Excel

Practical Assignment: Fusion

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universidade
de aveiro
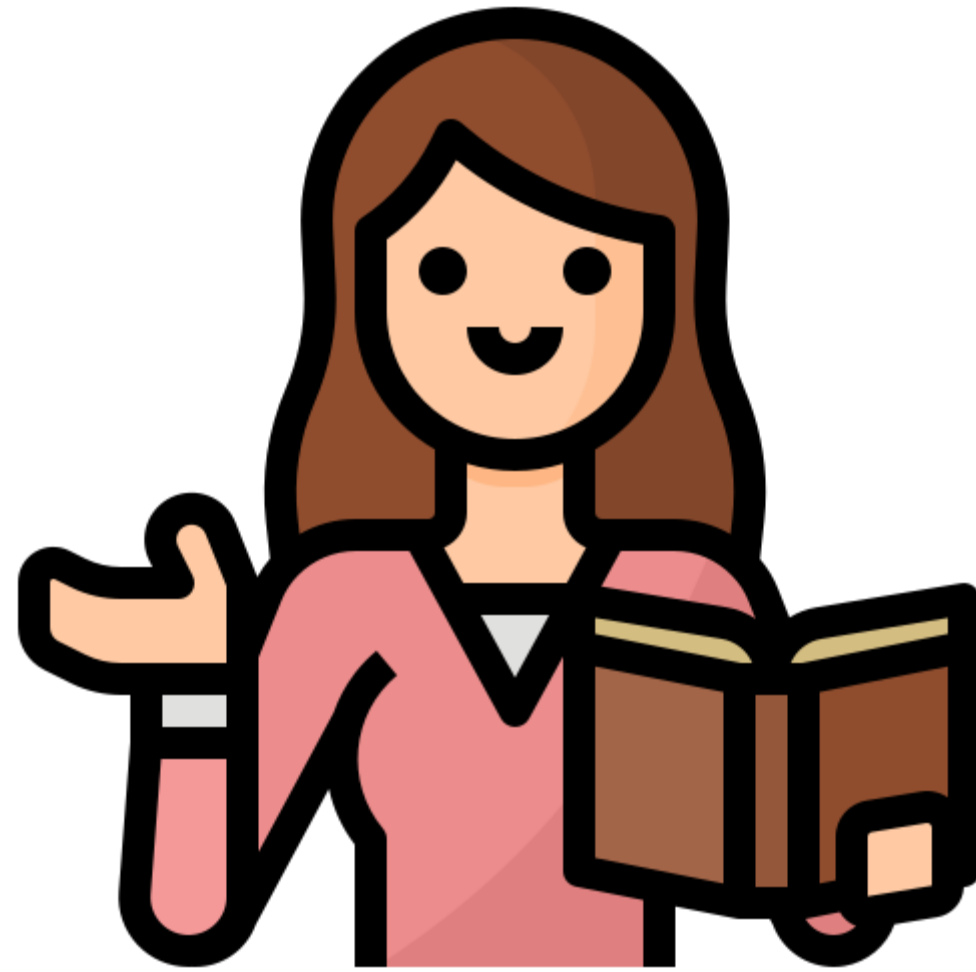