

# Visualization of Music Plagiarism: Analysis and Evaluation

The objective of this study is to evaluate whether visualization can assist people in understanding similarities among music composition in order to discover plagiarism. We are mainly interested in gaining perceptions about your overall experience when testing four different types of visualization.

We do not collect personal data and all submitted information will remain confidential. Our study is performed complying with ethical principles, and also according with academic, national, international and EU legislation:

- “Regolamento di attuazione delle norme in materia di trattamento dei dati personali”  
[http://www.unisa.it/uploads/2890/reg.\\_privacy.pdf](http://www.unisa.it/uploads/2890/reg._privacy.pdf)
- “Data Protection Code - Decreto Legislativo n. 196/2003”  
[http://www.garanteprivacy.it/web/guest/home\\_en/italian-legislation](http://www.garanteprivacy.it/web/guest/home_en/italian-legislation)
- “EU’s Data Protection Directive” <http://ec.europa.eu/justice/data-protection/>.

Thanks for your time and for your cooperation.

Dipartimento di Informatica  
Università degli Studi di Salerno  
Fisciano (SA), ITALY

---

---

ID:

---

## Preliminary Survey

### Demographic Information

1. Age:

---

2. Gender:

- ☐ Female
- ☐ Male

3. Highest educational level:

- ☐ Primary
- ☐ High School
- ☐ Bachelor degree
- ☐ Master degree
- ☐ Conservatory
- ☐ Other: \_\_\_\_\_

4. Educational/academic field study:

- ☐ Computer Science
- ☐ Engineering
- ☐ Mathematics
- ☐ Chemistry
- ☐ Physics
- ☐ Economics
- ☐ Law
- ☐ Literature
- ☐ Other: \_\_\_\_\_

## Music experience

5. How do you consider your experience with music?

Inexpert  
☐

Beginner  
☐

Competent  
☐

Advanced  
☐

Expert  
☐

6. How often do you listen to music?

Never  
☐

Rarely  
☐

Sometimes  
☐

Often  
☐

Always  
☐

7. How do you rate your ability in identifying music songs simply listening to it?

Very poor  
☐

Poor  
☐

Fair  
☐

Good  
☐

Very good  
☐

8. Do you play a musical instrument?

- ☐ Yes
- ☐ No

9. If you selected *Yes* to the previous question, can you please specify which instrument do you play?

---

---

---

---

10. Are you enrolled in a Music Conservatory?

- ☐ Yes
- ☐ No

## General Information

11. Do you have familiarity with software tools that visualize music similarity?

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5

12. Have you ever used tools visualize music similarity?

- ☐ Yes
- ☐ No

13. If you selected *Yes* to the previous question, can you please specify which tools do you used?

---

---

---

---

14. Have you ever used tools visualize music plagiarism?

- ☐ Yes
- ☐ No

15. If you selected *Yes* to the previous question, can you please specify which tools do you used?

---

---

---

---

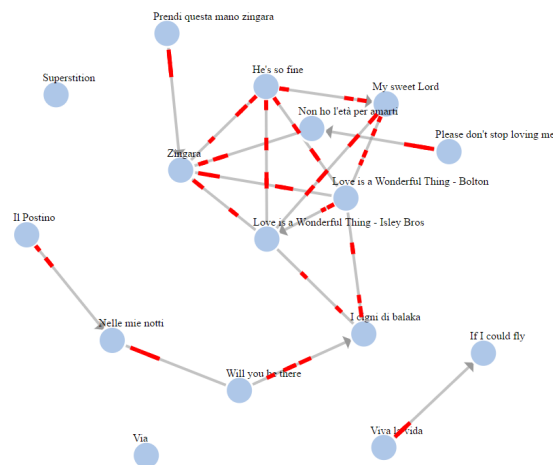
16. How do you consider your experience with graph theory?

