Project Justification

After you complete the graphic organizer below, use this project justification document to explain how you used computational thinking in your project.

Problem Identification. For each iteration of your problem, please explain how you arrived at your identified problem.

For Iteration 1, I began with a rather broad question, which essentially asked: “ What actions should I take? ” For Iteration 2 and 3, I provided more information for my problem, and I came up with three potential outcomes: either cancel college, delay the college's start time, or start school as usual. These three outcomes were derived from my Iteration 1 pattern recognition phase.

Decomposition. For each iteration where you decomposed an identified problem, please explain how this decomposition helped you solve your identified problem.

The decomposition phases were important for me in all three iterations. In Iteration 1, I identified two sub-problems that helped solve the larger problem. In Iteration 2, I identified two more sub-problems. In Iteration 3, I identified one last sub-problem. Together, all of these sub-problems were helpful because they focused in on specific aspects of my larger problem, and they all asked questions that were quantifiable.

Pattern Recognition. For each iteration where you recognized patterns in data, please explain how these patterns helped you solve your identified problem.

For this project, I utilized the pattern recognition phase in Iteration 1. This was an important phase because it allowed me to identify three potential outcomes: either cancel college, delay the start time, or have college run as usual. Once I identified these three potential outcomes, the rest of the work was deciding how to choose the appropriate outcome.

Abstraction. For each iteration where you abstracted information, please explain how abstraction allowed you to solve your identified problem.

The abstraction phases were used in Iterations 2 and 3. In Iteration 2, the abstraction phase recognizes that what time the roads will be cleares is an important variable to consider. In Iteration 3, the abstraction phase recognizes that water level on the roads is an important variable to consider for the identified problem. These abstractions helped solve my identified problem because it allowed me to focus on relevant information, while ignoring less important information.

Iteration 1

Problem Identification

I assume to be the Head of Mumbai university, and have to decide wheather or not I should cancel college as cyclone is about to hit the city within 48 hours. I live small town of Mumbai, and every year the city faces cyclone problem. While the trains and buses are shut down, and it has been raining heavily for past 3 days, it can be risky for students to attend college in such a scenerio.What actions should I take for this cyclone situation?

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?

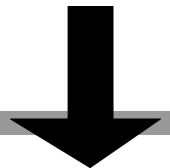
To make a decision, I should know:
- How long is it expected to rain?
- When will the roads be cleared?
- What time will the cyclone hit the city?

Pattern Recognition (Are there related solutions to draw on?)

Based on previous flooding and the cyclone situaton, schools and colleges have either canceled school, delayed the school's start time, or started school as usual. To follow this precedent, I should choose between one of these three outcomes.

Abstraction (How would you abstract this problem?)

Graphic Organizer



Iteration 2

Problem Identification

Colleges starts at 9am, and a major cyclone is going to hit Mumbai at 6am before school. According to weather reports, major roads will be cleared by 12pm. The less traveled rural roads, however, won't be cleared until 9am, which is the time collegel starts. Should I cancel school? Delay the college's start time, or have school start as usual?

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Now that I know some rural roads will NOT be cleared before the collegel's start time, sub-problems I still need solved are:

- Can student safely arrive to the college?
- Are buses and trains working during the cyclone?

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Knowing what time the roads will be cleared.

Graphic Organizer

Iteration 3

Problem Identification

Colleges starts at 9am, and a major cyclone is going to hit Mumbai at 6am before school. According to weather reports, major roads will be cleared by 12pm. The less traveled rural roads, however, won't be cleared until 11am. Should I cancel college? Delay the college's start time, or have college start as usual?

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

In addition to flooding, I also need to consider transportation issues causes, since that will be a major hazard for buses and trains.

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Knowing the amount of water level on the roads is important information. I should also take into account when the water flood will be cleared off the roads.