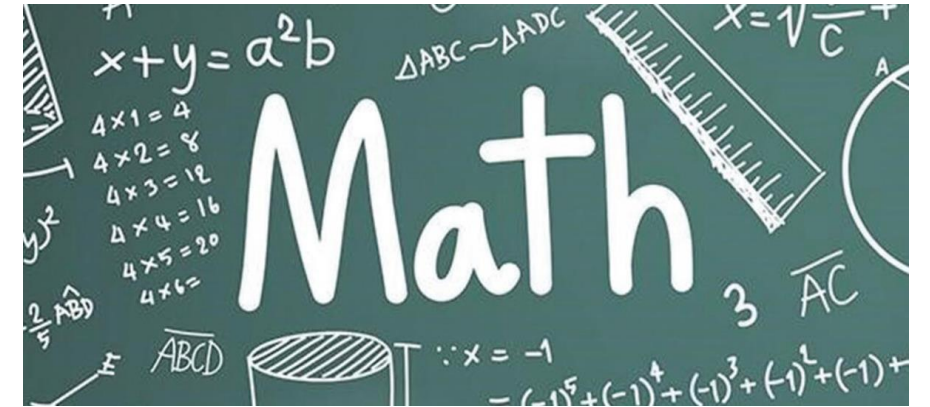
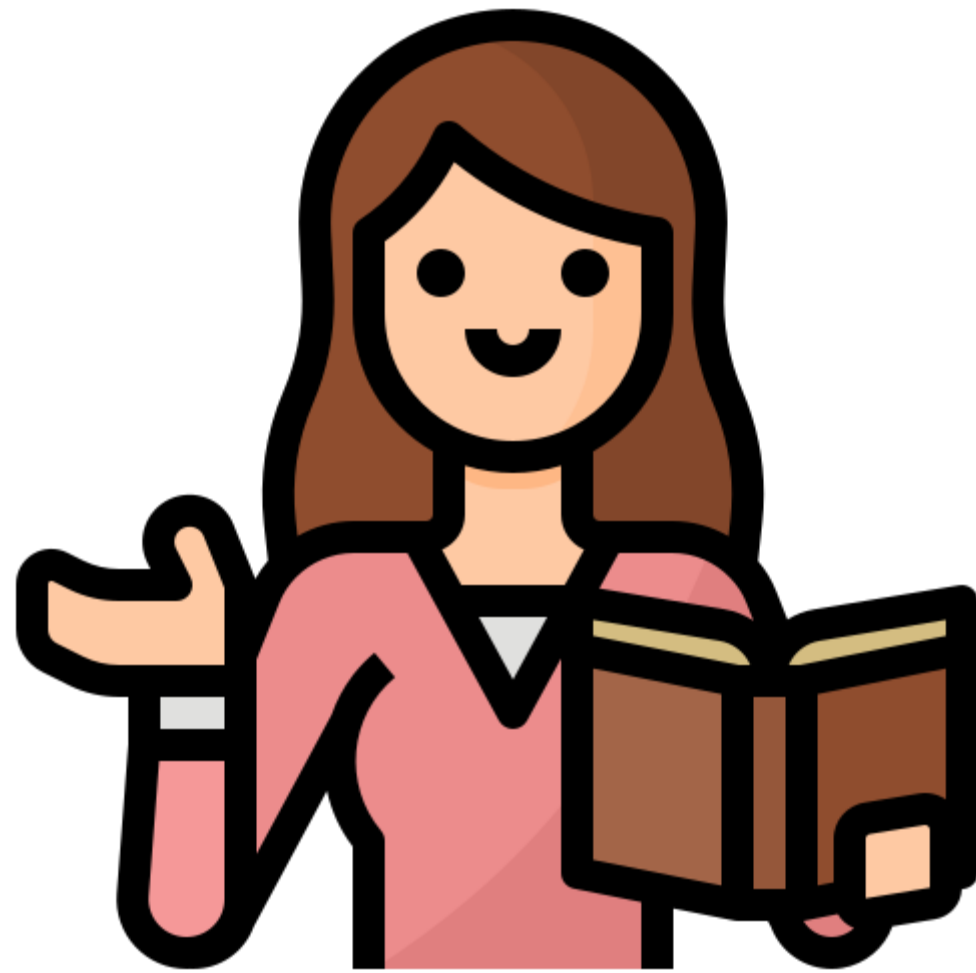# The following scenario is based on real life events

