Assignment Web Similarity Analysis

Generated on 2025-05-08 20:29:34

Executive Summary

Overall Web Similarity Score: 2%

Assessment: The overall similarity between the student's assignment and the provided web sources is extremely low. There are no significant overlaps in content or phrasing. The numerical values and equations in the assignment are specific to the laboratory exercise and unlikely to be found verbatim online. The few minor overlaps are either common terminology or insignificant numerical values that are not considered plagiarism in an academic context.

Conclusion: The assignment shows no evidence of plagiarism. The numerical overlaps are insignificant and likely coincidental, given the context of product codes and the unrelated nature of the websites. The core content of the assignment—the calculations, observations, and analysis—is original work related to a specific laboratory experiment.

Web Sources Analyzed

Source URL	Similarity Score
https://streeteasy.com/building/756-10-avenue-new_york	5.2%
https://www.mass.gov/files/documents/2016/10/ox/756.pdf	1.02%
https://www.calculator.net/scientific-notation-calculator.html	18.27%
https://www.walmart.com/ip/York-S1-AA211-Compatible-Echelon-Air-Cleaner-Filter-B85-756-MERV-10-1-Each/17019	3.[illegible]%
https://www.higherprecision.com/products/bore-gages/mitutoyo-511-756-20-standard-type-dial-bore-gage-10-16-inch	5.5%

Detailed Content Matches

Match 1 - Common Knowledge (10%)

Assignment: 756
Source: https://streeteasy.com/building/756-10-avenue-new_york
Source Text: 756 10th Avenue

Match 2 - Common Knowledge (10%)

Assignment: 756
Source: https://www.mass.gov/files/documents/2016/10/ox/756.pdf
Source Text: 756.pdf

Match 3 - Common Knowledge (10%)

Assignment: 756
Source: https://www.walmart.com/ip/York-S1-AA211-Compatible-Echelon-Air-Cleaner-Filter-B85-756-MERV-10-1-Each/1701915013
Source Text: B85-756-MERV

Match 4 - Common Knowledge (20%)

Assignment: 511-756-20

Source: https://www.higherprecision.com/products/bore-gages/mitutoyo-511-756-20-standard-type-dial-bore-gage-10-16-inch-range-with-_0001-inch-graduations-5-anvils-7-spacers?srsltid=AfmBOoo9rRNEtBaqInCko_Bh1Q6Smfh4EqAm-lRZXNGZSfmKBddG2rOR:

Source Text: 511-756-20 Mitutoyo Standard Dial Bore Gage

Full Assignment with Highlighted Plagiarism

Sections highlighted in yellow with red text indicate potential plagiarism.

EE5351: CONTROL SYSTEM DESIGN
LABORATORY 02

NAME

: BANDARA LRTD

REG No.

: EG/ 2021/ 4433

GROUP NO: CE07
DATE

: 24/01 /2025

Table 1: Summative Laboratory Form
Semester
Module Code
Module Name
Lab Number
Lab Name
Lab conduction date
Report Submission date

05
EE5351
Control System Design
02
Laboratory Section 2
2024.11.05
2025.01.24

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1 OBSERVATION

Table 1: Observations

Terminal Resistance (Rm)
Rotor inductance (Lm)
Equivalent(Jen)
Torque constant (Kt)
Voltage constant (Km)

8.4
1.16
2.09×10■■
0.042
0.042

Ω
mH
kgm²
Nm/A
Nm/A

2 CALCULATION

Q1.

i. .

1. Voltage equation:

■■ = ■■ ■■ + ■■

■■■
+ ■■
■■

2. Back EMF equation:

■■ = ■■ ω■

3. Torque equation:

■ω

■■ = ■■ ■ ■■■

4. Motor torque relationship:

■■ = ■■ ■■

ii.