Inexpert	Beginner	Competent	Advanced	Expert
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Summary Survey

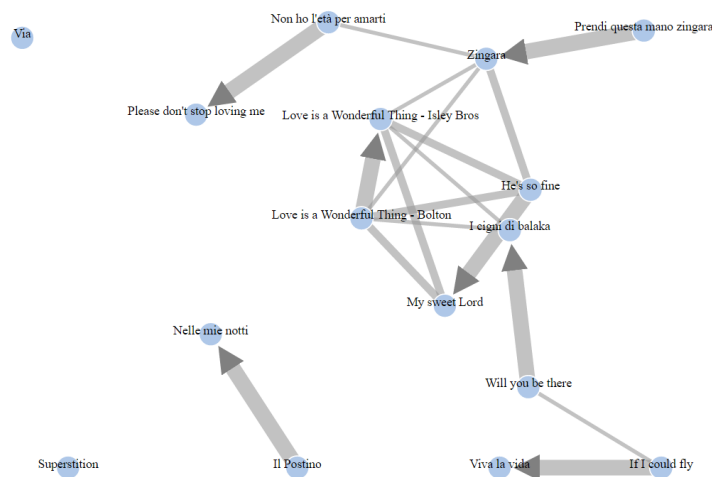
17. Overall, how much do you *like* these visualizations?

a) *Viz1*



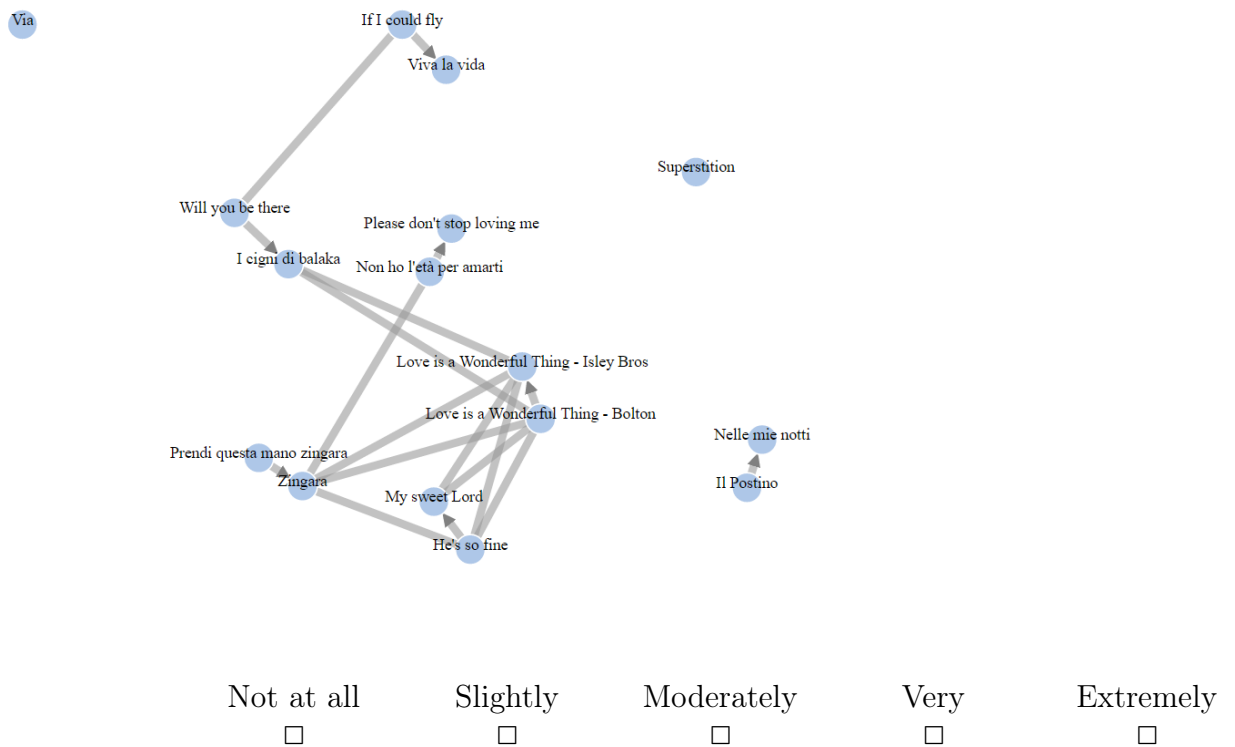
Not at all ☐ Slightly ☐ Moderately ☐ Very ☐ Extremely ☐

