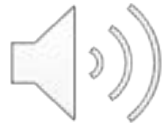
Speak Your Mind: Introducing Aptly, The Software Platform that turns Ideas into Working Apps

David Y.J. Kim, Ashley Granquist, Evan Patton, Mark Friedman, Hal Abelson



Introducing the Team and the Goal

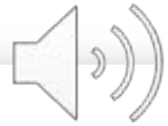
The Hello Navi team, six middle-school girls from the border town of Resaca, Texas, built an app to help their blind classmate navigate the halls of their school. They were invited to show off their work at the White House.

A group of young women from Moldova, in Eastern Europe, built a crowd-sourcing app to help residents of their country access safe drinking water sources. In a country with a high rate of water-borne Hepatitis A, this app has the potential to make an enormous difference in the country's public health.

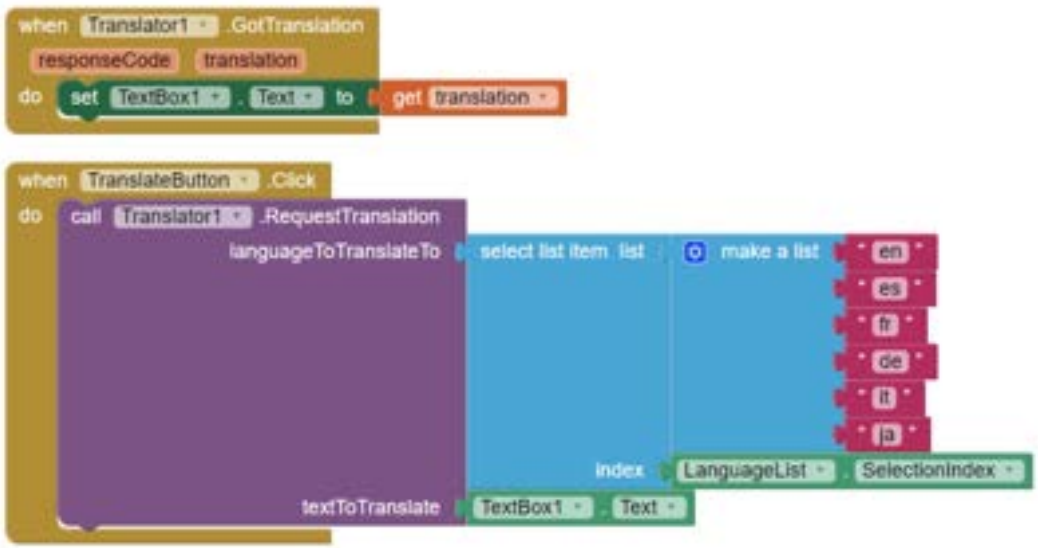
A group of high-school girls in Lagos, Nigeria created an app to help traffic police catch offenders. They were cited as prime examples of young entrepreneurship and honored at a reception hosted in Brussels by Nigeria's first lady.

A tenth-grader from Chennai, India has created several important apps, including one to help coordinate relief efforts following flooding in the area, another to allow parents to track students on buses that have otherwise unreliable schedules, and a third that aims to help reduce the cost and complexity of vehicle fleet maintenance.

