#APPENDIX 1: Small candidate pool example to demonstrate entire model functionality

```
************************************
** Items available to Rate and Tag: **
************************************
```
0: Ada
1: Alan
2: Mark

Which of the above items would you like to rate and tag?
Please enter the number of the item here: 0

Please rate Ada on a scale of 0-10: 9

Please tag Ada with any relevant words or phrases.
Type the tag and hit Enter to add it. Type 'exit' and hit Enter to submit your tags:

brilliant
woman
diligent
exit

Summary:
You gave Ada the following rating: 9.0/10.
You also gave Ada the following tags:
· brilliant
· woman
· diligent

Enter 0 to stop, or 1 to continue: 1


```
************************************
** Items available to Rate and Tag: **
************************************
```
1: Alan
2: Mark

Which of the above items would you like to rate and tag?
Please enter the number of the item here: 2

Please rate Mark on a scale of 0–10: 4

Please tag Mark with any relevant words or phrases.
Type the tag and hit Enter to add it. Type 'exit' and hit Enter to submit your tags:

reptilian
cunning
diligent
exit

Summary:
You gave Mark the following rating: 4.0/10.
You also gave Mark the following tags:
· reptilian
· cunning
· diligent

Enter 0 to stop, or 1 to continue: 1

****
** Items available to Rate and Tag: **
****
1: Alan

Which of the above items would you like to rate and tag?
Please enter the number of the item here: 1

Please rate Alan on a scale of 0–10: 8

Please tag Alan with any relevant words or phrases.
Type the tag and hit Enter to add it. Type 'exit' and hit Enter to submit your tags:

brilliant
man
enigmatic
exit

Summary:
You gave Alan the following rating: 8.0/10.

You also gave Alan the following tags:
· brilliant
· man
· enigmatic

Enter 0 to stop, or 1 to continue: 0

All items rated & tagged.
Ratings span from 4.0 to 9.0.
Here are all tags and their affiliated items:
• enigmatic: ['Alan']
• reptilian: ['Mark']
• man: ['Alan']
• woman: ['Ada']
• brilliant: ['Ada', 'Alan']
• diligent: ['Ada', 'Mark']
• cunning: ['Mark']

Press Enter to continue

****
** Summary of User Interests **
****
(Utility): Statement
0.0: You have no statistically significant preference for candidates tagged as 'enigmatic.' Example: Alan
0.0: You have no statistically significant preference for candidates tagged as 'reptilian.' Example: Mark
0.0: You have no statistically significant preference for candidates tagged as 'man.' Example: Alan
0.0: You have no statistically significant preference for candidates tagged as 'woman.' Example: Ada
0.0: You have no statistically significant preference for candidates tagged as 'brilliant.' Example: Alan
0.0: You have no statistically significant preference for candidates tagged as 'diligent.' Example: Mark
0.0: You have no statistically significant preference for candidates tagged as 'cunning.' Example: Mark

Press Enter to continue

****
** Candidate Recommendations **
****
Rank: Candidate (Likelihood)
1: Ada (−0.0)
2: Alan (−0.0)
3: Mark (−0.0)

APPENDIX 2: Experimental Output (No data collection routine)

All items rated & tagged.
Ratings span from 2.8 to 9.7.
Here are all tags and their affiliated items:
• Good GPA: ['Liam', 'Olivia', 'Emma', 'Oliver', 'Elijah', 'William', 'Sophia', 'James', 'Isabella', 'Lucas', 'Henry', 'Evelyn', 'Alexander', 'Harper', 'David', 'Stella', 'Maximilian', 'Lilly', 'Mohamed', 'Maria']
• Little work experience: ['Liam', 'Noah', 'Oliver', 'Ava', 'Elijah', 'Charlotte', 'William', 'Sophia', 'Amelia', 'Benjamin', 'Mia', 'Evelyn', 'Harper', 'John', 'Mary Katherine', 'Kayla', 'Nathan', 'Stella', 'Lilly', 'Maria']
• Bad GPA: ['Noah', 'Ava', 'Charlotte', 'Amelia', 'Benjamin', 'Mia', 'John', 'Mary Katherine', 'Kayla', 'Nathan']
• Volunteer: ['Liam', 'Oliver', 'Elijah', 'William', 'Sophia', 'Evelyn', 'Harper', 'Stella', 'Lilly', 'Maria']
• Purdue grad: ['Olivia', 'Emma', 'Oliver', 'Elijah', 'William', 'James', 'Isabella', 'David', 'Lilly', 'Maria']
• Grad degree: ['Liam', 'Sophia', 'Lucas', 'Henry', 'Evelyn', 'Alexander', 'Harper', 'Stella', 'Maximilian', 'Mohamed']
• From Indiana: ['Olivia', 'Emma', 'Oliver', 'Elijah', 'William', 'James', 'Isabella', 'Lucas', 'Henry', 'Alexander', 'David', 'Maximilian', 'Lilly', 'Mohamed', 'Maria']