Scenario

Middle School Teacher
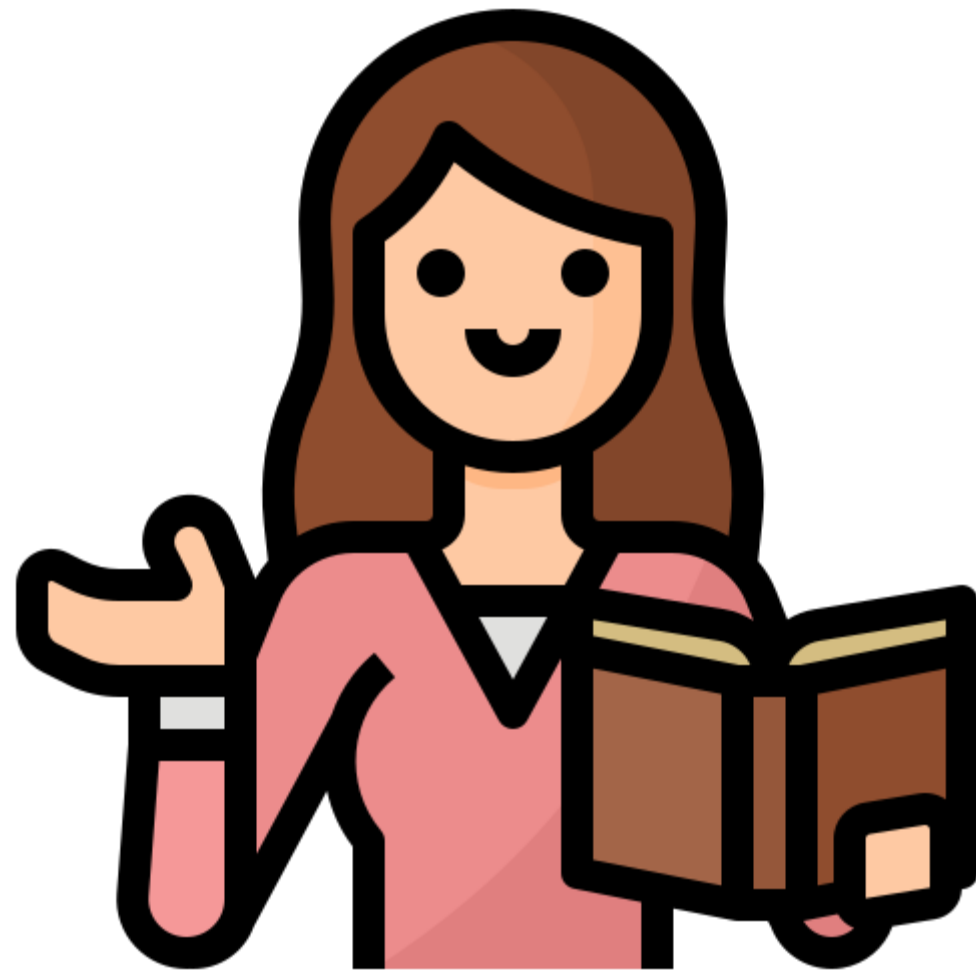
Scenario

Middle School Teacher

4 Classes   ×   ± 25 Students Each
_____

=   100 Students per Year

Scenario

Middle School Teacher

$$\frac{100 \text{ Students per Year} \quad \times \quad 16-20 \text{ Question Tests}}{= \quad \textbf{2 THOUSAND cells to fill!}}$$