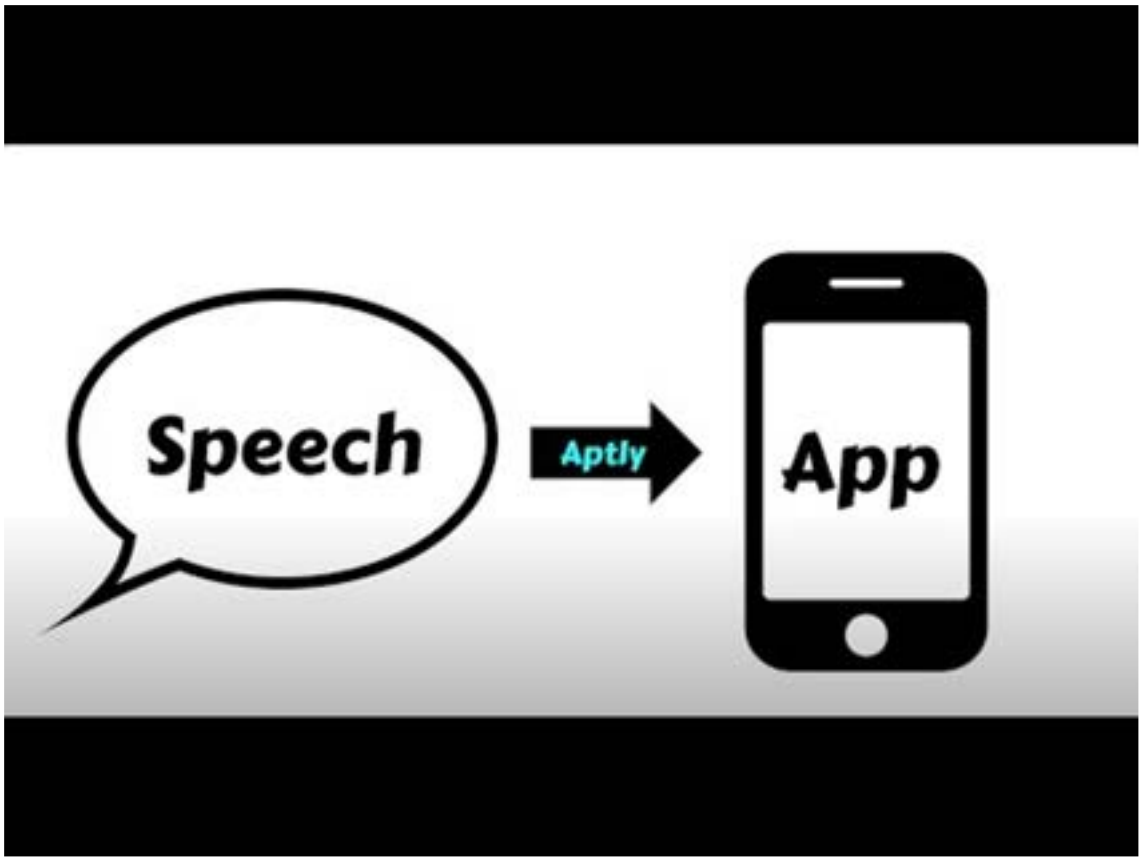
The MIT App Inventor group is collaborating with the Hong Kong Jockey Club, the Education University of Hong Kong, and the City University of Hong Kong in a project known as CoolThink@JC. Over the next four years CoolThink@JC aims to integrate computational thinking into all Hong Kong primary schools.



