REV: SEPTEMBER 8, 2025

Process Analytics Simulation: Student Guide (Accessible)

This document will guide you on how to engage with the Process Analytics simulation.

NOTE: This simulation is optimized for computers running Chrome browsers at 1250 px minimum width. Computers with larger screens are recommended.

Table of Contents

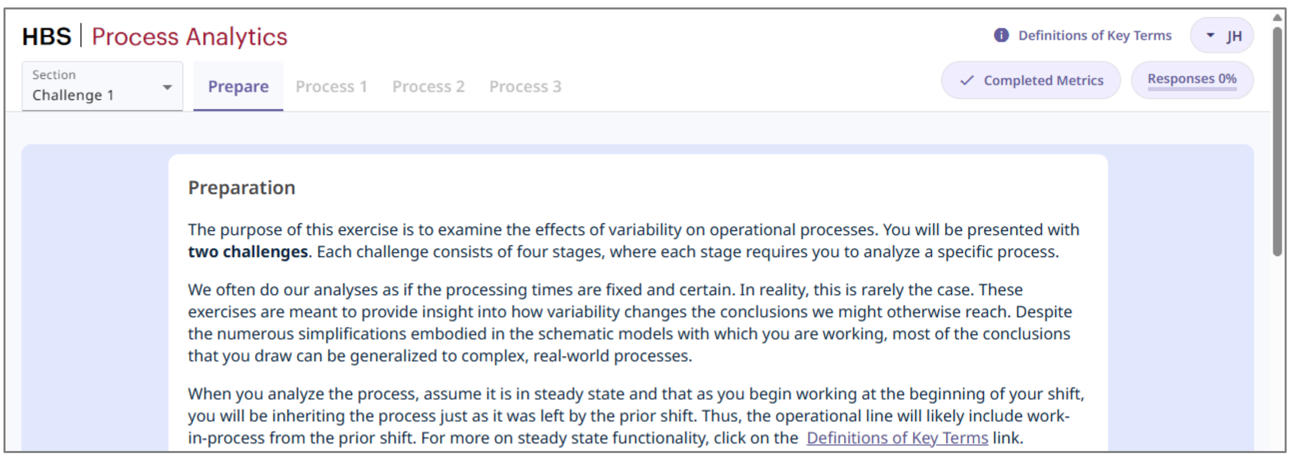
Step 1: Prepare for the simulation

1. Your instructor will post the assignment and the simulation link on your course site.

Step 2: Explore the simulation interface

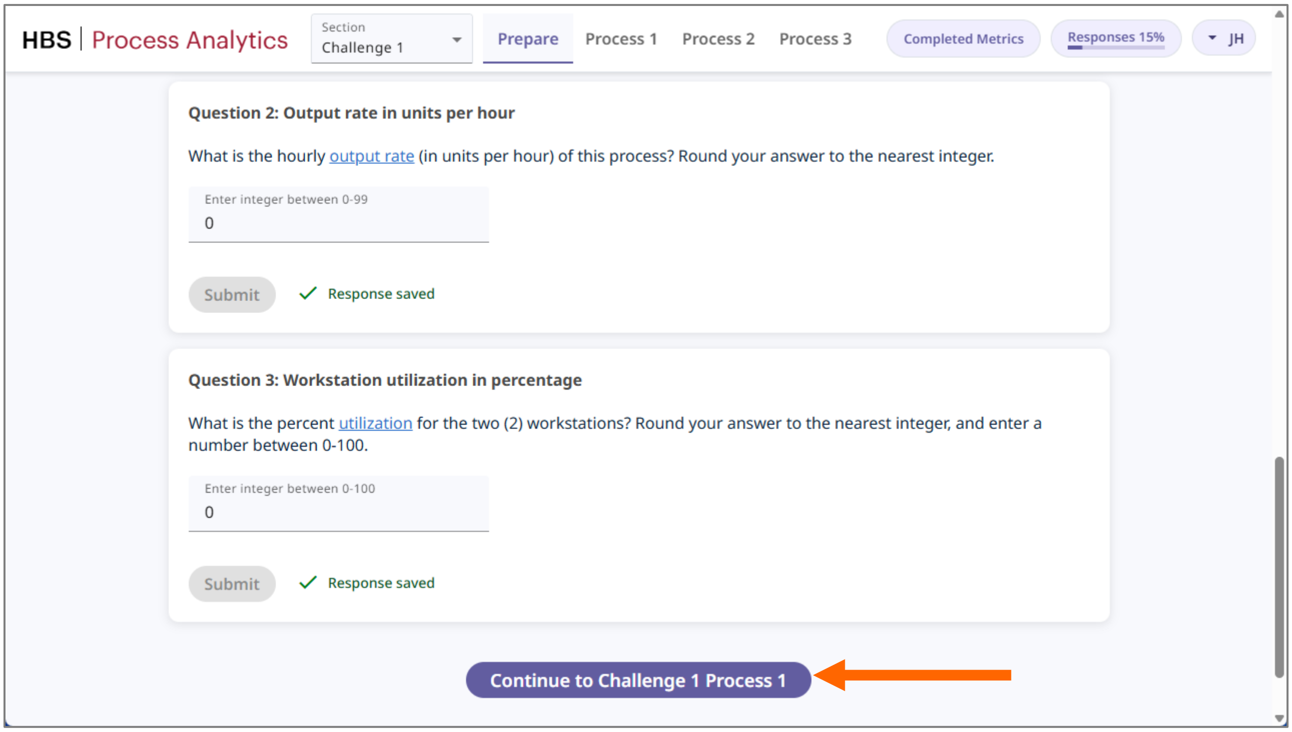
1. The Process Analytics simulation allows you to examine the effects of variability on operational processes. You will be presented with two challenges.
   a. In Challenge 1, you will analyze the outcome of variability on processes without using any buffers.
   b. In Challenge 2, you will explore how operational performance is impacted when variability is coupled with adding work-in-process inventory buffers between workstations.
2. Each challenge consists of four stages, where each stage requires you to analyze a specific process. These stages can be selected via four tabs at the top of the screen (Prepare, Process 1 simulator, Process 2 simulator, and Process 3 simulator) while the bottom part displays corresponding quiz questions on the outcome of each stage.

