

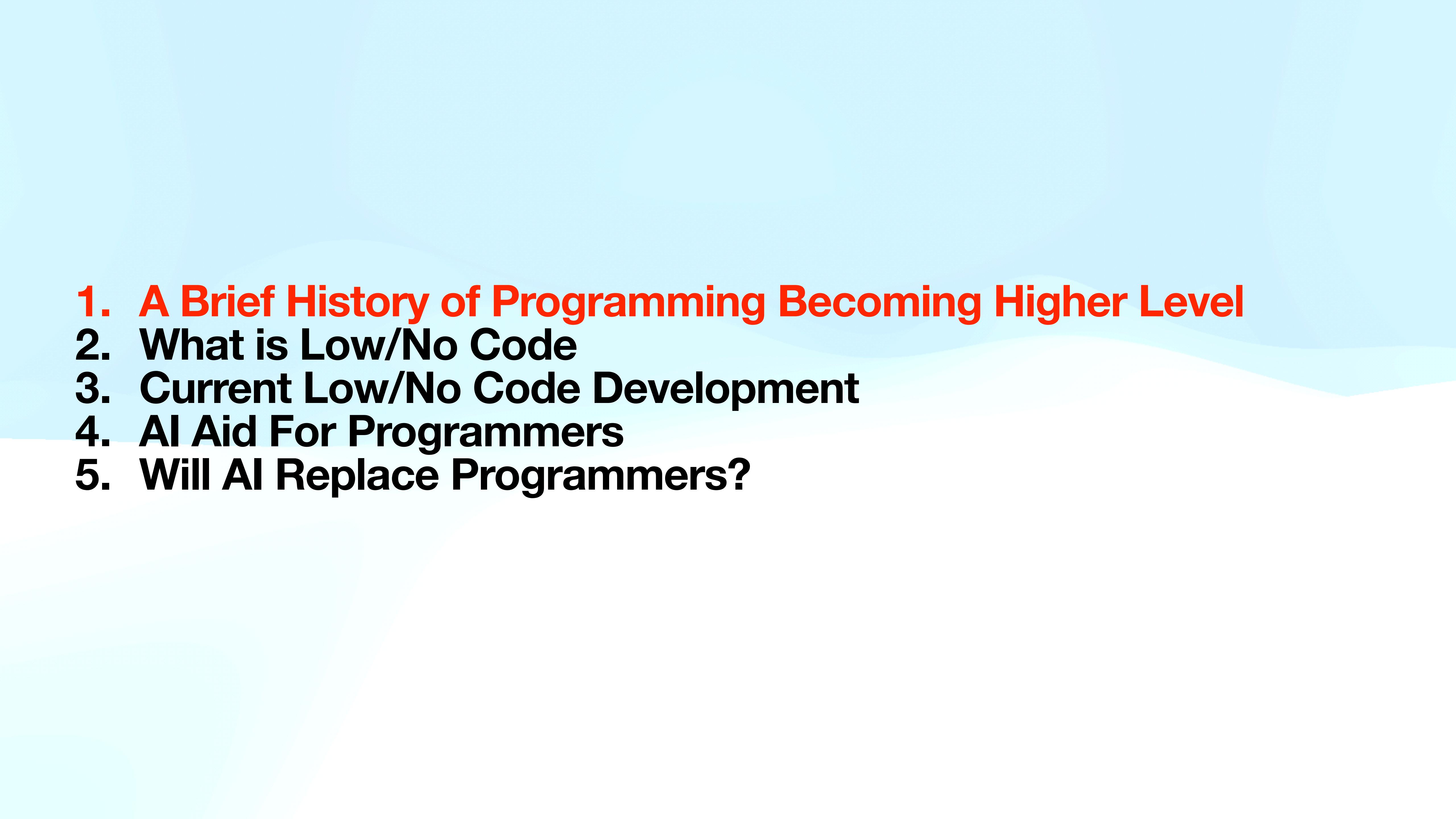
# **Low/No Code and AI Coding Aid**

**How they are currently affecting the industry and What is their potential future**

**Alex Hernandez 1/20/2023**

# What We Will Be Discussing

1. A Brief History of Programming Becoming Higher Level
2. What is Low/No Code
3. Current Low/No Code Development
4. AI Aid For Programmers
5. Will AI Replace Programmers?