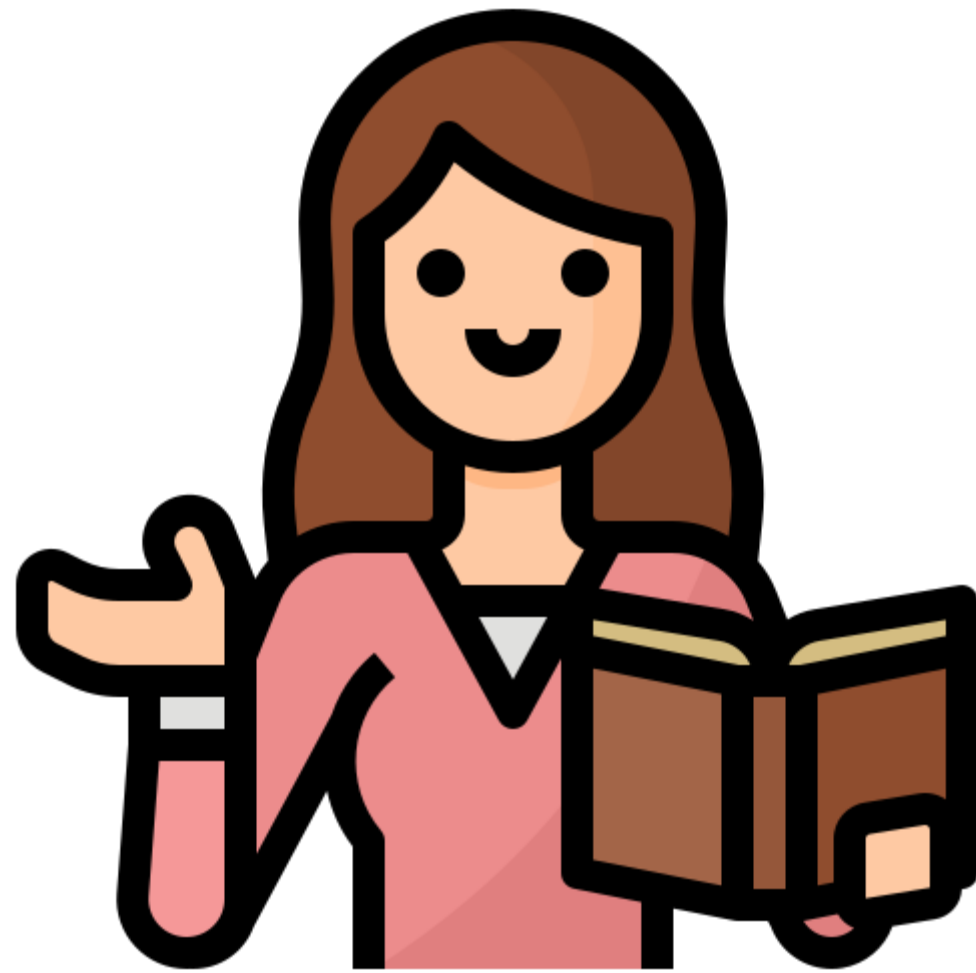# Scenario
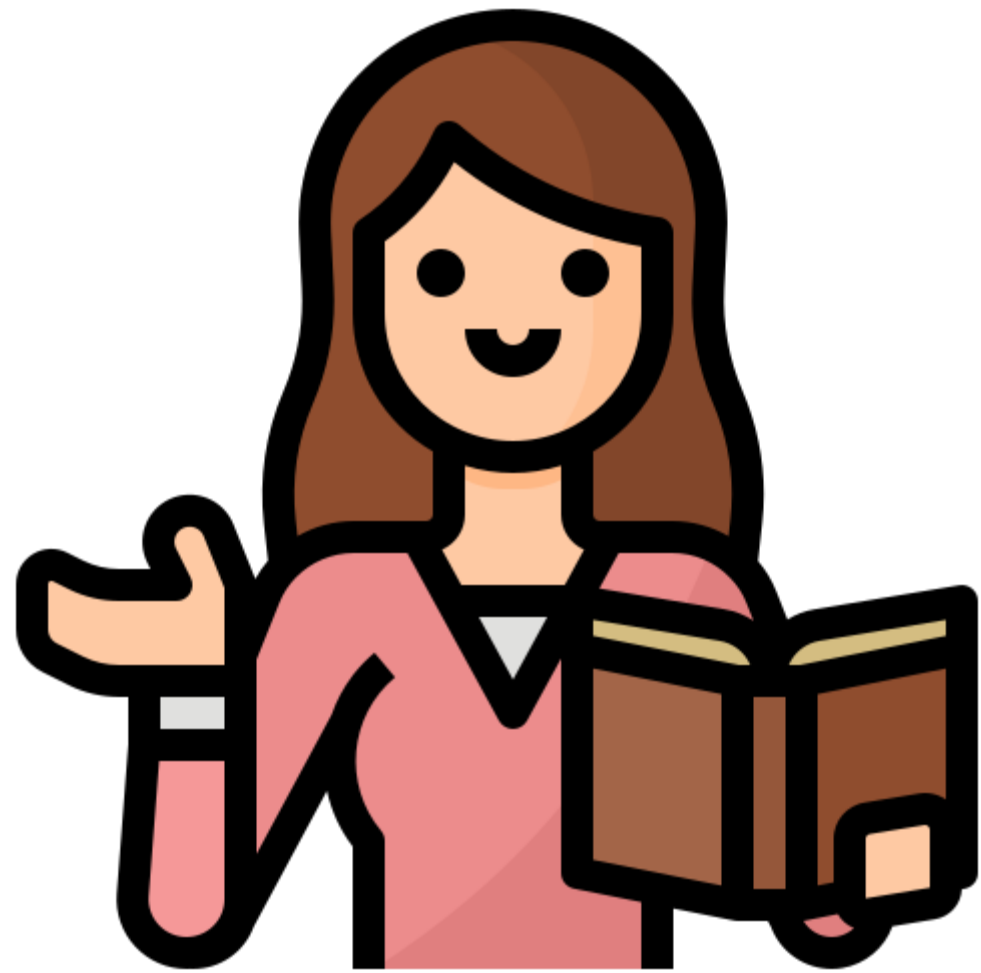
Middle School Teacher