Making App creation easier via Block coding



Aptly Demo



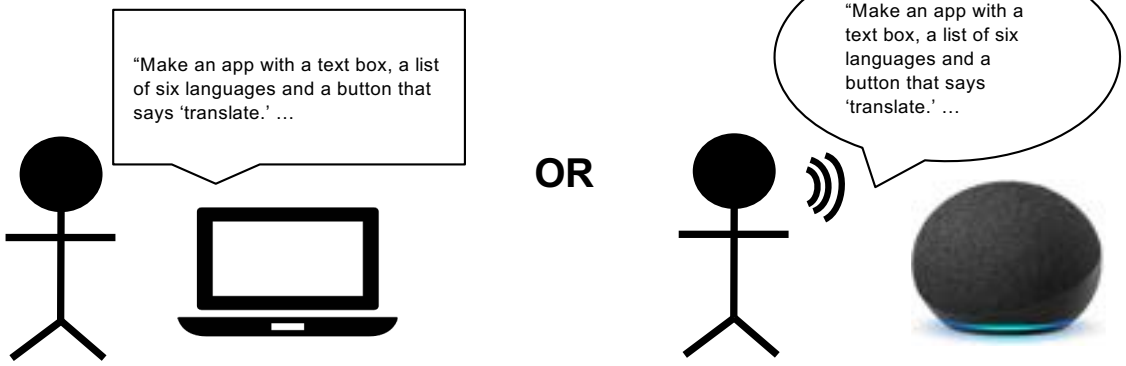
Code generative models

GitHub
Copilot

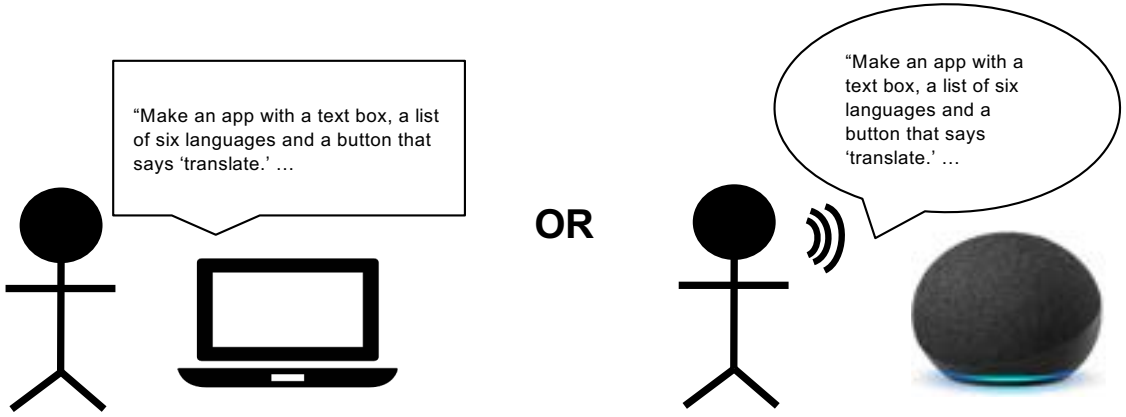
sentiment.ts

```ts
#!/usr/bin/env ts-node

import { fetch } from "fetch-h2";

// Determine whether the sentiment of text is positive
// Use a web service
async function isPositive(text: string): Promise<boolean> {
  const response = await fetch(`http://text-processing.com/api/sentiment/`, {
    method: "POST",
    body: `text=${text}`,
    headers: {
      "Content-Type": "application/x-www-form-urlencoded",
    },
  });
  const json = await response.json();
  return json.label === "pos";
}
```

How Aptly Works



How Aptly Works



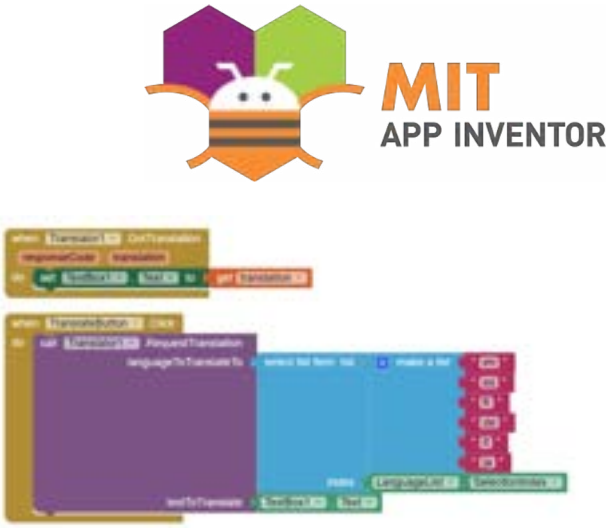
How Aptly Works

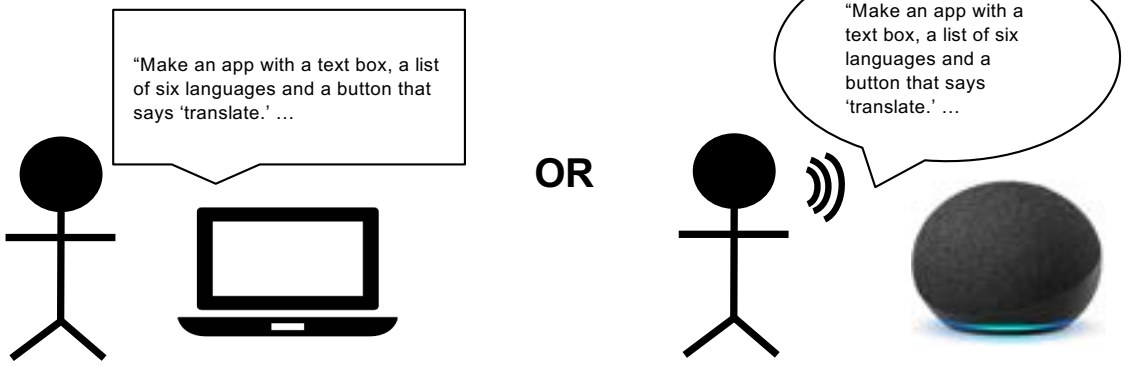
“Make an app with a text box, a list of six languages and a button that says ‘translate.’ …

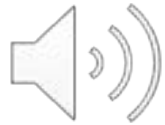
OR

“Make an app with a text box, a list of six languages and a button that says ‘translate.’ …