Figure 1 The Process Analytics simulation interface



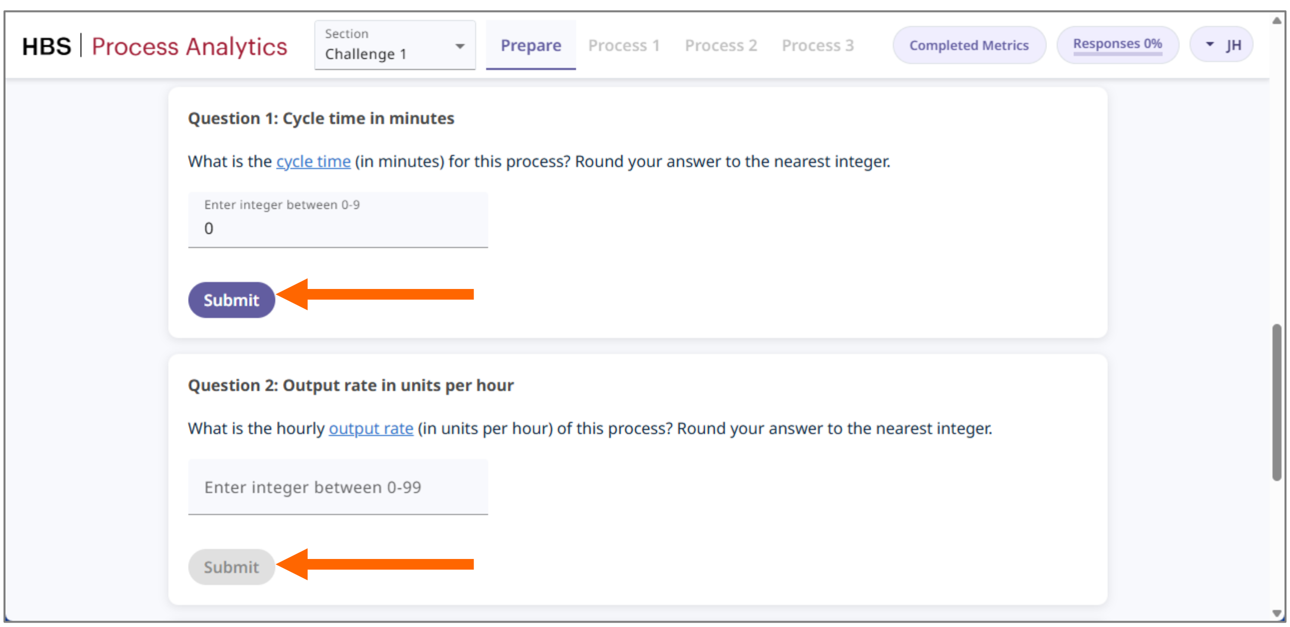
3. The simulation will guide you through each challenge. For example, when you have submitted all answers for the Challenge 1 Prepare tab, you can proceed to the Process 1 tab.

Figure 2 Proceeding after submitting answers in the Prepare tab



4. Please submit your answer to each question by using the Submit button. Your answer is not recorded until you submit it. Note that you may change and resubmit your answer choices at any time until the submission period ends.

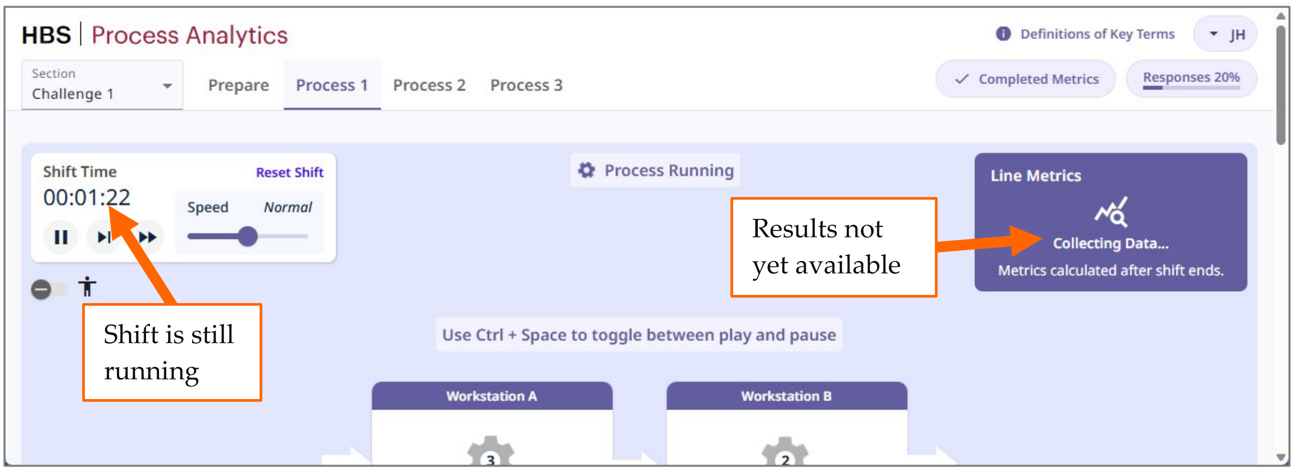
Figure 3 Each quiz question has a Submit button



Step 3: Working with the Process Simulators

1. Each Process tab includes a simulator that emulates a specific operational process. The simulation begins with the process already in a steady state. That is, the simulator assumes that you are at the start of your 8-hour work shift, and that you are inheriting the process just as it was left by the prior shift.
2. When you run the process, you are simulating your 8-hour shift. The simulator begins to collect the data from your shift and will continue to do so until your shift ends.
3. While the shift is running, the Line Metrics panel in the top right displays 'Collecting Data…'.