b) *Viz2*

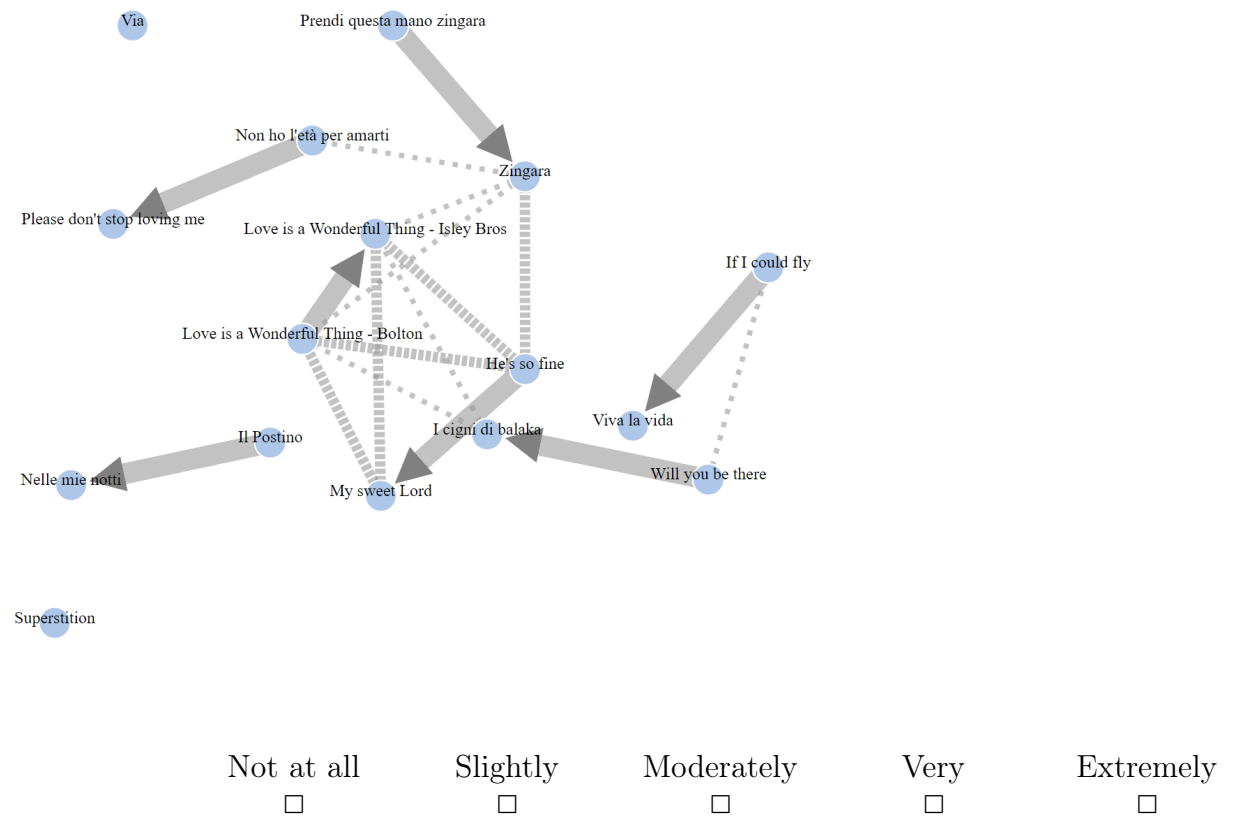


Not at all ☐ Slightly ☐ Moderately ☐ Very ☐ Extremely ☐

c) *Viz3*

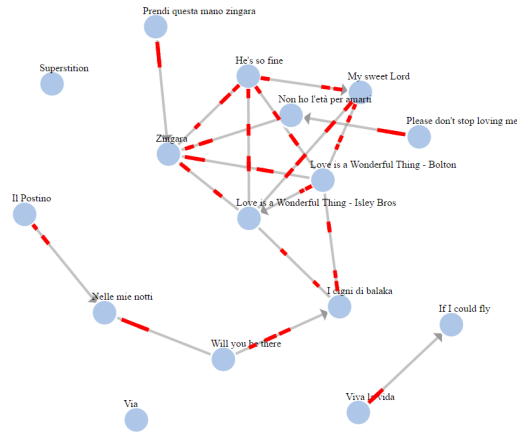


c) *Viz4*



18. Overall, how much *useful* do you consider these visualizations in understanding plagiarism?

a) *Viz1*



Not useful at  
all  
☐

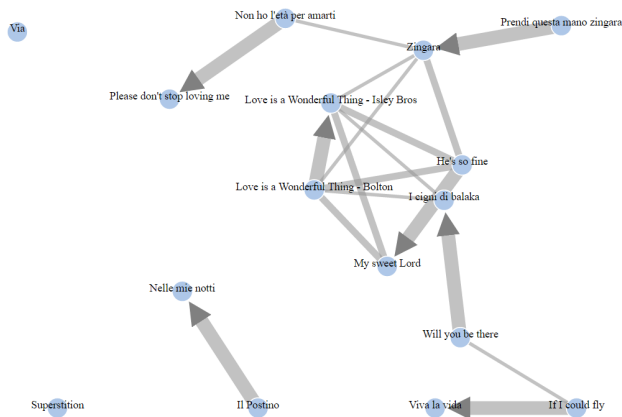
Slightly  
useful  