How do you make this process less time consuming?

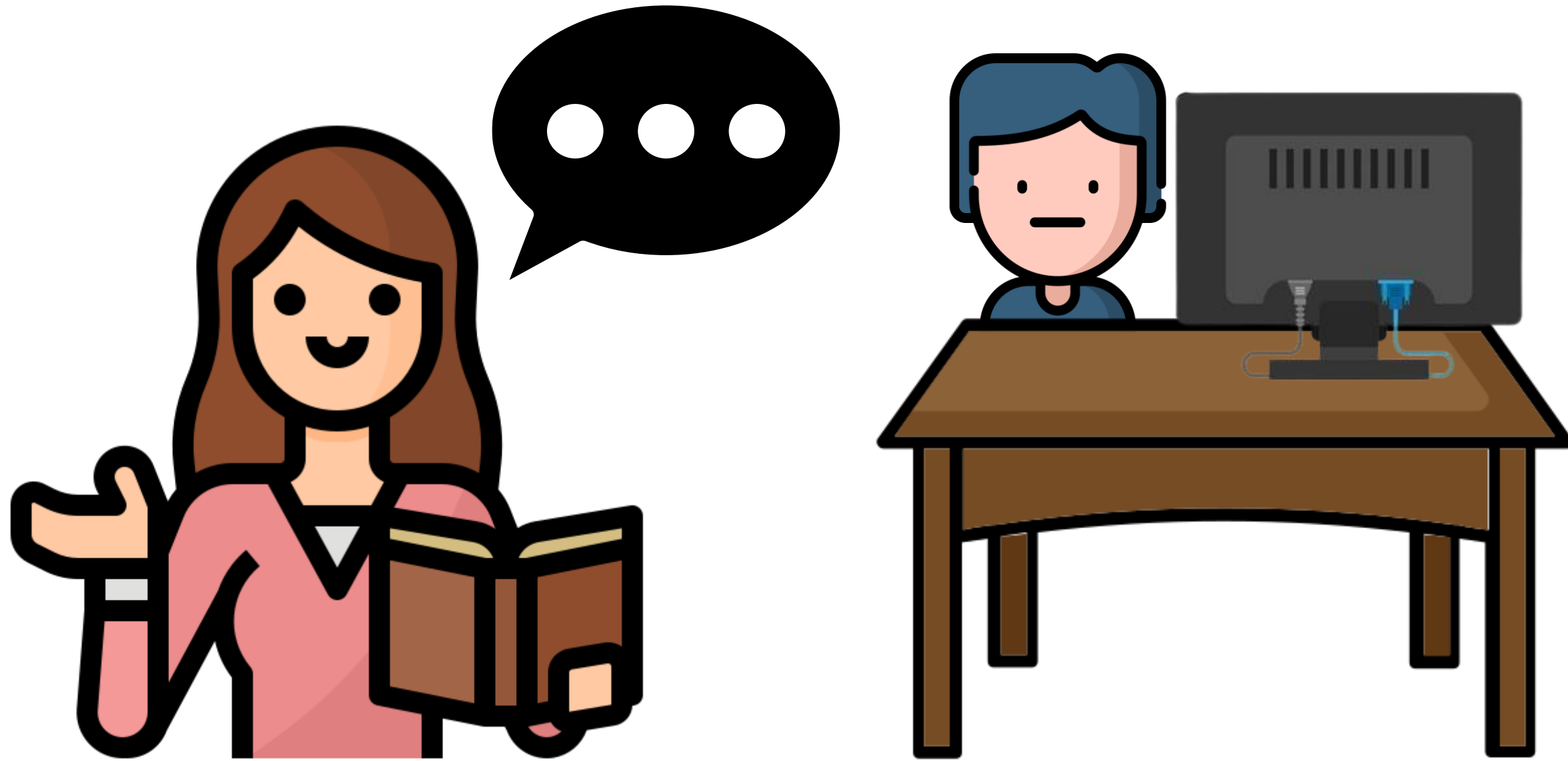# Scenario

Middle School Teacher

EASY!