- 
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# A Brief History Of Code Becoming Higher Level

## Big Surprise, it makes coding more accessible

- Assembly language was created to relieve programmers from having to code in machine language.
- FORTRAN is considered to be the world's first high level language.
- It eventually lead to creation of BASIC.
- Python is praised for being very user friendly.

**W1-0.ram**

The screenshot shows a debugger interface with two main panes. The left pane displays a memory dump of the file W1-0.ram, showing various assembly instructions and their comments. The right pane displays the assembly code for a program named hello.asm.

Memory dump (Left Pane):

```
0011000000000000 ; read n -> acc ;
1011000000001010 ; jump to Done if n < 0. ;
0101000000010000 ; add sum to the acc ;
0010000000010000 ; store the new sum ;
1001000000000000 ; go back & read in next number ;
0001000000010000 ; load the final sum ;
0100000000000000 ; output the final sum ;
0000000000000000 ; stop ;
0000000000000000 ; 2-byte location where sum is stored ;
0000000000000000 ; 
0000000000000000 ; 
0000000000000000 .
```

Assembly code (Right Pane):

```
; -----
; Writes "Hello, World" to the console using only system calls. Runs on 64-bit Linux only.
; To assemble and run:
;
;     nasm -felf64 hello.asm && ld hello.o && ./a.out
;

global    _start

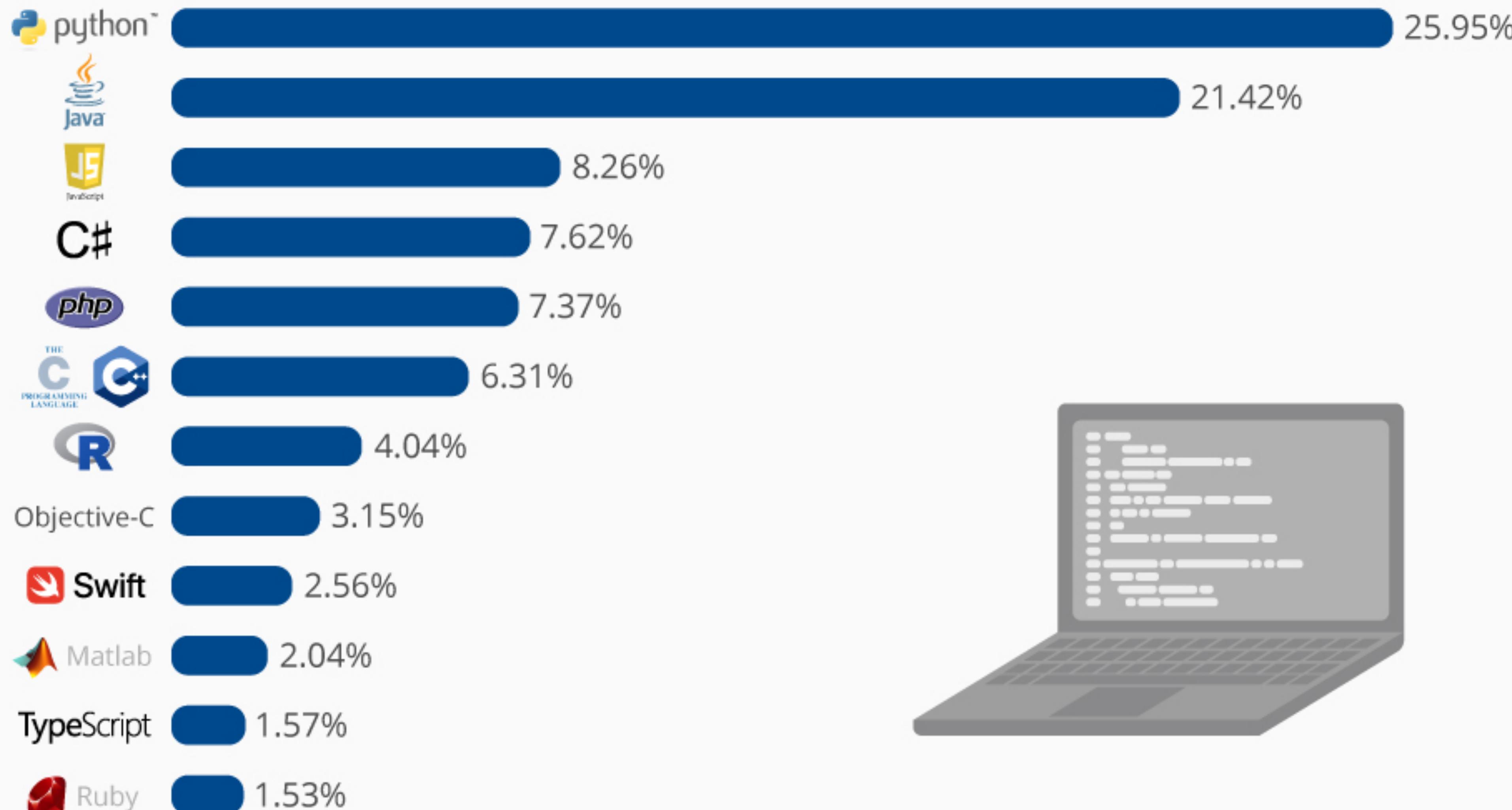
section   .text
_start:  mov      rax, 1          ; system call for write
        mov      rdi, 1          ; file handle 1 is stdout
        mov      rsi, message    ; address of string to output
        mov      rdx, 13         ; number of bytes
        syscall
        mov      rax, 60          ; system call for exit
        xor      rdi, rdi        ; exit code 0
        syscall

section   .data
message: db      "Hello, World", 10 ; note the newline at the end
```

```
6 # 1
7 my_investments = [1000, 2000, 3500]
8 sum_of_investments = sum(my_investments)
9
10 # 2
11 words = ['first', 'second', 'third']
12 for idx, word in enumerate(words, 1):
13     print(f'{idx}: {word}')
14
15 # 3
16 classes = ['Intro to Python', 'R Data Analysis', 'Python Machine Learning']
17 grades = [98, 96, 89]
18 grade_dict = dict(zip(classes, grades))
19 print(grade_dict)
```