☐

Moderately  
useful  
☐

Very useful  
☐

Extremely  
useful  
☐

b) *Viz2*



Not useful at  
all  
☐

Slightly  
useful  
☐

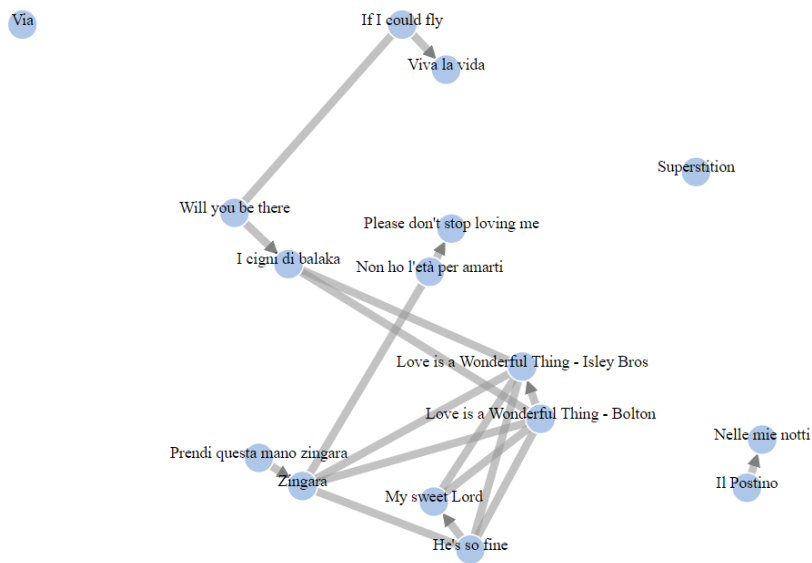
Moderately  
useful  
☐

Very useful  
☐

Extremely  
useful  
☐



c) *Viz3*



Not useful at  
all

☐

Slightly  
useful

☐

Moderately  
useful

☐

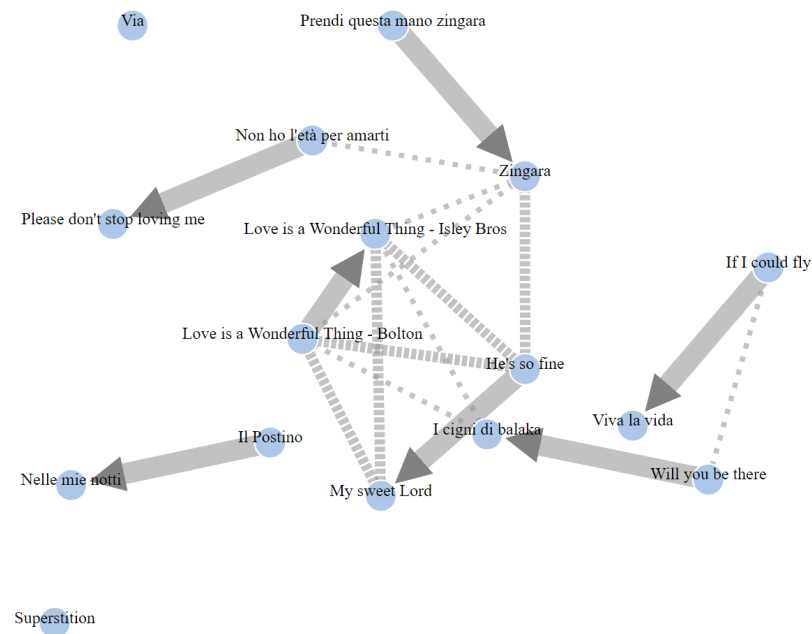
Very useful

