	0.8	0.2
Medium	Low	High	0.7	0.3
Medium	Low	Medium	0.8	0.2
Medium	Low	Low	0.9	0.1
Minority	High	High	0.7	0.3

Minority	High	Medium	0.7	0.3
Minority	High	Low	0.7	0.3
Minority	Medium	High	0.8	0.2
Minority	Medium	Medium	0.7	0.3
Minority	Medium	Low	0.7	0.3
Minority	Low	High	0.8	0.2
Minority	Low	Medium	0.9	0.1
Minority	Low	Low	0.9	0.1

Previous Works Engaged:

S	A	WE.Yes	WE.No
Majority	High	0.9	0.1
Majority	Medium	0.8	0.2
Majority	Low	0.9	0.1
Medium	High	0.8	0.2
Medium	Medium	0.8	0.2
Medium	Low	0.7	0.3
Minority	High	0.7	0.3
Minority	Medium	0.6	0.4
Minority	Low	0.5	0.5

Candidate 1 :

MPO	WD	RO	WE	L	C1(Yes)
Yes	Yes	Yes	Yes	A	0.8
Yes	Yes	Yes	Yes	B	0.5
Yes	Yes	Yes	No	A	0.5

Yes	Yes	Yes	No	B	0.3
Yes	Yes	No	Yes	A	0.6
Yes	Yes	No	Yes	B	0.4
Yes	Yes	No	No	A	0.4
Yes	Yes	No	No	B	0.3
Yes	No	Yes	Yes	A	0.7
Yes	No	Yes	Yes	B	0.5
Yes	No	Yes	No	A	0.4
Yes	No	Yes	No	B	0.3
Yes	No	No	Yes	A	0.4
Yes	No	No	Yes	B	0.2
Yes	No	No	No	A	0.3
Yes	No	No	No	B	0.2
No	Yes	Yes	Yes	A	0.7
No	Yes	Yes	Yes	B	0.5
No	Yes	Yes	No	A	0.6
No	Yes	Yes	No	B	0.4
No	Yes	No	Yes	A	0.5
No	Yes	No	Yes	B	0.3
No	Yes	No	No	A	0.3
No	Yes	No	No	B	0.2
No	No	Yes	Yes	A	0.5
No	No	Yes	Yes	B	0.4
No	No	Yes	No	A	0.3
No	No	Yes	No	B	0.2

No	No	No	Yes	A	0.4
No	No	No	Yes	B	0.3
No	No	No	No	A	0.2
No	No	No	No	B	0.1

Candidate 2 :

MPO	WD	RO	WE	L	C2(Yes)
Yes	Yes	Yes	Yes	A	0.8
Yes	Yes	Yes	Yes	B	0.6
Yes	Yes	Yes	No	A	0.7
Yes	Yes	Yes	No	B	0.5
Yes	Yes	No	Yes	A	0.7
Yes	Yes	No	Yes	B	0.5
Yes	Yes	No	No	A	0.6
Yes	Yes	No	No	B	0.4
Yes	No	Yes	Yes	A	0.7
Yes	No	Yes	Yes	B	0.6
Yes	No	Yes	No	A	0.5
Yes	No	Yes	No	B	0.4
Yes	No	No	Yes	A	0.5
Yes	No	No	Yes	B	0.4
Yes	No	No	No	A	0.3
Yes	No	No	No	B	0.2
No	Yes	Yes	Yes	A	0.7
No	Yes	Yes	Yes	B	0.5

No	Yes	Yes	No	A	0.5
No	Yes	Yes	No	B	0.4
No	Yes	No	Yes	A	0.6
No	Yes	No	Yes	B	0.4
No	Yes	No	No	A	0.4
No	Yes	No	No	B	0.3
No	No	Yes	Yes	A	0.6
No	No	Yes	Yes	B	0.4
No	No	Yes	No	A	0.4
No	No	Yes	No	B	0.3
No	No	No	Yes	A	0.3
No	No	No	Yes	B	0.2
No	No	No	No	A	0.2
No	No	No	No	B	0.1

Candidate 3 :