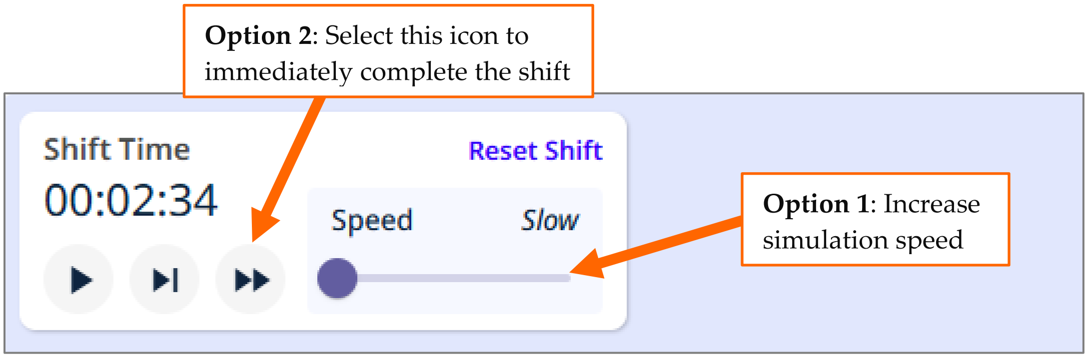
Figure 4 Line Metrics continue to be collected during the 8-hour shift



The process simulators include custom features that can be accessed by toggling the icon. If you are using assistive technology, please see [Appendix D: Using the Process Simulator with Assistive Technologies].

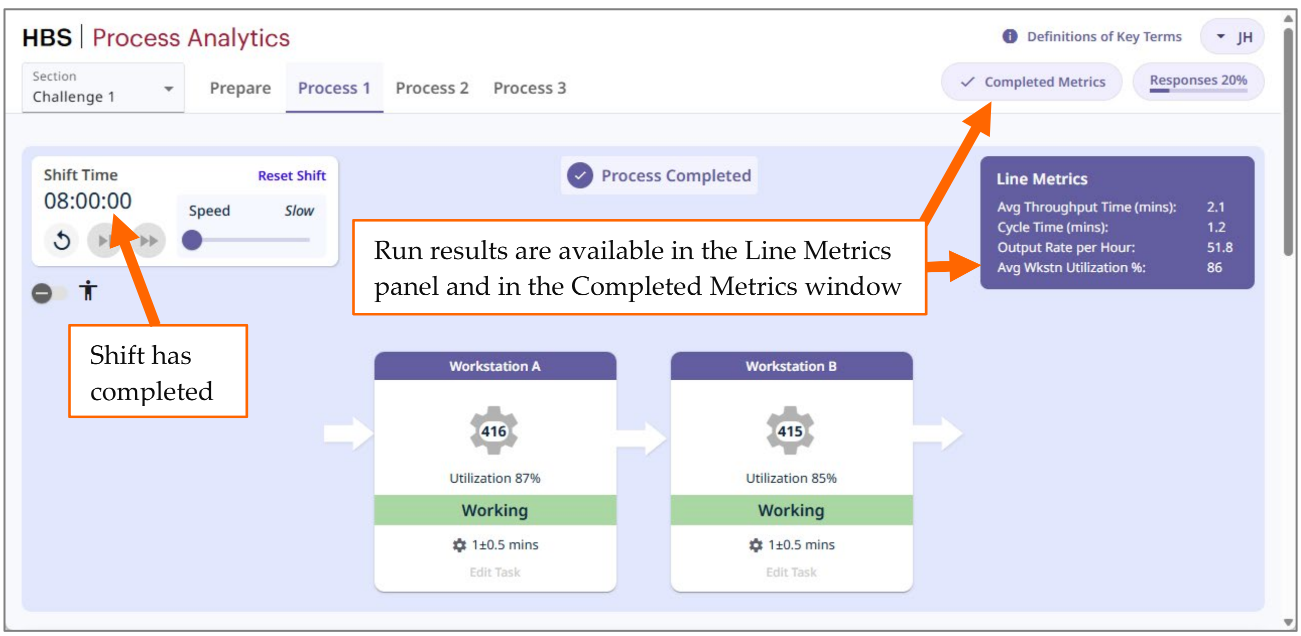
4. When the shift completes, that is, when the Shift Time clock registers 08:00:00, the Line Metrics panel will display the results.
5. A simulated 8-hour shift running at the default, normal speed takes approximately 12 minutes to complete. To speed up the run, you can set the Shift Time clock speed to Fast or use its fast forward button to immediately complete the shift.

Figure 5 Options for speeding up the shift clock



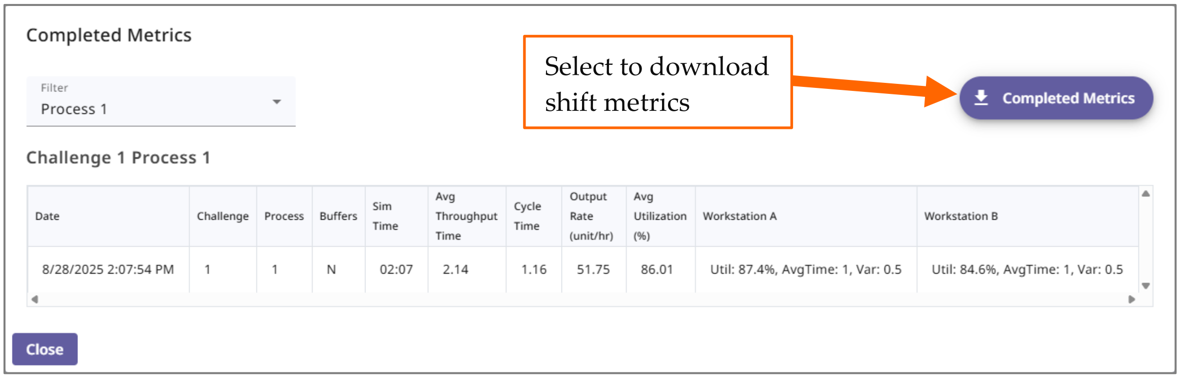
6. You can view and download data from completed shifts. To view data, select the Completed Metrics button. Note that, as in the Line Metrics panel, only run data from **completed** shifts are recorded. Incomplete or paused shifts do not generate recordable data.