Scenario

Scenario

Microsoft® Excel

What is our application

Enables hands-free control through voice commands and gesture recognition. Designed to enhance accessibility and productivity by allowing users to navigate, edit, and manipulate spreadsheets without touching the keyboard or mouse.

Speech interaction and audio feedback

Natural voice commands for all essential Excel operations as well as real-time audio feedback confirming user actions and providing status updates.

Gesture recognition through Xbox Kinect

Integration with Xbox Kinect sensor for hand and body movement tracking allowing gesture-based controls for scrolling, zooming, and other operations.
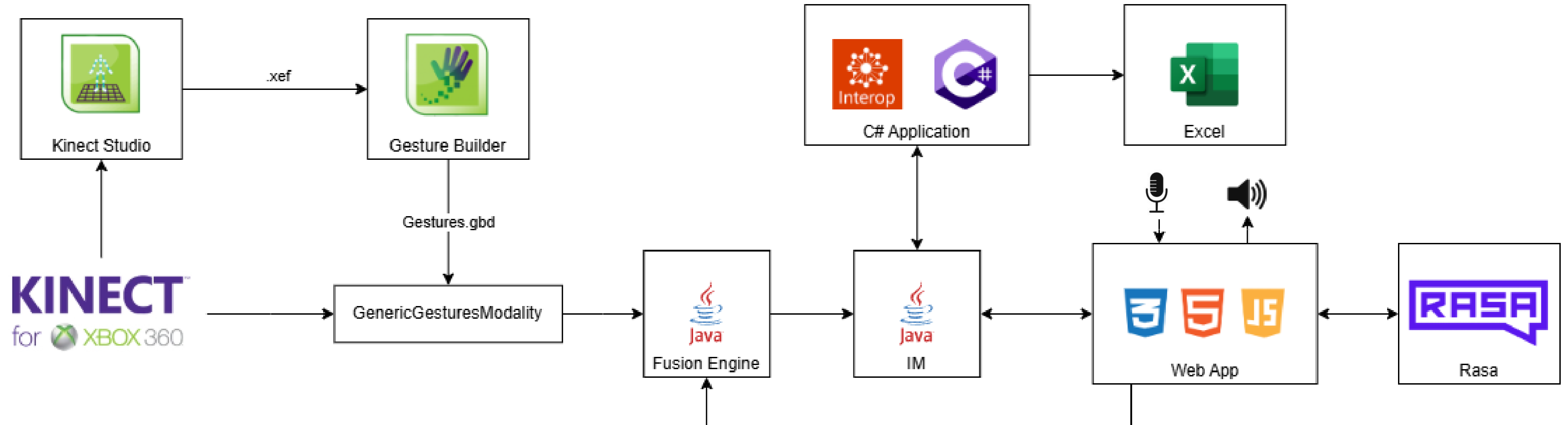
Live Demo

Diagram

Fusion Functionalities

Complementary

Write Content with Styles

- Write Speech + Bold Gesture
- Write Speech + Italic Gesture
- Write Speech + Underline Gesture

Select and Copy/Cut/Paste

- Select Speech + Copy Gesture
- Select Speech + Paste Gesture
- Select Speech + Cut Gesture

Delete

- Delete Speech + Cross Gesture

Close

- Close Speech + Cross Gesture

Lock View

- Select Speech + Lock Gesture
- Search Speech + Lock Gesture

Worksheet

- Worksheet Speech + Scroll Right Gesture
- Worksheet Speech + Scroll Left Gesture