Transfer function

By using equations (1), (2), (3), and (4):

θ■ (■)

■■

=

■■ (■) ■{■■■ ■[■■ + ■■ ■] + ■■ ■■ }

θ■ (■)

0.042

=

■■ (■) 2.4244 × 10–8 ■ 3 + 17.556 × 10–5 ■ 2 + 1.764 × 10–3 ■

Due to the negligible rotor inductance the simplified version is:θ■ (■)

■■

=

■■ (■) ■{■■■ ■■■ + ■■ ■■ }

θ■ (■)

0.042

=

–4

■■ (■) 1.756 × 10 ■ 2 + 1.764 × 10–3 ■

iii.

H

Figure 1: Simplified Simulink

iv.

By considering the closed loop transfer function

θ■ (■)

θ■ (■)

■■ (■)

=

θ (■)

■■■■ (■)

1+ ■

■■ (■)

(■)

θ■

0.042

=

–4

2

■■■■ (■) 1.756 × 10 ■ + 1.764 × 10–3 ■ + 0.042

v.

Figure 2: Closed Loop T/f

vi.

Figure 3: O/p diagram

Overshoot given as

1.33–1

=

1

=

× 100%

33%

Q2.
i.

Characteristic equation given as :
■ 2 + 10.047■ + 239.23=0

ii.

By considering ;
2■■
■■ 2
■
■■

=
=
=
=

10.047
239.23
0.3248
15.47rad/s

Overshoot

=

■ √1–∊ 2 ×100%

–

■∊

Figure 4:output from closed loop transfer function
=
=

–

■×15.47

■ √1–15.472 ×100%
33.99%

iii.

33.99×70
100

■■■■

■■

–

■∊

=

■ √1–∊2 ×100%

=

0.415

<

2

■
■■(■■■) √1–■(■■■) 2

<

2

According to that to maintain ■■ <

2

The PD characteristics equation is given as
■ 2 + 2 (■■■■ +

■■ ■■(■■■)
2

) ■■(■■■) ■ + √■■ ■■(■■■)1 =0

Considering that ■■(■■■) can replace by √■■ ■■(■■■)1.
From that given as:
■
<2
√■■ ■■(■■■) 1 √1–■(■■■) 2

■■

>0.01762

From that ■■ can consider as 1.

According to that
■ ■

■■■■ =(■■■■ + ■2 ■)
■ 15.47

0.415=(0.325 + ■ 2
■■

=

)

0.011635

Q3)
I.

Figure 5:Time domain response of the closed loop function

II.

The overshoot is given by:

1.3622–0.9725
0.9725

× 100%

:40.0717%

III.

Figure 6: Design a PD Controller

Figure 7: Overshoot is reduced by 30%

3 REFERENCES

[1] M. H. Center. [Online]. Available: https://www.mathworks.com/help/slcontrol/ug/create-i-pdand-pi-d-controllers.html.

[2] MEDIUM. [Online]. Available: https://medium.com/@mmwong920/a-brief-introductino-topd-controller-bac79c4f3fef.

[3] GREEKFOGGREEK. [Online]. Available: https://www.geeksforgeeks.org/compensators/.

Analysis Methodology

Web Similarity Analysis Method: This report analyzes the similarity between a student assignment and web content using multiple approaches:

1. **Basic similarity analysis** using TF-IDF vectorization and cosine similarity metrics to calculate statistical similarity between texts.

2. **Advanced semantic analysis** using Google's Gemini AI to identify conceptual similarities, common phrases, and potential plagiarism patterns.

3. **Source verification** by analyzing multiple sources to distinguish between common knowledge and unique content.

Interpretation Guide:

• 0-15%: Very low similarity - Likely original content

• 16-30%: Low similarity - Contains common phrases but largely original

• 31-50%: Moderate similarity - May contain some paraphrased content

• 51-70%: High similarity - Contains substantial similar content

• 71-100%: Very high similarity - Significant portions may be unoriginal

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Disclaimer: This automated similarity analysis provides an approximation of content similarity against web sources. Results should be interpreted by a human reviewer for context-appropriate assessment. Common knowledge, standard phrases, and coincidental matches may be flagged and require human judgment.