Figure 6a Completed shift showing run results



To download the data as an Excel workbook, select the ⬇ Completed Metrics button.

Figure 6b The Completed Metrics window, with the ability to download shift results



Step 4: Complete Challenge 1 and Challenge 2

7. A copy of the quiz questions can be found in [Appendix A: Challenge 1: Workstations with Random Variations and No Buffer] and in [Appendix B: Challenge 2: Workstations with Random Variations and Buffers].

8. As you progress through the assignment, you may want to navigate quickly between challenges and/or process tabs. You can do this by selecting the Challenge and Process at the top of the screen.

Figure 7a Navigation appears at the left when you are at the top of the page

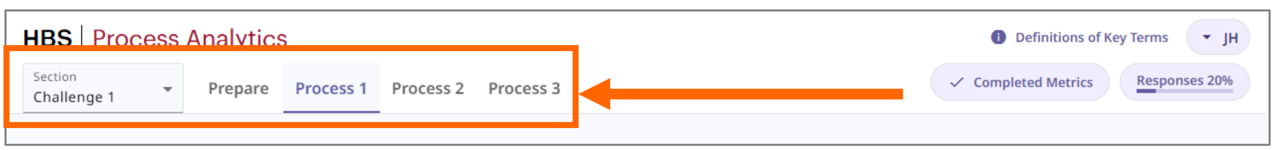
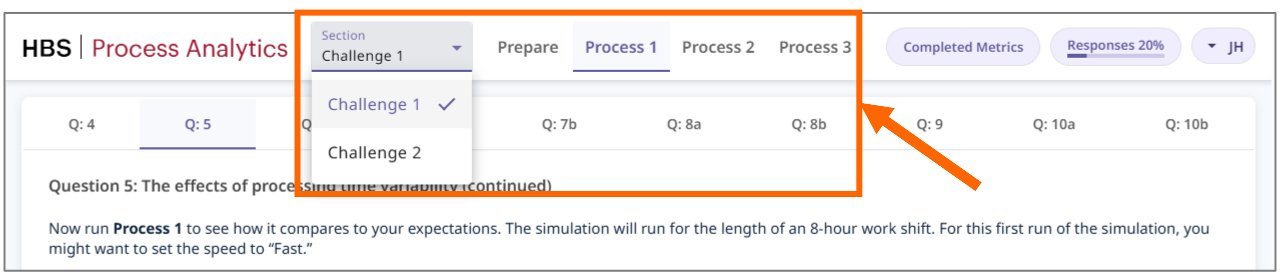
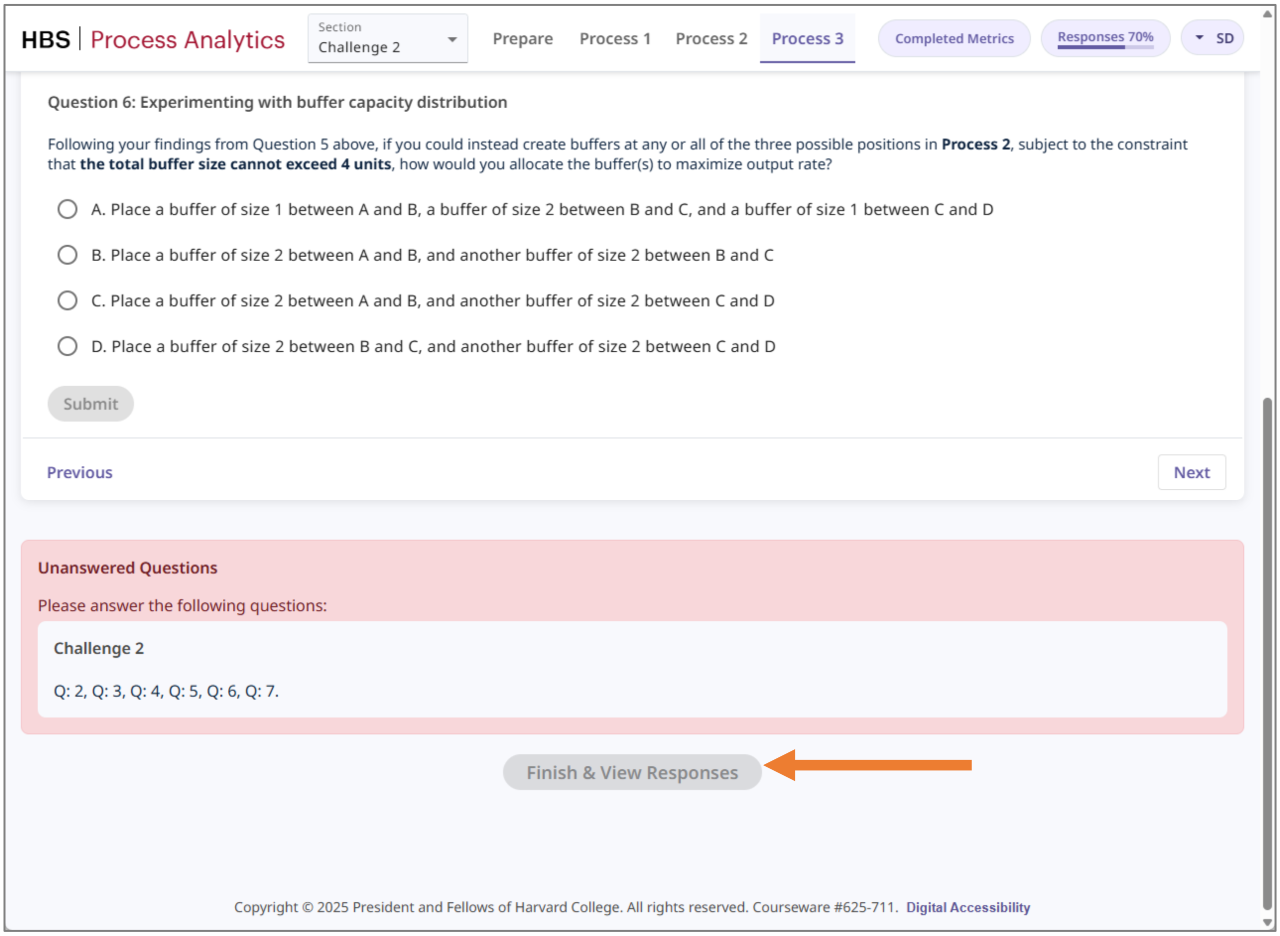


Figure 7b Navigation appears in the center when you scroll down the page



9. At the end of Challenge 2, be sure to select the Finish & View Responses button to receive confirmation that you have completed the assignment.
   a. The Finish & View Responses button is active after you have completed all quiz questions.
   b. If the Finish & View Responses button remains greyed out, please check to ensure you have submitted answers for all the questions in Challenge 1 as well as in Challenge 2. A list of unanswered questions appears above the button.

