Assignment Web Similarity Analysis

Generated on 2025-03-26 05:06:12

Executive Summary

Overall Web Similarity Score: 25%

Assessment: The assignment shows some similarity to online resources, primarily in the descriptions of Round Robin scheduling. However, much of the assignment focuses on the student's specific implementation and analysis, which appears original. The similarities are mostly conceptual explanations and common phrasing within the domain of operating systems scheduling.

Conclusion: While the assignment uses some common phrasing and conceptual explanations found online, particularly related to Round Robin scheduling, the specific implementation details, figures, and the comparative analysis of average waiting times suggest original work. The similarities observed are likely due to the inherent limitations in describing well-known algorithms and do not constitute clear evidence of plagiarism. The student demonstrates understanding by applying the concepts, generating results, and providing analysis, which goes beyond simply copying online content. It is important to note that some overlap in descriptions of standard algorithms is expected and not necessarily indicative of academic dishonesty.

Web Sources Analyzed

Source URL	Similarity Score
https://www.geeksforgeeks.org/round-robin-scheduling-with-different-arrival-times/	53.55%
https://www.geeksforgeeks.org/program-for-round-robin-scheduling-for-the-same-arrival-time/	54.81%
https://en.wikipedia.org/wiki/Round-robin_scheduling	65.09%
https://www.scaler.com/topics/round-robin-scheduling-in-os/	77.43%

Detailed Content Matches

Match 1 - Similar Content (60%)

Assignment: Implement the Round Robin (RR) scheduling algorithm with a time quantum of 4 units.
Source: https://www.geeksforgeeks.org/program-for-round-robin-scheduling-for-the-same-arrival-time/
Source Text: Program for Round Robin Scheduling...

Match 2 - Similar Content (70%)

Assignment: Looking at the round robin algorithm which has fixed quantum of time to every process.
Source: https://www.scaler.com/topics/round-robin-scheduling-in-os/
Source Text: The Round-robin scheduling algorithm is a kind of preemptive First come, First Serve CPU Scheduling algorithm where each process in the ready state gets the CPU for a fixed time in a cyclic way (turn by turn).

Match 3 - Similar Content (65%)

Assignment: That means if one of the process unable to finish the process within the time slot it will be removed from the queue and put it to the last in order of the queue.
Source: https://en.wikipedia.org/wiki/Round-robin_scheduling
Source Text: (Implicit in the concept of round-robin scheduling is the idea that each task receives an equal share of CPU time.)

Match 4 - Similar Content (50%)

Assignment: But this process which ensure that there is no process wait.
Source: https://www.scaler.com/topics/round-robin-scheduling-in-os/
Source Text: ...every process gets a fixed amount of time quantum to execute the process.

Full Assignment with Highlighted Plagiarism

Sections highlighted in yellow with red text indicate potential plagiarism.

EE6253 – Operating Systems and Network Programming

TAKE HOME ASSIGNMENT

EG/2021/4432: BANDARA KMTON

Implement the FCFS scheduling algorithm

Figure 1: Function for Implementation FCFS scheduling algorithm

Figure 1: Function for Implementation FCFS scheduling algorithm

Implement the SJF scheduling algorithm

Figure 2: Function for implementing SJS Scheduling algorithm

Figure 2: Function for implementing SJS Scheduling algorithm

Implement the Round Robin (RR) scheduling algorithm with a time quantum of 4 units.

Figure 3: Implement of Round Robin (RR) scheduling algorithm with a time quantum of 4 units

Figure 3: Implement of Round Robin (RR) scheduling algorithm with a time quantum of 4 units

Implement the Priority Scheduling algorithm (lower number indicates higher priority).

Figure 4: Implement the Priority Scheduling algorithm (lower number indicates higher priority).

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Execution of outputs

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Figure 8: Priority Scheduling

Figure 8: Priority Scheduling

Figure 7: Round Robin Scheduling

Figure 7: Round Robin Scheduling

Figure 6 : SJF Scheduling

Figure 6 : SJF Scheduling

Figure 5: FCFS Scheduling

Figure 5: FCFS Scheduling

Comparison of average waiting time for each algorithm.

Figure 9: Comparison of average waiting time for each algorithm

Figure 9: Comparison of average waiting time for each algorithm

Write a brief analysis comparing the performance of the four scheduling algorithms based on the average waiting time.

Considering one by one of these algorithms as figure 5 shown as the output of the FCFS scheduling here the average waiting time is 7.20. So this is executing as these processes in order when they arrived. Considering that when P1 starts and after finishing of the P1 then P2 starting so this is called as non-pre-emptive. This has a higher average waiting value because of the convey effect.

Then considering about the SJS scheduling algorithm it takes the average waiting time as 4.60. comparing with FCFS algorithm that time is a lower value. Considering the process of here it will be choosing the burst value which has a lower value from the queue which will be ready to proceed. Considering the reason for having shortest value for this one is it will be going to prioritize start with the shortest processes other than the processes has a longtime slot.

Looking at the round robin algorithm which has fixed quantum of time to every process. That means if one of the process unable to finish the process within the time slot it will be removed from the queue and put it to the last in order of the queue. But considering the above algorithms as FCFS and SJS average times round robin algorithm has a highest average time because the reason for this is time quantum. But this process which ensure that there is no process wait.

Source: https://www.scaler.com/topics/round-robin-scheduling-in-os/

By considering at the behaviour of Priority scheduling which will be going to prioritise the each process which mean if the process has highest priority it will be going to execute first. So consider about the average time of the Priority algorithm has given as 8.20 which is larger than FCFS and SJS .if the prioritizing process have the short time period then the waiting time is become low. In here can be happened the starvation because of having the delay of the low priority processes. So considering this processes mainly depend on the prioritizing of the processes and can have the starvation for the low processes.

So considering those four algorithms SJS is the most efficient because of having minimum waiting time. In FCFS can have the longest time period because of the long processes arriving first.and also for the round robin process is only depend on the time quantizing with ensuring the processes not wait too long. For the general usage the SJF is the better one having minimum time and also Round robin is ideal for ensuring the processes procedures.

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.