# The Most Popular Programming Languages

Share of the most popular programming languages in the world\*

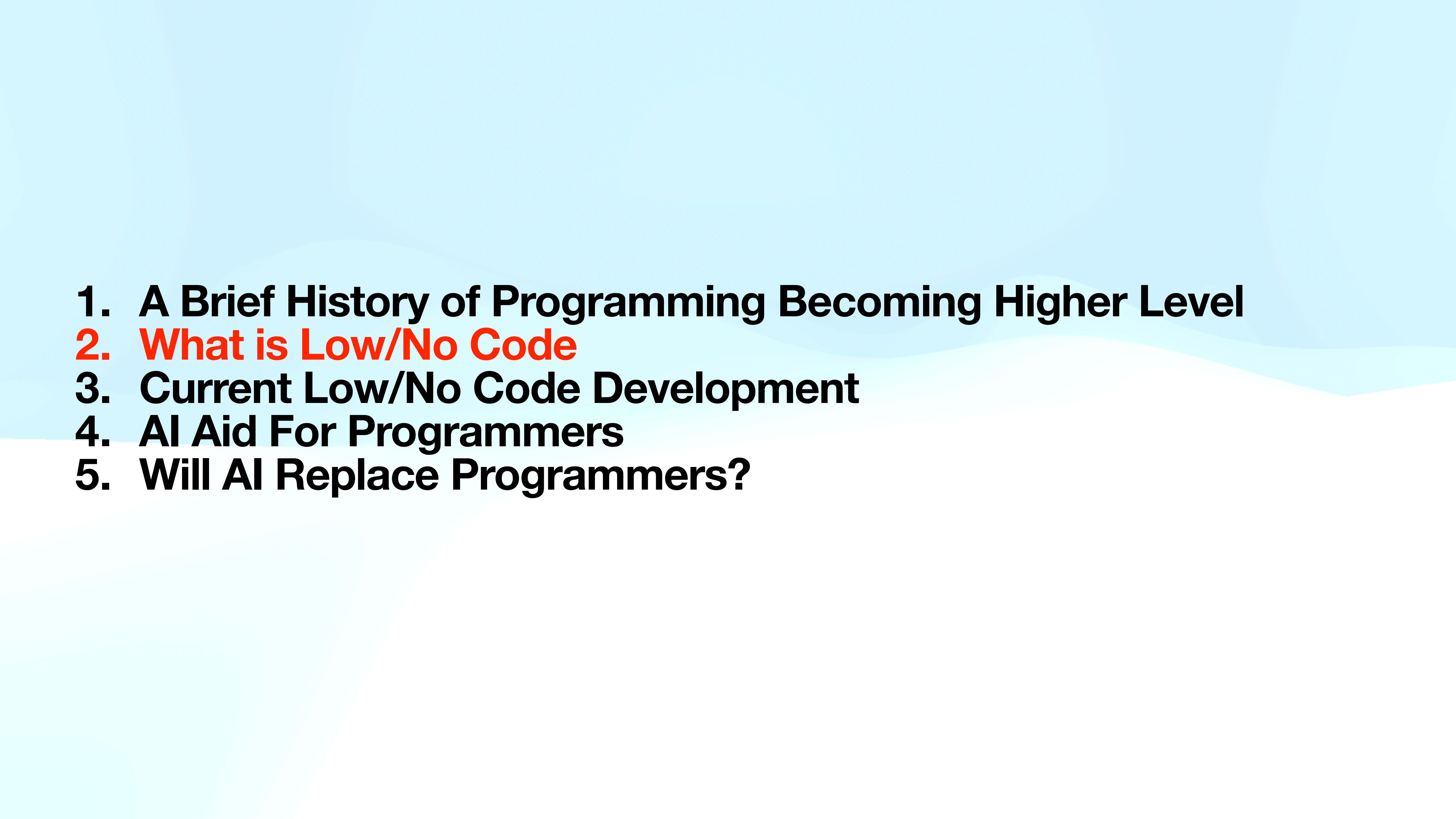


\* Based on the PYPL-Index, an analysis of Google search trends  
for programming language tutorials.