1

Extremely  
useful

☐

c) *Viz4*



Not at all

☐

Slightly

☐

Moderately

☐

Very

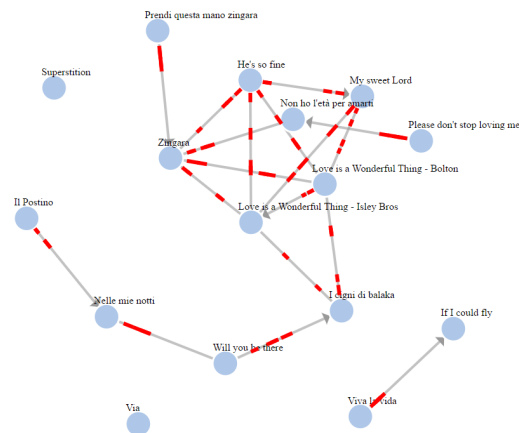
5

Extremely

☐

19. Overall, how much *intuitive* do you consider these visualizations?

a) *Viz1*



Not intuitive  
at all  
☐

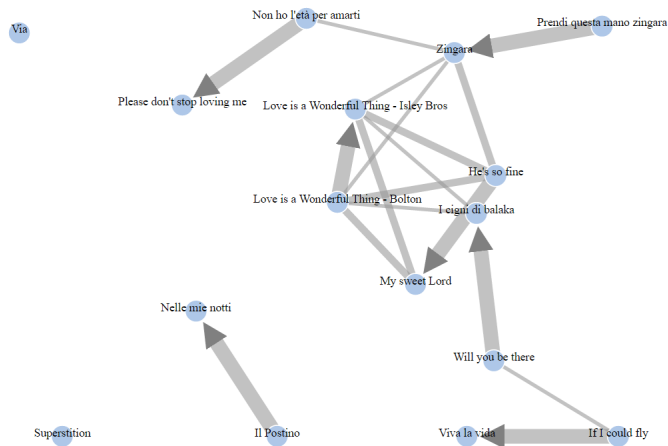
Slightly  
intuitive  
☐

Moderately  
intuitive  
☐

Very  
intuitive  