Figure 8 The Finish & View Responses button is inactive until all Challenge 1 and Challenge 2 quiz questions have been answered



10. After you complete the assignment, you may still return to the simulation at any time to rerun the processes or update your quiz answers.
11. Your quiz results will be collected and reported to your instructor on the assignment due date posted on your course site.

Step 5: Attend class debrief

1. Congratulations on completing the simulation. Your instructor will debrief the simulation results with the class.
2. Please note that the quiz answer key will be revealed after your class debrief.
3. The Process Analytics simulation will continue to be available for your use for the duration of your course.

Appendix A: Challenge 1: Workstations with Random Variations and No Buffer

Prepare

The purpose of this exercise is to examine the effects of variability on operational processes. You will be presented with two challenges. Each challenge consists of four stages, where each stage requires you to analyze a specific process.

We often conduct analyses as if the processing times are fixed and certain. In reality, of course, this is rarely the case. These exercises are meant to provide insight into how uncertainty might change some of the conclusions we might be tempted to draw based on fixed processing times. Despite the numerous simplifications embodied in the schematic models with which you are working, most of the conclusions that you draw can be generalized to complex, real-world processes.

When you analyze the process, assume it is in steady state and that as you begin working at the beginning of your shift, you will be inheriting the process just as it was left by the prior shift. Thus, the operational line will likely include work in process from the prior shift. For more on steady state functionality, see Appendix C: Process Analytics Definitions and Key Terms.

Please answer questions 1 through 3 before running the simulation. Consider a simple, 2-workstation process in which each workstation has a processing time of 1 minute. Assuming there is no uncertainty in the processing times of the 2 workstations (i.e., each workstation always takes exactly 1 minute to perform its tasks before sending the unit on), then:

Question 1

What is the cycle time (in minutes) for this process? Round your answer to the nearest integer.

Answer: <Enter integer between 0 to 9>

Question 2

What is the hourly output rate (in units per hour) of this process? Round your answer to the nearest integer.

Answer: <Enter integer between 0 to 99>

Question 3

What is the percent utilization for the two workstations? Round your answer to the nearest integer, and enter a number between 0-100.

Answer: <Enter integer between 0 to 100>

Question 4: The effects of processing time variability

Now consider the process flow diagram shown in **Process 1**. This is a 2-workstation line with variability in the processing time of each step. Each workstation has an average processing time of 1 minute, but that time can vary by ±0.5 minutes. Processing an individual unit on a given workstation will take between 0.5 minutes and 1.5 minutes. Because this simulation's variability is based on a uniform distribution, this means that the amount of time it takes to accomplish the task at the workstation will vary uniformly around the average of 1 minute (i.e., any processing time between 0.5 minutes and 1.5 minutes is equally likely).

Before running Process 1, how (directionally) would you expect your answers to Questions 1 - 3 in the *Challenge 1, Prepare* tab to change?

Answer choices:

A. All three (cycle time, output rate, and workstation utilization) will remain unchanged. Over the long run, any variability in the line will level out

B. All three (cycle time, output rate, and workstation utilization) will increase

C. Cycle time will decrease. Output rate and workstation utilization will increase

D. Cycle time will increase. Output rate and workstation utilization will decrease

Question 5: The effects of processing time variability (continued)

Now run **Process 1** to see how it compares to your expectations. The simulation will run for the length of an 8-hour work shift. For this first run of the simulation, you might want to set the speed to "Fast."

When the simulation is over, look at the summary statistics in the Line Metrics panel. How do the line metrics (cycle time, output rate, and average utilization) compare to your answers to Questions 1-3 in the Challenge 1, Prepare tab?

Answer choices:

A. All metrics improved: cycle time decreased; output rate and average utilization increased

B. All metrics worsened: cycle time increased; output rate and average utilization decreased

Question 6: The effects of processing time variability (continued)

Now run Process 1 again, and this time, do not speed up the animation. What do you observe that accounts for the results in Question 5?

Answer choices:

I. Workstations A and B are sometimes working on their tasks at the same time

II. Workstation A is sometimes blocked. It has completed its task but is waiting on B

III. Workstation B is sometimes starved. It has completed its task but is waiting on A

A. I only

B. II and III

C. I, II, and III

D. None of the above

Question 7a: Increasing processing time variability

Now that you have some insight into the impact of processing time variability, try investigating what happens with more or less variability. Consider what happens when you keep the average processing time equal to 1 minute but increase or decrease the variability.

For example, in **Process 1**, first select Reset Shift. Then, edit both workstations to set their Time Variation to ±1.0 minute (note: workstation settings cannot be changed while the simulation is running).

Once you have increased the variability values for **each** workstation, from ±0.5 minute to ±1.0 minute, run Process 1. How do line output rate and workstation utilizations differ from what you noted in Questions 5 and 6?

Answer choices:

A. Workstation A will complete its task more quickly, leading to a lower line output rate

B. Workstation B will complete its task more quickly, leading to a higher line output rate

C. The increased variability will balance out, so the average output rate will not change from the ±0.5 scenario

D. Both Workstation A and B will experience reduced utilization, leading to a lower line output rate

Question 7b: Decreasing processing time variability

Now, decrease the processing time variability. In **Process 1**, select Reset Shift, then change each workstation's Time Variation from ±0.5 minute to ±0.2 minute. What do you observe?