Redundant

Copy

- Copy Speech or Copy Gesture

Cut

- Cut Speech or Cut Gesture

Paste

- Paste Speech or Paste Gesture

Single

Speech

- Select cells/area
- Write content
- Change text size
- Change text style
- Change text color
- Change cell fill
- Change cell limits
- Save
- Help
- Clean cell
- Move to neighbor cells
- Find current cell
- Median/Average/Sum/Max/Min
- Affirm / Deny / Greet / Goodbye

- Search by word/column/row
- Select column/row
- Select area (4x8)
- Origin

Gestures

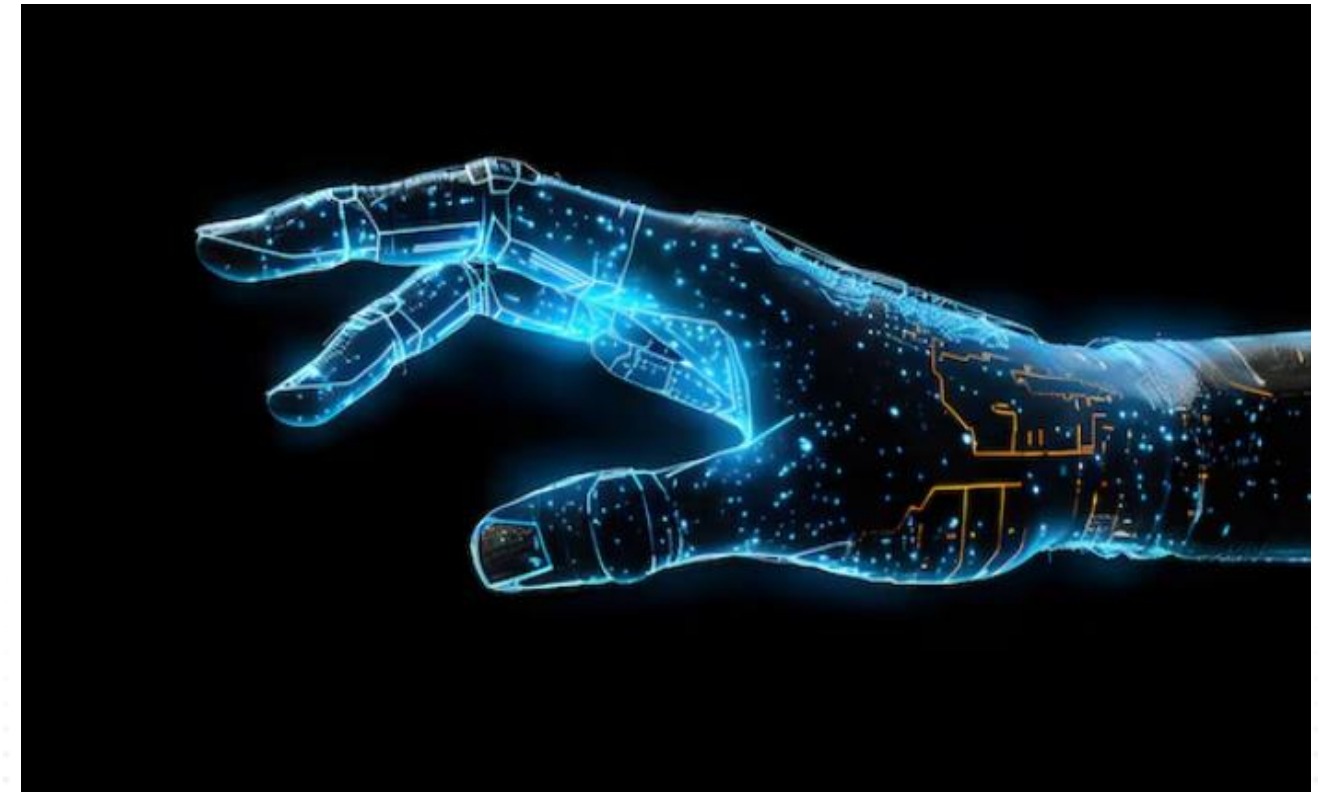- Scroll Up/Down/Right/Left
- Zoom In/ Zoom Out

Information

Speech

- Intents: 32
- Entities: 11

Gestures

- Amount: 14
- Number of executions per video: ± 17

Thank You!

Feel free to ask questions.