How Aptly Works







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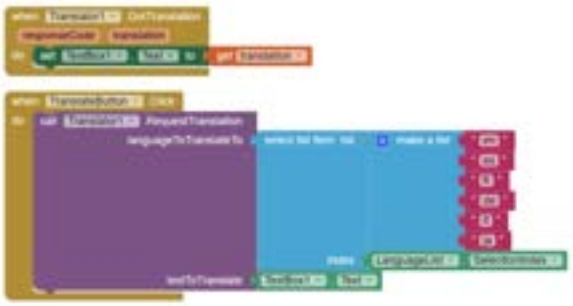

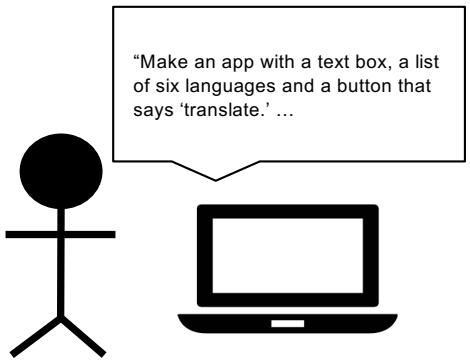

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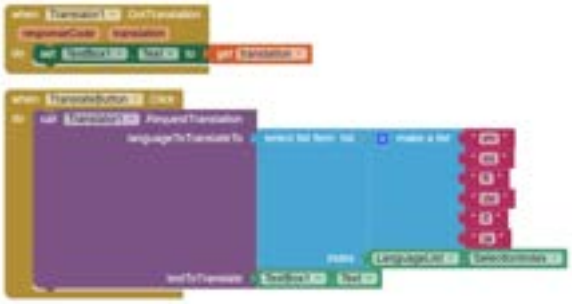
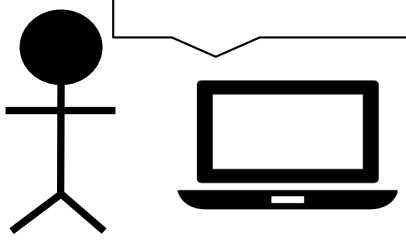


"Make an app with a text box, a list of six languages and a button that says 'translate.' …

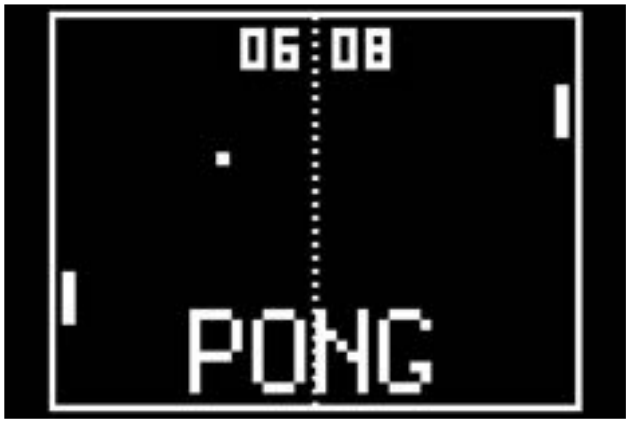


OR

"Make an app with a text box, a list of six languages and a button that says 'translate.' …

Prompt Engineering

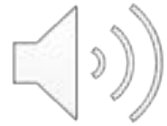
"Make an app called Pong, where a ball bounce around…"



MIT APP INVENTOR

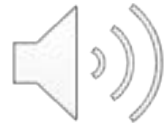
Codex

OpenAI, openai.com/blog, 2021



Prompt Engineering


```
Make the game Pong.
```



Prompt Engineering

Few-Shot Examples
Codex learns from

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'''Create a ball.'''
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'''Create a paddle.'''
Paddle = Rectangle(height = 2cm,
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'''Increment the score.'''
int score = 0
if userWins():
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'''Make the game Pong.'''
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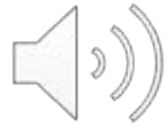

Prompt Engineering

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App/Task Description
Codex completes

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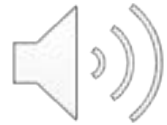

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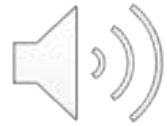

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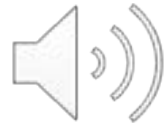

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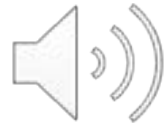

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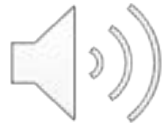