Press Enter to continue

****
** Summary of User Interests **
****
(Utility): Statement
0.55: You strongly like candidates tagged with 'Grad degree.' Example: Liam
0.38: You strongly like candidates tagged with 'Good GPA.' Example: Liam
0.28: You like candidates tagged as 'Little work experience' unless they are also tagged as 'Bad GPA.' Example: Mia
0.0: You like candidates tagged with 'Little work experience.' Example: Liam
0.0: You dislike candidates tagged with 'Bad GPA.' Example: Ava
0.0: You strongly like candidates tagged with 'Volunteer.' Example: Liam
0.0: You like candidates tagged with 'Purdue grad.' Example: Oliver
0.0: You like candidates tagged with 'From Indiana.' Example: Alexander
0.0: You like candidates tagged as 'Good GPA,' especially if also tagged as 'Little work experience.' Example: Liam
0.0: You like candidates tagged as 'Good GPA,' especially if also tagged as 'Volunteer.' Example: Liam
0.0: You like candidates tagged as 'Good GPA,' especially if they are not also tagged as 'Purdue grad.' Example: Liam
0.0: You like candidates tagged as 'Good GPA,' especially if also tagged as 'Grad degree.' Example: Liam
0.0: You like candidates tagged as 'Good GPA,' especially if they are not also tagged as 'From Indiana.' Example: Liam
0.0: You like candidates tagged as 'Little work experience,' especially if also tagged as 'Good GPA.' Example: Liam
0.0: You like candidates tagged as 'Little work experience,' especially if also tagged as 'Volunteer.' Example: Liam

Press Enter to continue

```
*****************************
** Candidate Recommendations **
*****************************
```

Rank: Candidate (Likelihood)
1: Liam (−2.02)
2: Sophia (−2.02)
3: Evelyn (−2.02)
4: Harper (−2.02)
5: Stella (−2.02)
6: Oliver (−3.02)
7: Elijah (−3.02)
8: William (−3.02)
9: Lilly (−3.02)
10: Maria (−3.02)
11: Lucas (−3.7)
12: Henry (−3.7)
13: Alexander (−3.7)
14: Maximilian (−3.7)
15: Mohamed (−3.7)
16: Olivia (−5.05)
17: Emma (−5.05)
18: James (−5.05)
19: Isabella (−5.05)
20: David (−5.05)
21: Noah (−6.6)
22: Ava (−6.6)
23: Charlotte (−6.6)
24: Amelia (−6.6)
25: Benjamin (−6.6)
26: Mia (−6.6)
27: John (−6.6)
28: Mary Katherine (−6.6)
29: Kayla (−6.6)
30: Nathan (−6.6)

#APPENDIX 3: Candidate Generator example that I used for the experiment. Shows semi-randomly assigned ranking and tags for each candidate. At the bottom are printouts of the candidate-tag and candidate-rating dictionaries that can be copied directly into the main file to skip the data collection process.