Answer choices:

A. With reduced task time variability, Workstation A will be blocked by Workstation B more frequently

B. With reduced task time variability, one workstation is still blocked or starved for nearly every unit of work

C. The lower the variability, the longer the workstation that finishes first may have to wait for the other workstation to finish

D. All of the above

Question 8a: Experimenting with line length

Now that you have seen how different degrees of variability affect a 2-workstation line, investigate what happens in a longer line. Go to **Process 2**, which is a 4-workstation line. As you can observe, this is again a balanced line (with respect to average processing times) in which all 4 workstations have processing times ranging from 0.5 minutes to 1.5 minutes.

Before simulating Process 2, what are your expectations (directionally) of the line output rate and average workstation utilization relative to those performance measures observed in Process 1?

Answer choices:

A. Line output rate and average utilization will increase

B. Line output rate and average utilization will decrease

C. Line output rate will increase but average utilization will decrease

D. Both will remain unchanged

Question 8b: Experimenting with line length (continued)

Run **Process 2** to test your expectations. After first running the process at "Fast" speed, try running it again for a while at a slower speed to observe what is happening. Why does overall performance decline?

Answer choices:

A. A slow Workstation D will block all other workstations

B. A slow Workstation B will starve Workstations C and D

C. A slow Workstation C will block Workstations A and B

D. All of the above

Question 9: The effects of variability on long assembly lines

Now look at **Process 3**, a 6-workstation line, which has the same parameters (i.e., processing times uniformly distributed between 0.5 minutes and 1.5 minutes). Run this process and observe the output rate and workstation utilization.

From your observations of the 2-, 4-, and 6-workstation lines, what generalizations might you draw about the impact of variability on longer assembly lines?

Answer choices:

A. A 6-workstation line's average workstation utilization is higher than that of a 4-workstation line

B. The utilization of the last workstation in a 6-workstation line is the same as the utilization of the last workstation in a 4-workstation line

C. When multiple workstations are starved, workstations further along the line remain starved for longer

D. All of the above

Question 10a: Experimenting with unbalanced lines

For all the processes above, the lines have on average been balanced (i.e., the mean Task Times have been identical). Let's investigate a simple unbalanced line.

Return to Process 1. How would you expect line output rate and average workstation utilization to change if we could speed up or slow down the Task Time (without changing its Time Variation) of only one workstation?

Start experimenting by selecting Reset Shift. Then, edit Workstation A to make it twice as fast as B, so that the mean processing time (Task Time) is only 0.5 minutes—but maintain ±0.5-minute variability—and run the process (note: it will be useful to run the process for some time at a slower speed). Afterwards, reverse the settings so that Workstation B is twice as fast as A.

Answer choices:

A. Speeding up Workstation A will reduce its utilization rate

B. Speeding up Workstation B will reduce its utilization rate

C. Speeding up either workstation will shift the line's bottleneck

D. All of the above

Question 10b: Bottlenecks in operations

Following your findings from Question 10a, which of the following statements is correct?

Answer choices:

A. Speeding up *either* workstation increases the line output

B. Speeding up one workstation increases the utilization of the other workstation

C. Both A and B are correct

D. None of the above

Appendix B: Challenge 2: Workstations with Random Variations and Buffers

Prepare

In *Challenge 1*, you observed the negative impact that variability has on the performance of a tightly coupled line as measured by the decrease in workstation utilization and, consequently, in output rate. In this second set of exercises, you will explore the effects of reducing that negative impact—decoupling the line by adding work-in-process inventory buffers between workstations. You will also begin to compare the benefits of decoupling to those of reducing variability directly.

This exercise starts with the simple 2-workstation processes of *Challenge 1, Process 1*, and asks you to investigate the impact of a work-in-process buffer placed between the two workstations, as well as the impact of buffers of varying sizes. You will also return to longer lines and investigate both buffer location and size.

Question 1: Effect of work-in-process inventory

Consider the 2-workstation process that you worked with in *Challenge 1*, in which both workstations had a mean processing time of 1 minute and a uniform distribution of variability between 0.5 minutes and 1.5 minutes. Recall the output rate for an 8-hour period as well as the utilization for the two workstations.

Before running any simulations in *Challenge 2*, what do you expect would be the effect of allowing work-in-process inventory to be stored between the two workstations?

Answer choices:

A. No change from Challenge 1 Process 1

B. Workstation A utilization improves, but Workstation B utilization suffers

C. Workstation B utilization improves, but Workstation A utilization suffers

D. Both workstations will show improvements in their utilizations

Question 2: The effects of a work-in-process inventory (buffer)

Go to **Process 1**, which is a 2-workstation line in which the mean processing time is 1 minute, the processing times range from 0.5 minutes to 1.5 minutes, and there is a buffer of size 1 between the two workstations. Now run the simulation. What happens and why?

Answer choices:

A. No change – a buffer of size 1 is insufficient to improve overall performance

B. The buffer improves Workstation A utilization by minimizing blocked occurrences

C. The buffer improves Workstation B utilization by minimizing starved occurrences

D. The buffer improves the utilization for both workstations by minimizing blocked and starved occurrences

Question 3: Experimenting with buffer capacity

What is the relationship between output rate and buffer size? You have already simulated processes and observed the output rate for a 2-workstation line with either no buffer (per *Challenge 1, Process 1*) or a buffer of size 1 (per *Challenge 2, Process 1*).

In **Process 1,** first select Reset Shift. Then, edit the buffer and re-run the simulation with progressively larger buffers. For example, run the simulation with buffer size 2, then 5, then 10, etc. Plotting the hourly output rate on the vertical axis versus the buffer size on the horizontal axis will yield:

Answer choices:

A. A horizontal straight line. Increasing the buffer size yields the same output rate.
B. An upward sloping straight line. The output rate improves steadily with buffer size.
C. An upward sloping line where the slope is increasing. As buffer size grows, the improvement in output rate increases.
D. An upward sloping line where the slope is decreasing. As buffer size grows, the improvement in output rate diminishes.