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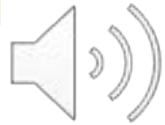
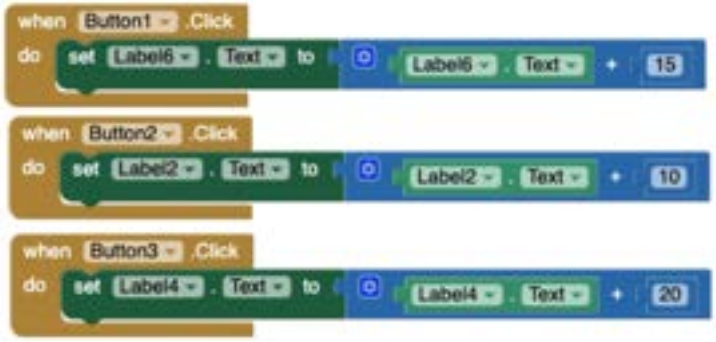


Working example (1)

Make a game that has a button in the middle of the screen.
When a user clicks the button, increment the score by 1

Working example (2)

Create a character that has attributes: intelligence, bravery, and strength. If the reader clicks the 'read' button, increment intelligence by 10. If the reader clicks the 'Test your limits' button, increase bravery by 20. If the reader clicks the 'lift weights' button, increase strength by 15.



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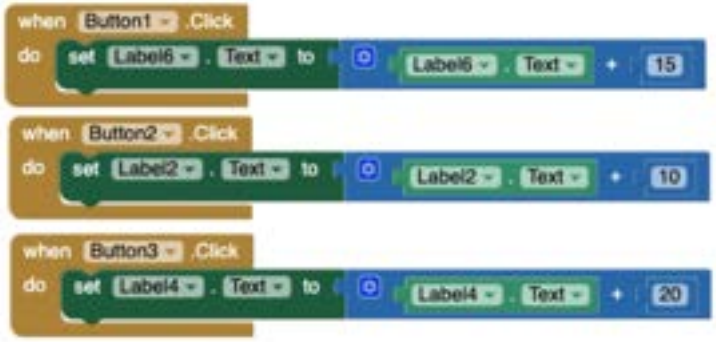

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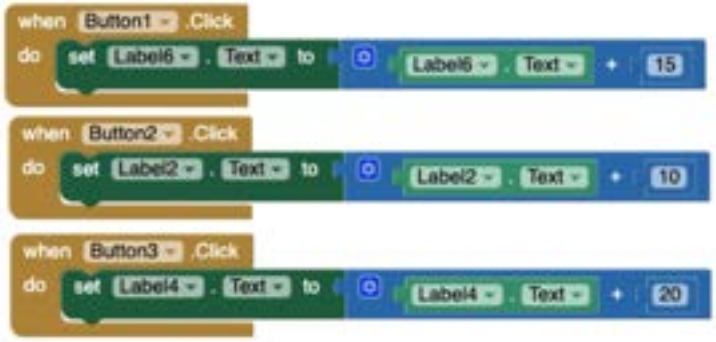
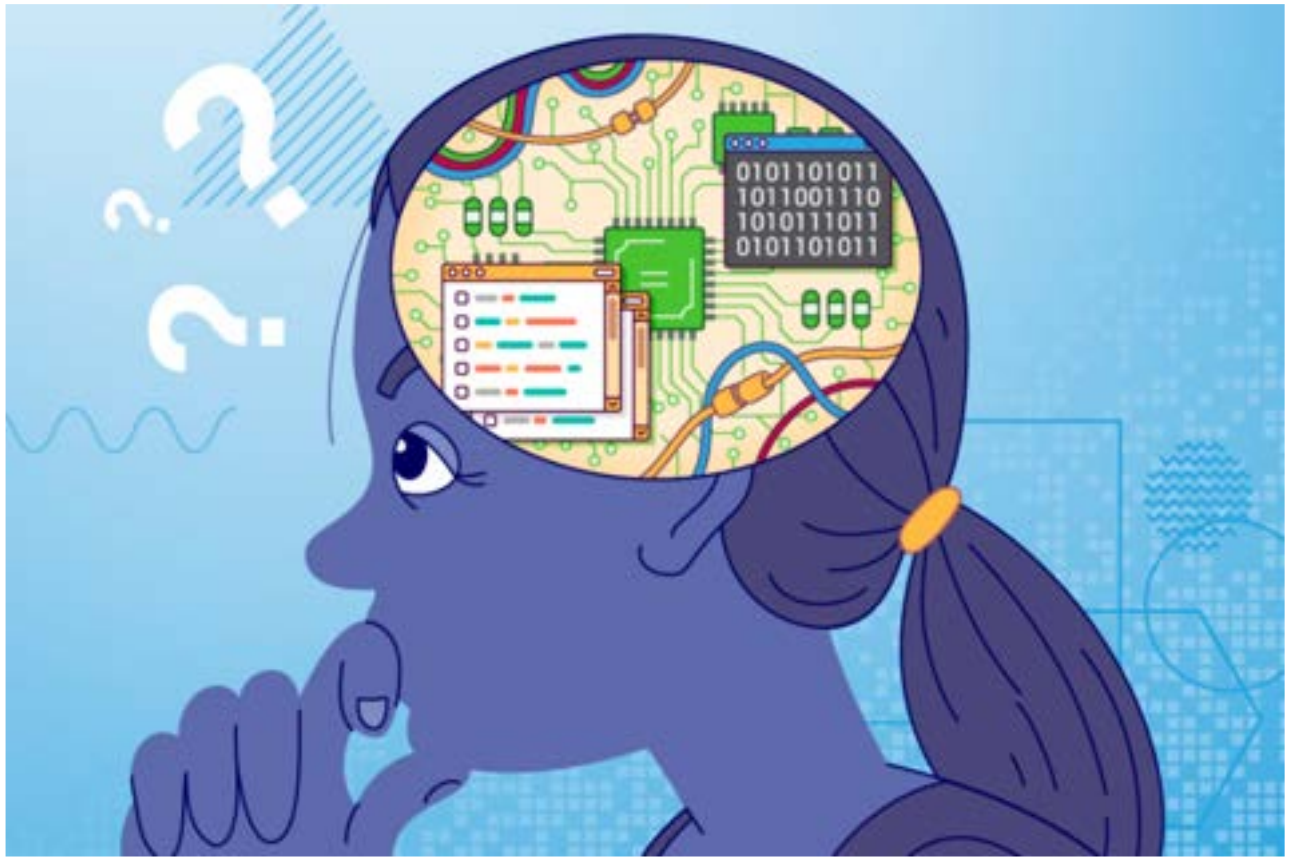


