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.

Flood Risk Management in Lagos, Nigeria

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

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

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

Iteration 1

Problem Identification

Flood Risk Management in Lagos, Nigeria

Damages:
1. Drowning
2. Loss of personal an d public properties
3. Diseases such as Maleria, Typhoid, Cholera

To set up your identified problem

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

Causes
1. Heavy Rainflall
2. Tropical Cyclon
3. Possible Tsunami from the atlantic ocean
4. Improper watse disposal.

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

Preventions
1. Monitoring, forecasting, warning.
2. Emergency response operation.
3. Design, construction of structures to control or withstand flooding.

Abstraction (How would you abstract this problem?)

Cyclons and Tsunami are to some degree unpredictable. Lagos has a tropical wet and dry climate with two distinct rainy seasons; the more intense season occurs between April and July, with a milder one from October to November. At the peak of the rainy season, the weather in Lagos is wet about half the time.

We'll ignore the dry season, and prepare against the rainning season beause its frequent and we expect several heavy rainfall during this time of the year.

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Iteration 2

Problem Identification

How to prepare against yearly rain seasons to prevent flooding in the event of heavy rainfall on the streets of lagos?

To set up your identified problem

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

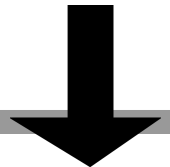
Causes
1. Lack of drainage systems?
2. Accumulation of solid watse in drainage systems

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

1. Construction of Drainage systems
2. Dispatch of Waste Magament Systems and Personnel

Abstraction (How would you abstract this problem?)

Graphic Organizer



Iteration 3

Problem Identification

How to prepare against yearly rain seasons to prevent flooding in the event of heavy rainfall on the streets of lagos?

To set up your identified problem

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

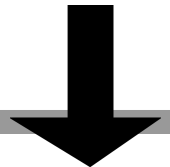
1. Do all Lagos street have drainage systems?
2. How do we prevent solid watse accumulation in drainage systems in the events of heavy rainfall?

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

1. Environmental Inspection by public health agents from either local or state secteriate
2. State Ministry of Public Health help line for complaint.

Abstraction (How would you abstract this problem?)

Graphic Organizer



Iteration 4

Problem Identification

Using data to identify streets that either require construction of drainage channels or removal of solid watse from the drainage sytstem to help prevent flooding during rainfall?

To set up your identified problem

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

Ministry activities:

Gather an updated list of streets that requires:
- construction of drainage channels
- removal of solid waste from its drainage systems

Plan, schedule, assign implementation base on the list:
- construction of drainage channels
- removal of solid waste from

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

1. Data from Residential help line.
2. Data from online platform for residential report.
3. Conduct weekly environmental inspection.

Abstraction (How would you abstract this problem?)

Ignore streets whose drainage systems are clean and through, without blockage

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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?)

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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?)

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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

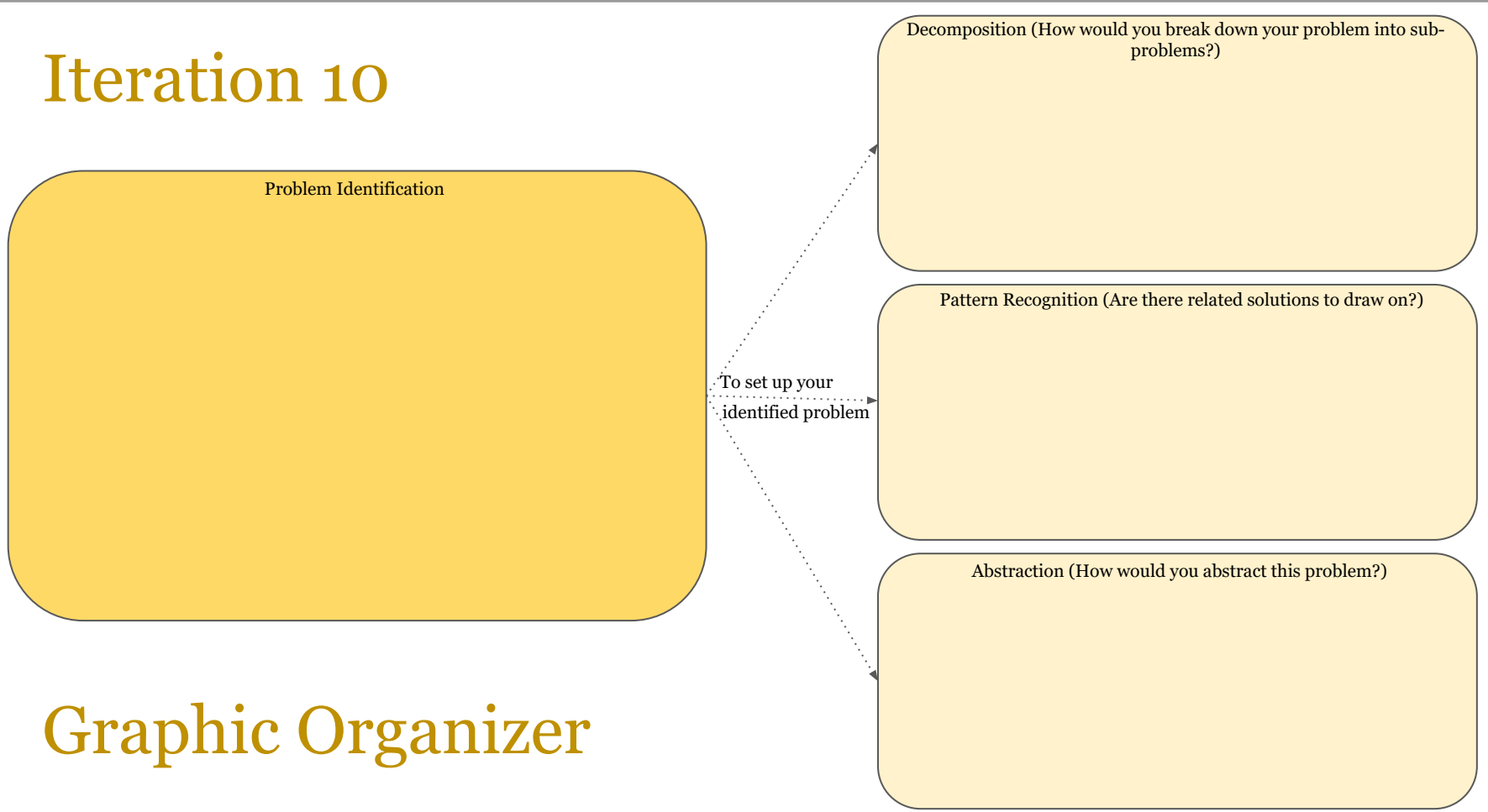
Decomposition (How would you break down your problem into sub-problems?)

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

Abstraction (How would you abstract this problem?)

Graphic Organizer

Iteration 10



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