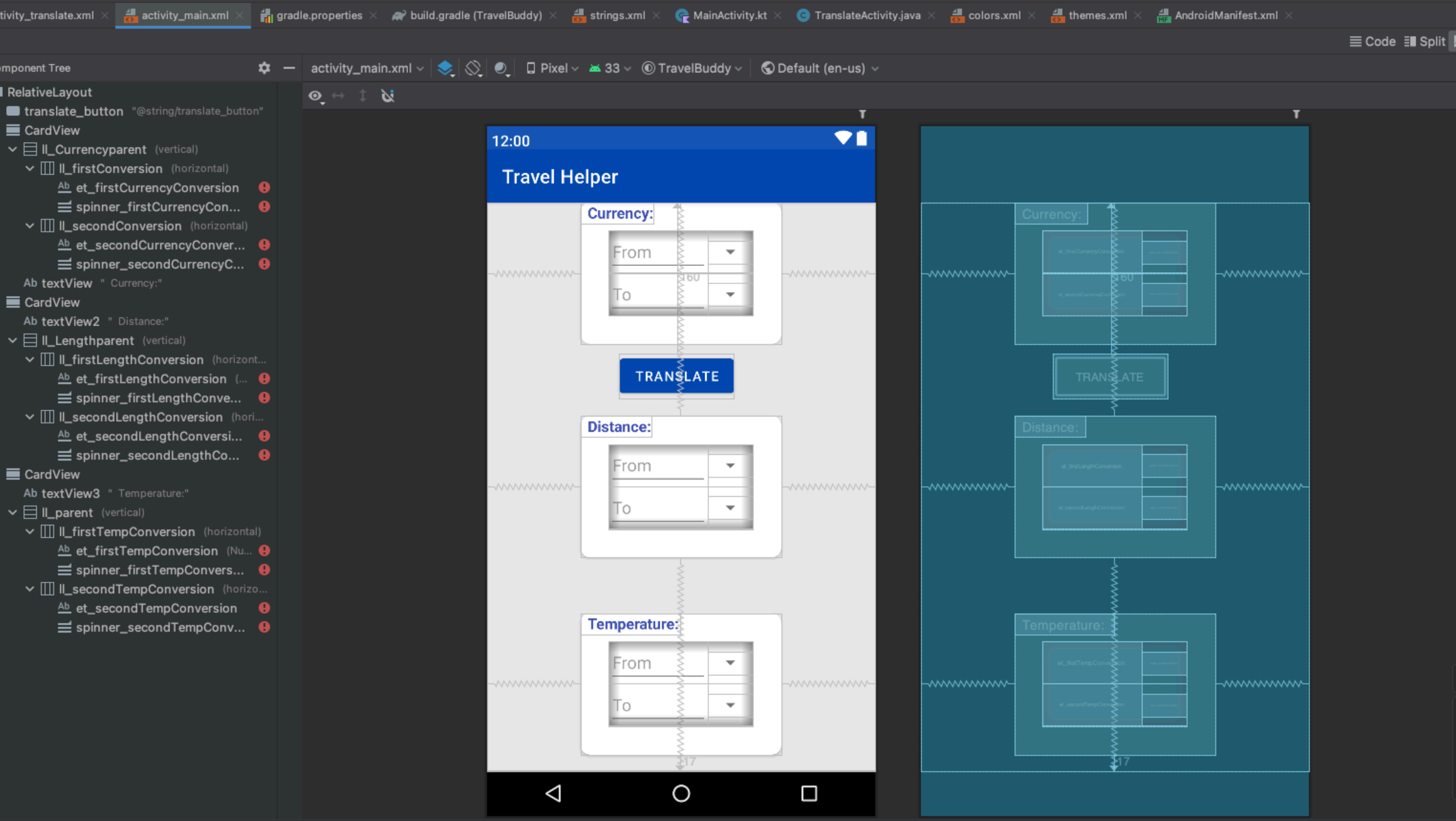
@StatistaCharts

Source: PYPL

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# What Is Low Code/No Code?

- Low Code: Hybrid of GUI and Conventional Coding
- No Code: Developing Without Writing Any Code



```
1 <?xml version="1.0" encoding="utf-8"?>
2 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     xmlns:tools="http://schemas.android.com/tools"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"
7     tools:context=".MainActivity"
8     android:background="#E8E8E8">
9
10    <Button
11        android:id="@+id/translate_button"
12        android:layout_width="wrap_content"
13        android:layout_height="wrap_content"
14        android:layout_alignParentTop="true"
15        android:layout_marginLeft="140dp"
16        android:layout_marginTop="160dp"
17        android:layout_marginBottom="18dp"
18        android:text="@string/translate_button"
19        tools:ignore="UnknownId" />
20
21    <androidx.cardview.widget.CardView
22        android:layout_width="wrap_content"
23        android:layout_height="wrap_content"
24        android:layout_centerHorizontal="true"
25        android:layout_marginStart="20dp"
26        android:layout_marginEnd="20dp"
27        android:layout_marginBottom="20dp"
28        app:cardCornerRadius="10dp">
29
30
31    <LinearLayout
32        android:id="@+id,ll_Currencyparent"
33        android:layout_width="wrap_content"
34        android:layout_height="wrap_content"
35        android:layout_centerInParent="true"
36        android:layout_margin="30dp">
```

- Protocol
- Operator
- Logic
- Loop
- Util
- Log
- Helper
- Storage
- Authorization
- AccessControl
- Exception

ID string 3c42b783ebfd0b2954303df141b87e03

method post ▾

end-point Url string https://california.syncreeengine.com/plan/entrance

header •, HashMap

Values Document Pair

key string Content-Type

value application/json ▾

datatype string ▾

description string Content-Type

required boolean true ▾

body •, HashMap

Values Document Pair

key string name

- 
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# No Code Usage

It is very fast

- A great benefit of No Code is that it often leads to very quick development.

## New York City has Deployed a Covid-19 Engagement Portal Built in Partnership with Unqork to Manage Growing Crisis

Unqork built the portal in 72 hours using its unique enterprise no-code platform

Additional capabilities include medical equipment donations and GetFoodNYC Delivery

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NEWS PROVIDED BY

[Unqork →](#)