Implication on Computational Thinking Education



Will Aptly be a crutch or a springboard?

Calculator: Its Controversy and Advantages for Learning Quantitative Literacy[1]

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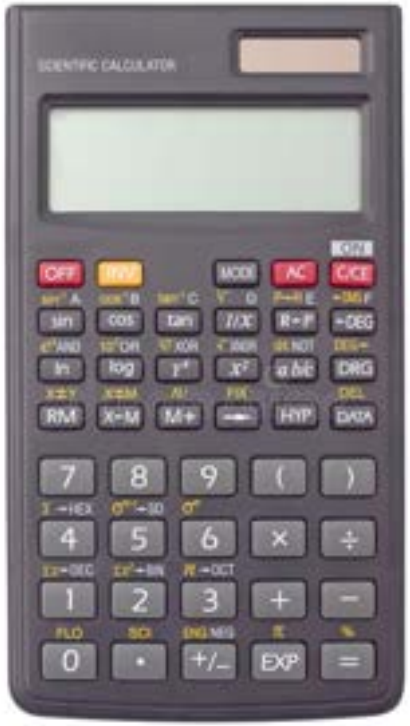
Yogyakarta State University

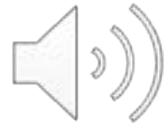
In modern era, the development of technology, including calculator, should be of concern to the practice of education. However, the use of calculator for mathematics learning is still in debate. Many people believe that calculator has adverse reaction for mathematics learning, such as students' lack of understanding about the basic concept of mathematics. Despite this adverse reaction, many other people do believe that calculator can be used to help students constructing their knowledge on mathematics. For this reason, this article provides example of the use of calculator for developing the concept of quantitative literacy.

Keywords: calculator, quantitative literacy



Further Research

- *Can we help kids handle the syntactic challenge describing their desired app?*
  - *“Make an app with a textbox, a list of six languages and a button that says “translate”. When~*
  - *Challenge for kids, can we make it easier?*
- *Would an AI augmented app inventor platform help students create mobile applications?*
  - *Can kids and AI cooperate?*



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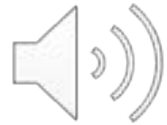

Questions