- Liam (0.44): ['Good GPA', 'Purdue grad', 'From Indiana']
- Olivia (-0.28): ['Bad GPA', 'Little work experience']
- Noah (0.43): ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer']
- Emma (0.37): ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer']
- Oliver (0.4): ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer']
- Ava (0.68): ['Good GPA', 'Grad degree', 'From Indiana']
- Elijah (0.7): ['Good GPA', 'Grad degree', 'From Indiana']
- Charlotte (0.77): ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer']
- William (0.45): ['Good GPA', 'Purdue grad', 'From Indiana']
- Sophia (-0.22): ['Bad GPA', 'Little work experience']
- James (0.88): ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer']
- Amelia (-0.34): ['Bad GPA', 'Little work experience']
- Benjamin (-0.39): ['Bad GPA', 'Little work experience']
- Isabella (0.44): ['Good GPA', 'Purdue grad', 'From Indiana']
- Lucas (0.48): ['Good GPA', 'Purdue grad', 'From Indiana']
- Mia (0.84): ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer']
- Henry (-0.47): ['Bad GPA', 'Little work experience']
- Evelyn (-0.36): ['Bad GPA', 'Little work experience']
- Alexander (-0.21): ['Bad GPA', 'Little work experience']
- Harper (0.4): ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer']
- John (0.88): ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer']
- Mary Katherine (0.36): ['Good GPA', 'Purdue grad', 'From Indiana']
- David (-0.29): ['Bad GPA', 'Little work experience']
- Kayla (0.97): ['Good GPA', 'Grad degree', 'From Indiana']
- Nathan (0.27): ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer']
- Stella (-0.41): ['Bad GPA', 'Little work experience']
- Maximilian (0.6): ['Good GPA', 'Grad degree', 'From Indiana']
- Lilly (0.64): ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer']
- Mohamed (-0.3): ['Bad GPA', 'Little work experience']
- Maria (0.75): ['Good GPA', 'Grad degree', 'From Indiana']

{'Liam': ['Good GPA', 'Purdue grad', 'From Indiana'], 'Olivia': ['Bad GPA', 'Little work experience'], 'Noah': ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer'], 'Emma': ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer'], 'Oliver': ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer'], 'Ava': ['Good GPA', 'Grad degree', 'From Indiana'], 'Elijah': ['Good GPA', 'Grad degree', 'From Indiana'], 'Charlotte': ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer'], 'William': ['Good GPA', 'Purdue grad', 'From Indiana'], 'Sophia': ['Bad GPA', 'Little work experience'], 'James': ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer'], 'Amelia': ['Bad GPA', 'Little work experience'], 'Benjamin': ['Bad GPA', 'Little work experience'], 'Isabella': ['Good GPA', 'Purdue grad', 'From Indiana'], 'Lucas': ['Good GPA', 'Purdue grad', 'From Indiana'], 'Mia': ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer'], 'Henry': ['Bad GPA', 'Little work experience'], 'Evelyn': ['Bad GPA', 'Little work experience'], 'Alexander': ['Bad GPA', 'Little work experience'], 'Harper': ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer'], 'John': ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer'], 'Mary Katherine': ['Good GPA', 'Purdue grad', 'From Indiana'], 'David': ['Bad

GPA', 'Little work experience'], 'Kayla': ['Good GPA', 'Grad degree', 'From Indiana'], 'Nathan': ['Good GPA', 'Purdue grad', 'From Indiana', 'Little work experience', 'Volunteer'], 'Stella': ['Bad GPA', 'Little work experience'], 'Maximilian': ['Good GPA', 'Grad degree', 'From Indiana'], 'Lilly': ['Good GPA', 'Grad degree', 'Little work experience', 'Volunteer'], 'Mohamed': ['Bad GPA', 'Little work experience'], 'Maria': ['Good GPA', 'Grad degree', 'From Indiana']}

{'Liam': 0.44358368416355587, 'Olivia': -0.27988133817839217, 'Noah': 0.430489636033089, 'Emma': 0.36719114003628667, 'Oliver': 0.4047265259156849, 'Ava': 0.6831010678169164, 'Elijah': 0.6998207343244632, 'Charlotte': 0.7720203142840736, 'William': 0.44875695202774524, 'Sophia': -0.22123036285055542, 'James': 0.8845763961894895, 'Amelia': -0.33799391049934896, 'Benjamin': -0.3885957716399948, 'Isabella': 0.4443356411182752, 'Lucas': 0.48417003062387154, 'Mia': 0.8358934753065875, 'Henry': -0.4738032590730462, 'Evelyn': -0.36296913599555236, 'Alexander': -0.21476460283564114, 'Harper': 0.4010511329842069, 'John': 0.8765422836471048, 'Mary Katherine': 0.3590006324184862, 'David': -0.2932428416196154, 'Kayla': 0.9653948491937058, 'Nathan': 0.2667790999883454, 'Stella': -0.40596757718490956, 'Maximilian': 0.6044097564525213, 'Lilly': 0.6447741599252006, 'Mohamed': -0.297786188730883, 'Maria': 0.7464753754548834}