# Problem Solving Using Computational Thinking

# University of Michigan

## Week 1: Foundations of Computational Thinking

* Problem Identification: Problem identification involves identifying a problem and determining if it’s appropriate for a computer based solution.
* Decomposition: Decomposition involves breaking down a complex problem into smaller, more specific problems.
* Pattern Recognition: Pattern recognition involves noticing and describing similarities in smaller, more decomposed problems.
* Abstraction: Abstraction involves filtering out or ignoring less relevant information.

Quiz:

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

## Week 2: Case Study: Airport Surveillance and Image Analysis

Diagram, text

Description automatically generated

Diagram

Description automatically generated

Diagram, text, chat or text message

Description automatically generated

Quiz:

Graphical user interface, text, application, email

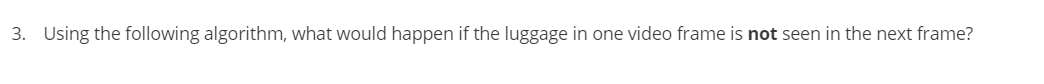
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Graphical user interface, text, application

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Graphical user interface, text, application

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Graphical user interface, text, application, email

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## Week 2: Case Study: Epidemiology

Graphical user interface, diagram, application

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Diagram

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Graphical user interface, diagram, application

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Quiz:

Graphical user interface, text, application

Description automatically generated

Graphical user interface

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Text

Description automatically generated

Waterfall chart

Description automatically generated with medium confidence