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Iteration 4

Problem Identification

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 5

Problem Identification

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 6

Problem Identification

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 7

Problem Identification

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 8

Problem Identification

To set up your identified problem

Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 9

Problem Identification

To set up your identified problem

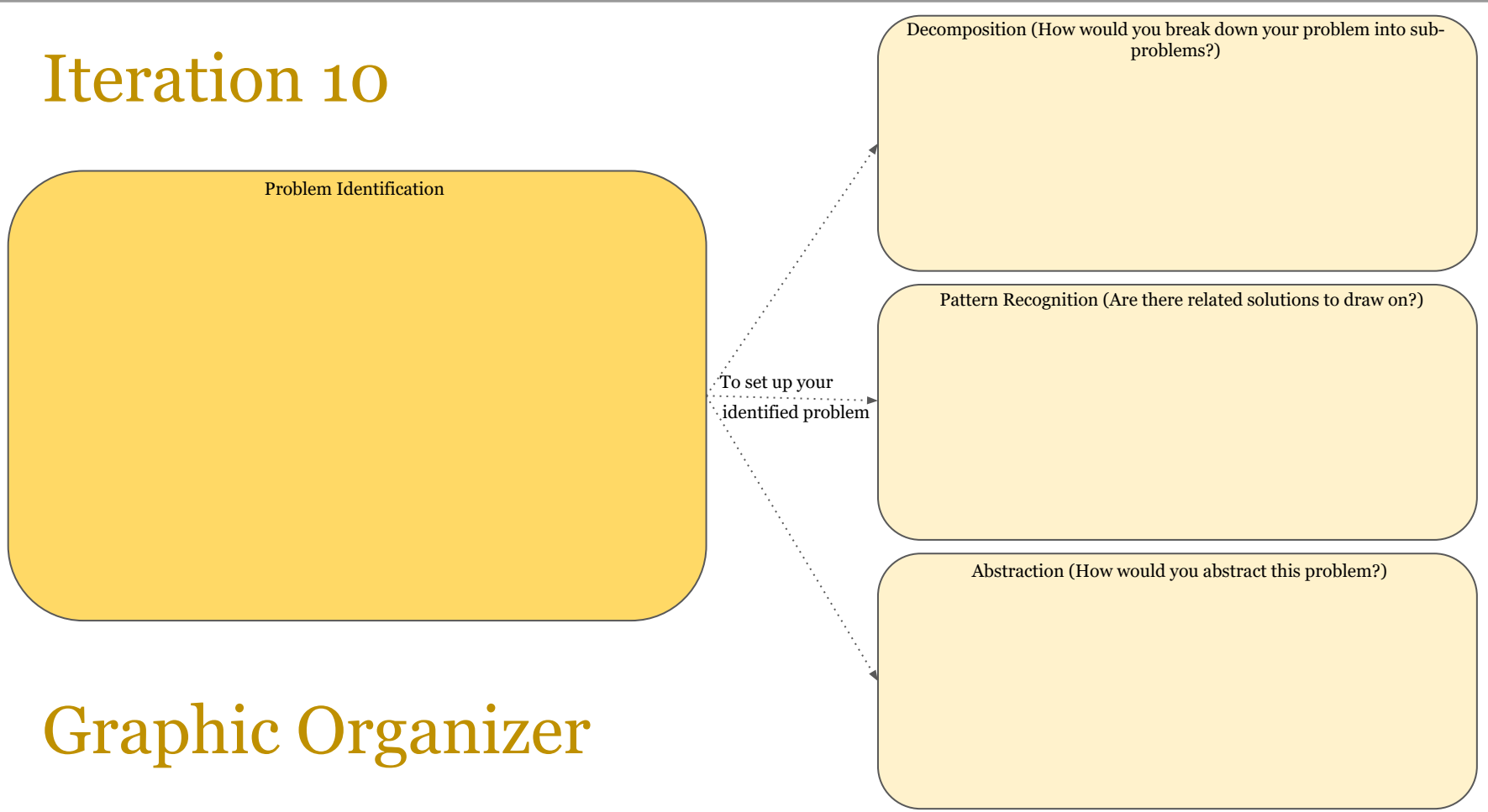
Decomposition (How would you break down your problem into sub-problems?)

Pattern Recognition (Are there related solutions to draw on?)

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 10



Graphic Organizer