**Optimistic linear: iteration1**

--- Average Times per Task (Seconds) ---

Task01: 0.20 sec

Task02: 0.30 sec

Task03: 0.36 sec

Task04: 0.39 sec

Task05: 0.40 sec

Task06: 0.63 sec

Task07: 0.77 sec

Task08: 0.32 sec

Task09: 0.39 sec

Task10: 0.81 sec

Task11: 0.55 sec

Task12: 0.82 sec

Task13: 0.69 sec

Task14: 0.57 sec

Task15: 0.52 sec

Task16: 0.30 sec

Task17: 1.23 sec

Task18: 1.08 sec

Task19: 1.10 sec

Task20: 0.87 sec

Task21: 0.89 sec

Task22: 0.59 sec

Task23: 0.39 sec

Task24: 0.29 sec

Task25: 0.70 sec

Task26: 1.15 sec

Task27: 1.56 sec

Task28: 0.54 sec

Task29: 0.47 sec

Task30: 0.35 sec

Calculating learning rates (exponent b) for each TaskXX...

C:\Users\tternghaa's\AppData\Roaming\Python\Python310\site-packages\openpyxl\styles\stylesheet.py:237: UserWarning: Workbook contains no default style, apply openpyxl's default

warn("Workbook contains no default style, apply openpyxl's default")

Loading previous state (if any)...

Performing ILP-based balancing (all times in seconds)...

Comparing current balancing scenarios...

--- Comparison Results ---

Old Cycle Times (by workstation) [seconds]: [6.61, 6.56, 6.03]

New Cycle Times (by workstation) [seconds]: [6.61, 6.56, 6.03]

Old Total Time (Bottleneck) [seconds]: 6.61

New Total Time (Bottleneck) [seconds]: 6.61

--- Task Changes ---

No tasks moved between workstations.

--- Metrics ---

Time Saved per Hour [seconds/hour]: 0.00

Setup Time Cost [seconds]: 0.00

Learning Penalty [seconds]: 0.00

Time to Net Benefit: Never (no net benefit)

--- New Scenario Workstation Allocation ---

Workstation 1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

Workstation 2: [14, 15, 16, 17, 18, 19, 20, 21]

Workstation 3: [22, 23, 24, 25, 26, 27, 28, 29, 30]

Saving the new scenario as the current baseline...

**Optimistic linear: iteration2**

--- Average Times per Task (Seconds) ---

Task01: 0.21 sec

Task02: 0.29 sec

Task03: 0.35 sec

Task04: 0.40 sec

Task05: 0.43 sec

Task06: 0.61 sec

Task07: 0.70 sec

Task08: 0.31 sec

Task09: 0.36 sec

Task10: 0.78 sec

Task11: 0.55 sec

Task12: 0.85 sec

Task13: 0.72 sec

Task14: 0.59 sec

Task15: 0.52 sec

Task16: 0.31 sec

Task17: 1.25 sec

Task18: 1.08 sec

Task19: 1.07 sec

Task20: 0.88 sec

Task21: 0.84 sec

Task22: 0.59 sec

Task23: 0.37 sec

Task24: 0.29 sec

Task25: 0.69 sec

Task26: 1.18 sec

Task27: 1.57 sec

Task28: 0.57 sec

Task29: 0.47 sec

Task30: 0.34 sec

Calculating learning rates (exponent b) for each TaskXX...

C:\Users\tternghaa's\AppData\Roaming\Python\Python310\site-packages\openpyxl\styles\stylesheet.py:237: UserWarning: Workbook contains no default style, apply openpyxl's default

warn("Workbook contains no default style, apply openpyxl's default")

Loading previous state (if any)...

Performing ILP-based balancing (all times in seconds)...

Comparing current balancing scenarios...

--- Comparison Results ---

Old Cycle Times (by workstation) [seconds]: [6.57, 6.55, 6.07]

New Cycle Times (by workstation) [seconds]: [6.57, 6.55, 6.07]

Old Total Time (Bottleneck) [seconds]: 6.57

New Total Time (Bottleneck) [seconds]: 6.57

--- Task Changes ---

No tasks moved between workstations.

--- Metrics ---

Time Saved per Hour [seconds/hour]: 0.00

Setup Time Cost [seconds]: 0.00

Learning Penalty [seconds]: 0.00

Time to Net Benefit: Never (no net benefit)

--- New Scenario Workstation Allocation ---

Workstation 1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

Workstation 2: [14, 15, 16, 17, 18, 19, 20, 21]

Workstation 3: [22, 23, 24, 25, 26, 27, 28, 29, 30]

Saving the new scenario as the current baseline...

**Optimistic linear: iteration3**

--- Average Times per Task (Seconds) ---

Task01: 0.20 sec

Task02: 0.30 sec

Task03: 0.35 sec

Task04: 0.39 sec

Task05: 0.41 sec

Task06: 0.64 sec

Task07: 0.72 sec

Task08: 0.33 sec

Task09: 0.40 sec

Task10: 0.75 sec

Task11: 0.55 sec

Task12: 0.86 sec

Task13: 0.68 sec

Task14: 0.58 sec

Task15: 0.51 sec

Task16: 0.31 sec

Task17: 1.19 sec

Task18: 1.11 sec

Task19: 1.12 sec

Task20: 0.91 sec

Task21: 0.87 sec

Task22: 0.55 sec

Task23: 0.37 sec

Task24: 0.29 sec

Task25: 0.67 sec

Task26: 1.16 sec

Task27: 1.57 sec

Task28: 0.58 sec

Task29: 0.46 sec

Task30: 0.35 sec

Calculating learning rates (exponent b) for each TaskXX...