☐

Extremely  
intuitive  
☐

b) *Viz2*



Not intuitive  
at all  
☐

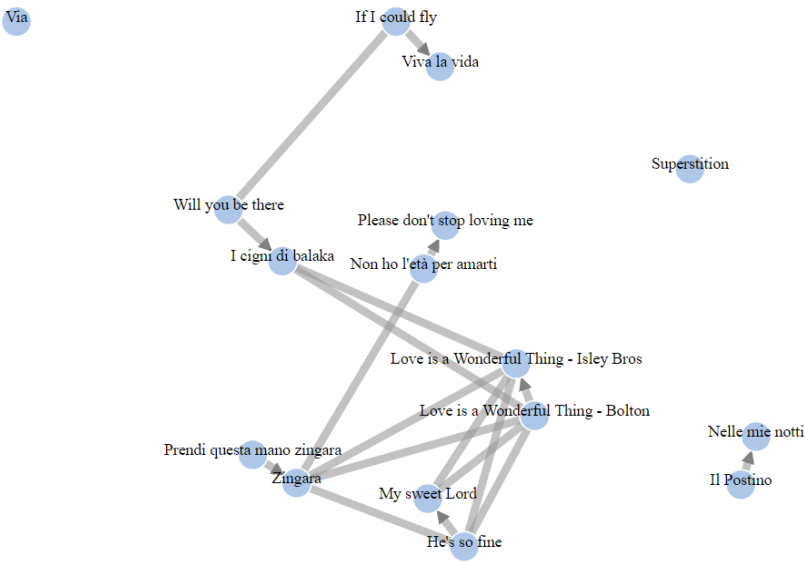
Slightly  
intuitive  
☐

Moderately  
intuitive  
☐

Very  
intuitive  
☐

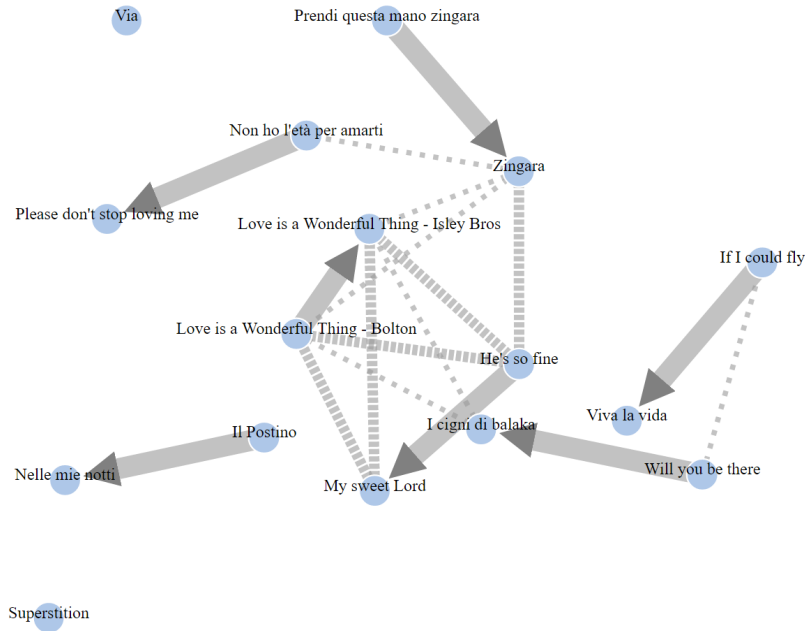
Extremely  
intuitive  
☐

c) Viz3



Not intuitive at all ☐ Slightly intuitive ☐ Moderately intuitive ☐ Very intuitive ☐ Extremely intuitive ☐