Question 4: The effects of buffers on longer lines

Examine what happens when you include buffers as you move to longer workstation lines. Specifically, investigate the impact of placing buffers in a 6-workstation line.

Go to **Process 3**, a 6-workstation line with a mean processing time of 1 minute and a range of 0.5 minutes to 1.5 minutes, with buffers of size 1 placed between all successive workstations. Run the process and observe workstation utilization and total output rate. How do they differ from the results observed in previous processes?

Answer choices:

A. In a 6-workstation line, buffers improve utilization. That is, Challenge 2 Process 3 utilization metrics are better than those in Challenge 1 Process 3
B. A 6-workstation line with buffers has a lower average output rate than a 2-workstation line with a buffer, assuming the buffer sizes are the same. That is, the average output rate of Challenge 2 Process 3 is lower than that of Challenge 2 Process 1
C. As line length grows, installing buffers of a given size between each workstation yields smaller improvements in the average output rate
D. All of the above

Question 5: Experimenting with buffer location

Now consider a 4-workstation line. If you could create one **(and only one)** buffer with a size of 4 units, where would you place it?

To check your intuition, go to **Process 2** and edit to vary the size of each buffer. Start by placing a single 4-unit buffer between Workstation A and B, without any other buffers (i.e., edit to set all other buffers to size 0).

Answer choices:

A. Between Workstation A and B, as this will yield a higher average output rate than the other choices

B. Between Workstation B and C, as this will yield a higher average output rate than the other choices

C. Between Workstation C and D, as this will yield a higher average output rate than the other choices

D. A buffer in any of the three positions above will yield the same average output rate

Question 6: Experimenting with buffer capacity distribution

Following your findings from Question 5, if you could instead create buffers at any of the three possible positions in **Process 2**, subject to the constraint that **the total buffer size cannot exceed 4 units**, how would you allocate the buffer(s) to maximize output rate?

Answer choices:

A. Place a buffer of size 1 between A and B, a buffer of size 2 between B and C, and a buffer of size 1 between C and D

B. Place a buffer of size 2 between A and B, and another buffer of size 2 between B and C

C. Place a buffer of size 2 between A and B, and another buffer of size 2 between C and D

D. Place a buffer of size 2 between B and C, and another buffer of size 2 between C and D

Question 7: Lessons learned

What general lessons can you infer from these observations? Please provide a scenario in which the insights you gained throughout this exercise (Challenges 1 and 2) can help you become a better manager.

Answer: [Text box for explanation. Minimum characters: 10, maximum characters: 280]

Appendix C: Process Analytics Definitions and Key Terms

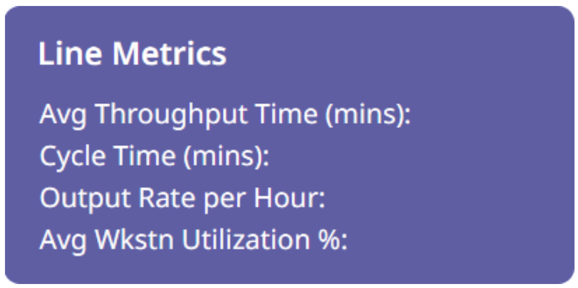
Process Simulators

Table 1 Summary of Process Simulators

Challenge	Simulator	Description	Components	Initial Settings
Challenge 1	Process 1	2-workstation balanced line	Workstation A, Workstation B	Each workstation has a 1-minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.
Challenge 1	Process 2	4-workstation balanced line	Workstation A, Workstation B, Workstation C, Workstation D	Each workstation has a 1-minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.
Challenge 1	Process 3	6-workstation balanced line	Workstation A, Workstation B, Workstation C, Workstation D, Workstation E, Workstation F	Each workstation has a 1-minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.
Challenge 2	Process 1	2-workstation balanced line, with a work-in-progress buffer placed between workstations	Workstation A, Buffer 1, Workstation B	Buffer 1 is set at a capacity of 1 unit. Each workstation has a 1-minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.
Challenge 2	Process 2	4-workstation balanced line, with a work-in-progress buffer placed between workstations	Workstation A, Buffer 1, Workstation B, Buffer 2, Workstation C, Buffer 3, Workstation D	Each buffer is set at a capacity of 1 unit. Each workstation has a 1-minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.
Challenge 2	Process 3	6-workstation balanced line, with a work-in-progress	Workstation A, Buffer 1, Workstation B,	Each buffer is set at a capacity of 1 unit. Each workstation has a 1-

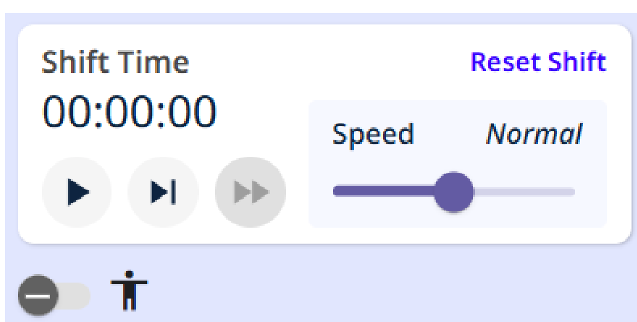
		buffer placed between workstations	Buffer 2, Workstation C, Buffer 3, Workstation D, Buffer 4, Workstation E, Buffer 5, Workstation F	minute average processing time and a uniformly distributed variability between 0.5 minutes and 1.5 minutes.

Line Metrics



- **Avg Throughput Time (mins):** The duration, in minutes, that each unit has spent in the process, from start to finish, on average across all units processed over the 8-hour shift. This includes time during which a unit is actively being worked on in a workstation, and any time spent waiting in the workstation or in buffers.
- **Cycle Time (mins):** The time duration, in minutes, between successive units being completed by the process, on average over the 8-hour shift.
- **Output Rate per Hour:** The hourly rate at which the process is delivering finished units, on average over the 8-hour shift.
- **Avg Workstation Utilization, %:** The average utilization rate of all workstations across the line over the 8-hour shift. (See *workstation utilization* definition below.)