C:\Users\tternghaa's\AppData\Roaming\Python\Python310\site-packages\openpyxl\styles\stylesheet.py:237: UserWarning: Workbook contains no default style, apply openpyxl's default

warn("Workbook contains no default style, apply openpyxl's default")

Loading previous state (if any)...

Performing ILP-based balancing (all times in seconds)...

Comparing current balancing scenarios...

--- Comparison Results ---

Old Cycle Times (by workstation) [seconds]: [6.57, 6.61, 6.0]

New Cycle Times (by workstation) [seconds]: [6.57, 6.61, 6.0]

Old Total Time (Bottleneck) [seconds]: 6.61

New Total Time (Bottleneck) [seconds]: 6.61

--- Task Changes ---

No tasks moved between workstations.

--- Metrics ---

Time Saved per Hour [seconds/hour]: 0.00

Setup Time Cost [seconds]: 0.00

Learning Penalty [seconds]: 0.00

Time to Net Benefit: Never (no net benefit)

--- New Scenario Workstation Allocation ---

Workstation 1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

Workstation 2: [14, 15, 16, 17, 18, 19, 20, 21]

Workstation 3: [22, 23, 24, 25, 26, 27, 28, 29, 30]

Saving the new scenario as the current baseline...

**Optimistic linear: iteration4**

--- Average Times per Task (Seconds) ---

Task01: 0.19 sec

Task02: 0.28 sec

Task03: 0.35 sec

Task04: 0.39 sec

Task05: 0.39 sec

Task06: 0.59 sec

Task07: 0.73 sec

Task08: 0.33 sec

Task09: 0.38 sec

Task10: 0.79 sec

Task11: 0.56 sec

Task12: 0.81 sec

Task13: 0.69 sec

Task14: 0.56 sec

Task15: 0.54 sec

Task16: 0.33 sec

Task17: 1.27 sec

Task18: 1.08 sec

Task19: 1.09 sec

Task20: 0.90 sec

Task21: 0.85 sec

Task22: 0.55 sec

Task23: 0.37 sec

Task24: 0.29 sec

Task25: 0.69 sec

Task26: 1.18 sec

Task27: 1.50 sec

Task28: 0.56 sec

Task29: 0.46 sec

Task30: 0.34 sec

Calculating learning rates (exponent b) for each TaskXX...

C:\Users\tternghaa's\AppData\Roaming\Python\Python310\site-packages\openpyxl\styles\stylesheet.py:237: UserWarning: Workbook contains no default style, apply openpyxl's default

warn("Workbook contains no default style, apply openpyxl's default")

Loading previous state (if any)...

Performing ILP-based balancing (all times in seconds)...

Comparing current balancing scenarios...

--- Comparison Results ---

Old Cycle Times (by workstation) [seconds]: [6.49, 6.62, 5.94]

New Cycle Times (by workstation) [seconds]: [6.49, 6.62, 5.94]

Old Total Time (Bottleneck) [seconds]: 6.62

New Total Time (Bottleneck) [seconds]: 6.62

--- Task Changes ---

No tasks moved between workstations.

--- Metrics ---

Time Saved per Hour [seconds/hour]: 0.00

Setup Time Cost [seconds]: 0.00

Learning Penalty [seconds]: 0.00

Time to Net Benefit: Never (no net benefit)

--- New Scenario Workstation Allocation ---

Workstation 1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

Workstation 2: [14, 15, 16, 17, 18, 19, 20, 21]

Workstation 3: [22, 23, 24, 25, 26, 27, 28, 29, 30]

Saving the new scenario as the current baseline...

**Optimistic linear: iteration5**

--- Average Times per Task (Seconds) ---

Task01: 0.20 sec

Task02: 0.30 sec

Task03: 0.36 sec

Task04: 0.38 sec

Task05: 0.39 sec

Task06: 0.63 sec

Task07: 0.70 sec

Task08: 0.36 sec

Task09: 0.40 sec

Task10: 0.75 sec

Task11: 0.56 sec

Task12: 0.78 sec

Task13: 0.75 sec

Task14: 0.55 sec

Task15: 0.56 sec

Task16: 0.31 sec

Task17: 1.22 sec

Task18: 1.08 sec

Task19: 1.09 sec

Task20: 0.87 sec

Task21: 0.83 sec

Task22: 0.57 sec

Task23: 0.38 sec

Task24: 0.29 sec

Task25: 0.70 sec

Task26: 1.17 sec

Task27: 1.54 sec

Task28: 0.57 sec

Task29: 0.47 sec

Task30: 0.36 sec

Calculating learning rates (exponent b) for each TaskXX...

C:\Users\tternghaa's\AppData\Roaming\Python\Python310\site-packages\openpyxl\styles\stylesheet.py:237: UserWarning: Workbook contains no default style, apply openpyxl's default

warn("Workbook contains no default style, apply openpyxl's default")

Loading previous state (if any)...

Performing ILP-based balancing (all times in seconds)...

Comparing current balancing scenarios...

--- Comparison Results ---

Old Cycle Times (by workstation) [seconds]: [6.55, 6.5, 6.05]

New Cycle Times (by workstation) [seconds]: [6.55, 6.5, 6.05]

Old Total Time (Bottleneck) [seconds]: 6.55

New Total Time (Bottleneck) [seconds]: 6.55

--- Task Changes ---

No tasks moved between workstations.

--- Metrics ---

Time Saved per Hour [seconds/hour]: 0.00

Setup Time Cost [seconds]: 0.00

Learning Penalty [seconds]: 0.00

Time to Net Benefit: Never (no net benefit)

--- New Scenario Workstation Allocation ---

Workstation 1: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13]

Workstation 2: [14, 15, 16, 17, 18, 19, 20, 21]

Workstation 3: [22, 23, 24, 25, 26, 27, 28, 29, 30]

Saving the new scenario as the current baseline...