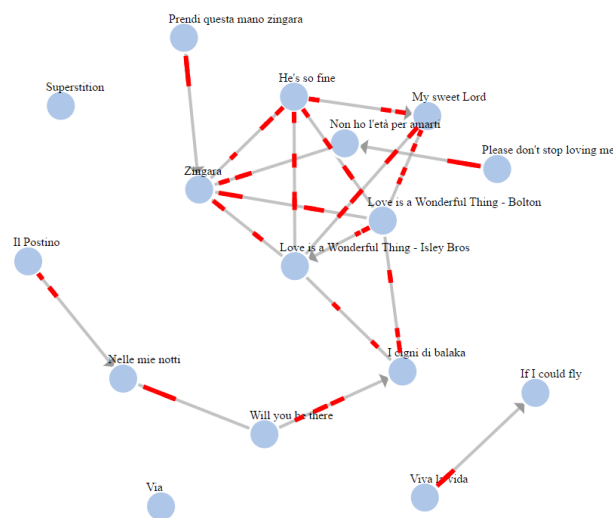
c) Viz4



Not at all ☐ Slightly ☐ Moderately ☐ Very ☐ Extremely ☐

20. Given the following visualization ( *Viz1* ):

*List the most positive aspects:*



---

---

---

---

---

---

---

---

*List the most negative aspects:*

---

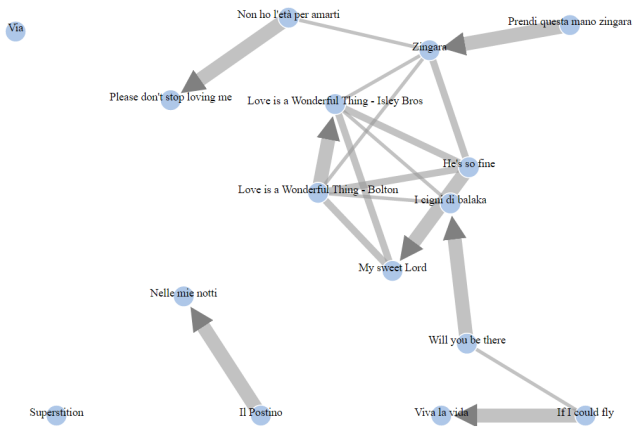
---

---

---

21. Given the following visualization ( *Viz2* ):

*List the most positive aspects:*



---

---

---

---

---

---

---

---

*List the most negative aspects:*

---

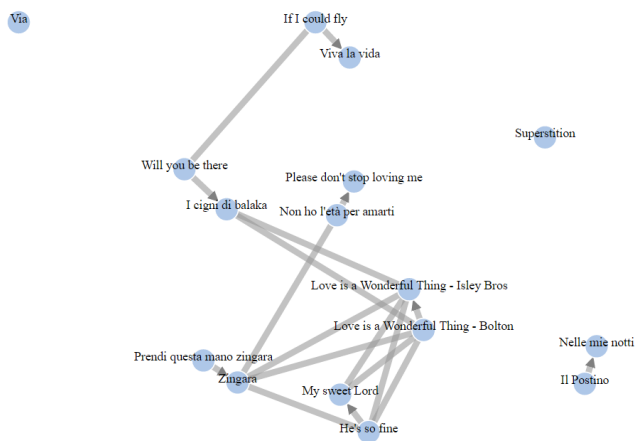
---

---

---

22. Given the following visualization (*Viz3*):

*List the most positive aspects:*



*List the most negative aspects:*

---

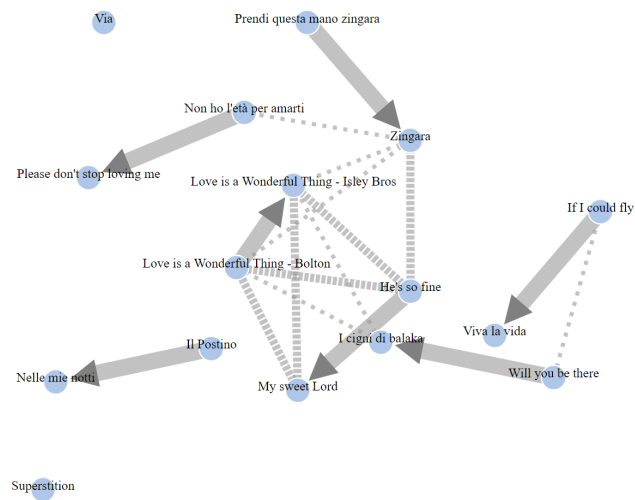
---

---

---

23. Given the following visualization ( *Viz4* ):

*List the most positive aspects:*



---

---

---

---

---

---

---

---

*List the most negative aspects:*

---

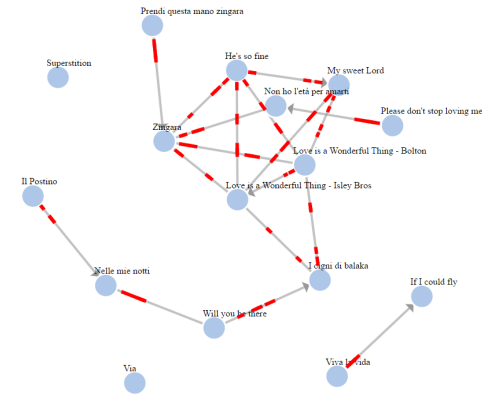
---

---

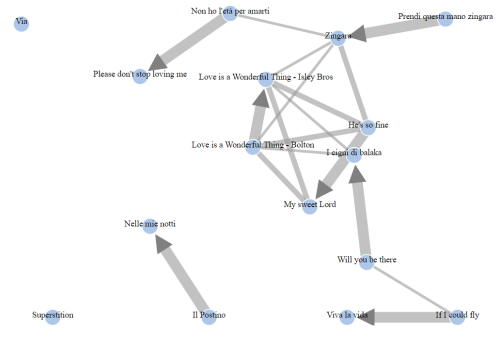
---

24. Given the following visualizations:

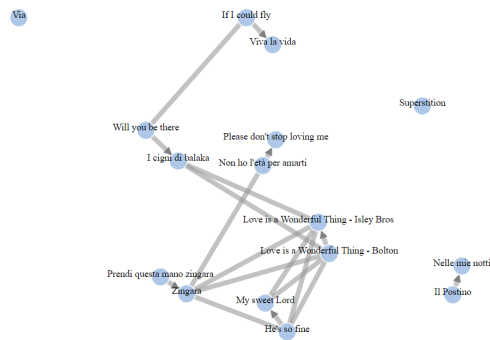
a) Which element mostly helped you in identifying a similarity between two songs?



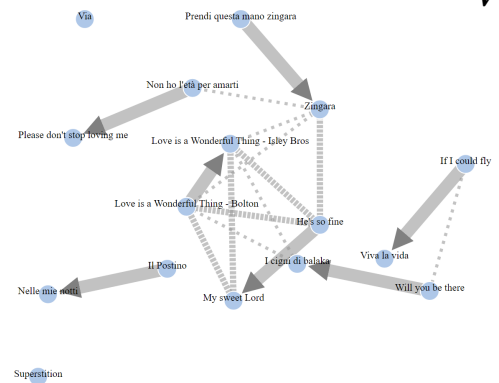
*Viz1*



*Viz2*



*Viz3*



*Viz4*

- ☐ The existence of an edge between the two nodes
- ☐ The existence of fragments on the edges connecting nodes
- ☐ The thickness of the edges connecting nodes
- ☐ The distance between two nodes
- ☐ The dashed lines of the edges connecting nodes
- ☐ Other: \_\_\_\_\_

b) It is evident that for *Viz1* colored fragments exactly correspond to the equal musical parts?

Not clear at  
all

☐

Slightly clear

☐

Moderately  
clear

☐

Very clear

☐

Extremely  
clear

☐



c) It is evident that for *Viz2* the thickness of the edges connecting two nodes suggests a similarity between the two corresponding songs?

Not clear at all	Slightly clear	Moderately clear	Very clear	Extremely clear
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d) It is evident that for *Viz3* the distance between two nodes suggests a similarity between the two corresponding songs?

Not clear at all	Slightly clear	Moderately clear	Very clear	Extremely clear
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d) It is evident that for *Viz4* the dashed lines (from dashed lines to point lines) between two nodes suggests a similarity between the two corresponding songs?

Not clear at all	Slightly clear	Moderately clear	Very clear	Extremely clear
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>