Shift Time *Clock Simulator*

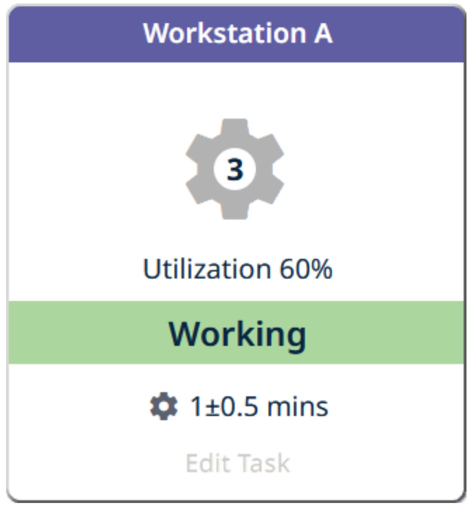


- **Steady State:** When you start a shift in the simulation, the operational line will include work in progress from the prior shift. A new scenario will be generated each time you run a simulated shift; these scenarios will differ slightly each time, just as each time a shift starts, the situation differs slightly.
- **Shift Time:** This reports the amount of time that has passed during the 8-hour shift. The shift begins (at time 00:00:00) in steady state, a stable situation that reflects workstation (and buffer) conditions the moment the prior shift ended. This means you will see work in progress in some or all workstations (and perhaps stored in buffers).
- **Reset Shift:** This returns the process settings and metrics to default values at the beginning of the shift. Changes to process setting (such as workstation task time and buffer size) are only allowed after you reset the shift; settings cannot be performed while you are in the middle of a shift.
- **Shift Controls:** Three buttons are available to control the simulator progress: Play/Start Shift, Skip to Next Event, Fast Forward to End of Shift.
- **Shift Speed:** Use this slider to adjust the shift simulator speed, from Slow to Very Fast.
- Assistive technology features
    - **Show Event Table:** This shows process events, one per line, in a table beneath the animation. This can help learners using assistive technologies. This table shows only the most recent 500 events.
    - **Enable Voicing:** This describes each process event audibly. Each workstation and buffer speaks in a unique voice. This can help learners using assistive technologies. Voicing is available on Process 1 for each challenge and is disabled for Process 2 and Process 3.

Units

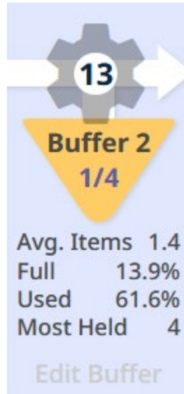
- Each unit of product is depicted as a gear. The number displayed in the gear indicates the unit count. Units are counted (unit 1, 2, 3, etc.) once the shift begins.
- The first item that will exit the process (regardless of its position at the start of the shift) is counted as the first unit completed during your shift.
- A unit that is actively being worked on will be displayed as a gear in a spinning motion; a unit that is blocked or stored in buffers will be displayed as a still/non-moving gear.

Workstation Metrics



- <processing_time> ± <variation_time> mins
  - Task Processing Time, minutes: A setting that specifies the workstation's average task time.
  - Task Variation Time, minutes: A setting that specifies the extent to which a workstation's task time will uniformly vary, above and below its average time.
  - For example, if you set a workstation's task time to be 1.0 ± 0.5 mins, the workstation's task times will vary uniformly between 0.5 minutes and 1.5 minutes; any processing time between 0.5 minutes and 1.5 minutes is equally likely.
- **Utilization**, %: The proportion of time since the beginning of the 8-hour shift that this workstation has spent processing a unit (actively working, not including any time when the workstation is blocked).
- Status: **Working** – Workstation is actively working on a unit.
- Status: **Blocked** – Workstation has finished working on a unit but cannot pass it along to the successive workstation or buffer.
- Status: **Starved** – Workstation is empty and waiting to process the next unit.

Buffer Metrics



- **Buffer** <count> / <size>: Buffers, in this context, store work-in-process inventory between two consecutive workstations. One implication of the simulation starting the shift in steady state is that buffers might be occupied when the shift begins (due to activity in the prior shift).
    - Buffer Unit Count: The number of units currently in the buffer.
    - Buffer Size: The maximum units that can be stored in the buffer.
- **Avg:** The number of items stored in the buffer on average since the shift began.
- **Full:** The proportion of time that the buffer has contained the maximum units it can store, on average since the shift began.
- **Used:** The proportion of time that the buffer has stored at least one unit since the shift began
- **Most:** Maximum number of units the buffer has stored since the shift began.

Appendix D: Using the Process Simulator with Assistive Technologies

The Process Analytics application is compatible with WCAG 2.1 accessibility guidelines. The application supports the use of screen readers as well as standard navigation and content keyboard controls, such as the tab and arrow keys.

Additionally, this application includes custom features designed specifically for the animation-intensive process simulators. These include dedicated keyboard controls to start/continue/stop the animation, a table that logs the working/blocked/starved events, and sonification of these events (voicing).

Accessing the Custom Assistive Technology Features

The simulator can show process events in a table and can voice process events. To access these assistive features, you must first show the accessibility controls using the icon. You may then activate the event log using Show Event Table and/or activate the event voicing using Enable Voicing.

Once you have activated the accessibility features, you can use Ctrl+Space to start, pause, and resume the process simulator. We recommend that assistive technology users pause the process simulator before navigating to/focusing on other components on the screen.

Process Simulator Event Table

The process simulator depicts processes in real-time through a visual animation. An accessible, continually updated event table is also available. The event table displays beneath the animation and shows process events, one per line. This allows you to navigate through the events while the animation is paused, using a screen reader to announce the table contents. The table shows the most recent 500 events.

Process Simulator Voicing

The process simulator can narrate animation events for Process 1 (which has two workstations) in Challenge 1 and Challenge 2. This can help you learn the interrelationships of element states in simple situations.

Voicing is available even without a screen reader. By default, the shift time speed is reduced to the slowest setting when voicing is enabled.

When you enable voicing, the process simulator announces workstation and buffer state changes verbally. Each of these elements has a unique voice.

For the more complex situations in Process 2 and Process 3, which have more than two workstations, voicing is not available. We recommend using the event table.