MPO	WD	RO	WE	L	C3(Yes)
Yes	Yes	Yes	Yes	A	0.7
Yes	Yes	Yes	Yes	B	0.8
Yes	Yes	Yes	No	A	0.6
Yes	Yes	Yes	No	B	0.7
Yes	Yes	No	Yes	A	0.6
Yes	Yes	No	Yes	B	0.7
Yes	Yes	No	No	A	0.5
Yes	Yes	No	No	B	0.6

Yes	No	Yes	Yes	A	0.7
Yes	No	Yes	Yes	B	0.7
Yes	No	Yes	No	A	0.6
Yes	No	Yes	No	B	0.6
Yes	No	No	Yes	A	0.4
Yes	No	No	Yes	B	0.5
Yes	No	No	No	A	0.3
Yes	No	No	No	B	0.4
No	Yes	Yes	Yes	A	0.6
No	Yes	Yes	Yes	B	0.7
No	Yes	Yes	No	A	0.5
No	Yes	Yes	No	B	0.6
No	Yes	No	Yes	A	0.6
No	Yes	No	Yes	B	0.7
No	Yes	No	No	A	0.3
No	Yes	No	No	B	0.4
No	No	Yes	Yes	A	0.5
No	No	Yes	Yes	B	0.6
No	No	Yes	No	A	0.2
No	No	Yes	No	B	0.3
No	No	No	Yes	A	0.2
No	No	No	Yes	B	0.2
No	No	No	No	A	0.1
No	No	No	No	B	0.2

Candidate 4 :

MPO	WD	RO	WE	L	C4(Yes)
Yes	Yes	Yes	Yes	A	0.9
Yes	Yes	Yes	Yes	B	0.6
Yes	Yes	Yes	No	A	0.7
Yes	Yes	Yes	No	B	0.5
Yes	Yes	No	Yes	A	0.7
Yes	Yes	No	Yes	B	0.5
Yes	Yes	No	No	A	0.6
Yes	Yes	No	No	B	0.4
Yes	No	Yes	Yes	A	0.7
Yes	No	Yes	Yes	B	0.5
Yes	No	Yes	No	A	0.6
Yes	No	Yes	No	B	0.4
Yes	No	No	Yes	A	0.5
Yes	No	No	Yes	B	0.3
Yes	No	No	No	A	0.4
Yes	No	No	No	B	0.2
No	Yes	Yes	Yes	A	0.6
No	Yes	Yes	Yes	B	0.4
No	Yes	Yes	No	A	0.5
No	Yes	Yes	No	B	0.4
No	Yes	No	Yes	A	0.5
No	Yes	No	Yes	B	0.4
No	Yes	No	No	A	0.4

No	Yes	No	No	B	0.3
No	No	Yes	Yes	A	0.5
No	No	Yes	Yes	B	0.3
No	No	Yes	No	A	0.4
No	No	Yes	No	B	0.2
No	No	No	Yes	A	0.3
No	No	No	Yes	B	0.2
No	No	No	No	A	0.2
No	No	No	No	B	0.1

Justifications:

1. The candidates mentioned here are anonymous, and here the factors mentioned are Popularity, Ability, Support, My Personal Opinion, Gets the work done, gives respect to Opinions, previous work done, Manifesto.
2. The distribution of the voters and the place of residence of the candidates has also been taken into account. If a candidate lives closer to the majority of the population(say between A and B) it's likely that he'll be more popular because of locality and do better.
3. Judgement of the voters in general has been given attention to. If a candidate gives respect to public opinion and is known to get the work done, the probability for that candidate shoots up.
4. Previous experiences of the candidate also matters and the better the past work, the higher the chances of that candidate for winning increases.
5. We assume that the candidate 1 lives in A, far from B; 2 lives in between; 3 in B, far from A and 4 in between but closer to A. The probabilities are adjusted accordingly

Query Structure :

$P(p(X) | X)$

Where X = Candidate 1 and $p(X)$ = Support

$P(\text{Support} = \text{Majority} | \text{Candidate 1} = \text{Yes}) \sim 0.55$