Apr 01, 2020, 07:00 ET

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SHARE THIS ARTICLE

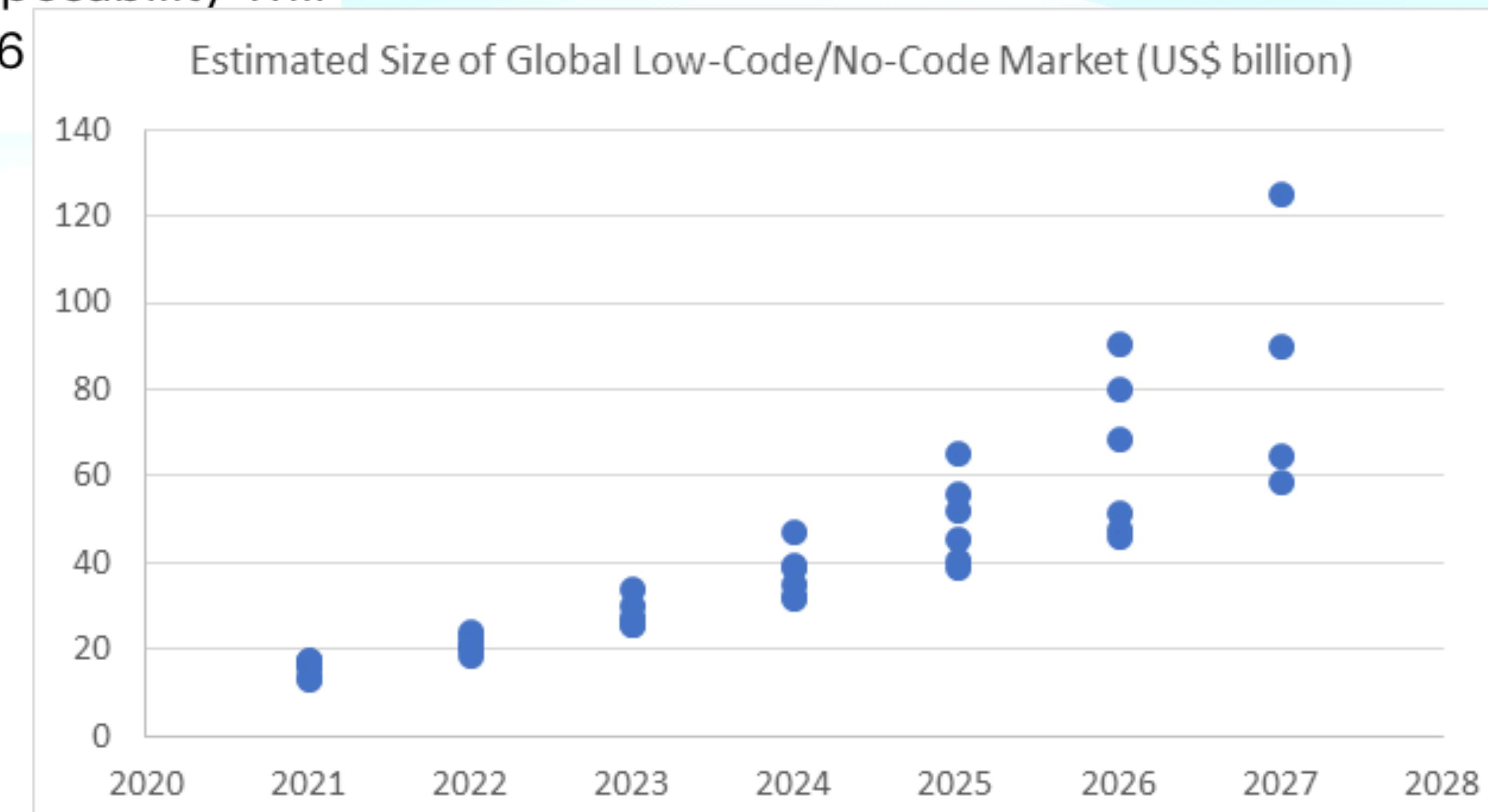


# How Quickly Low Code is Growing

STAMFORD, Conn., December 13, 2022

## Gartner Forecasts Worldwide Low-Code Development Technologies Market to Grow 20% in 2023

Business Technologists, Hyperautomation and Composability Will Drive Low-Code Technology Adoption Through 2026



- 
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parse\_expenses.py

write\_sql.go

sentiment.ts

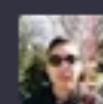
addresses.rb

```
1 import datetime
2
3 def parse_expenses(expenses_string):
4     """Parse the list of expenses and return the list of triples (date, value, currency).
5     Ignore lines starting with #.
6     Parse the date using datetime.
7     Example expenses_string:
8         2016-01-02 -34.01 USD
9         2016-01-03 2.59 DKK
10        2016-01-03 -2.72 EUR
11    """
12    expenses = []
13    for line in expenses_string.splitlines():
14        if line.startswith("#"):
15            continue
16        date, value, currency = line.split(" ")
17        expenses.append((datetime.datetime.strptime(date, "%Y-%m-%d"),
18                         float(value),
19                         currency))
20    return expenses|
```



# OpenAI





Create homepage for e commerce website in html with some css styling



I'd be happy to help you create a basic homepage for an e-commerce website in HTML and CSS. Here is some sample code to get you started:

html

Copy code

```
<!DOCTYPE html>
<html>
  <head>
    <title>My E-Commerce Website</title>
    <style>
      /* Add CSS styling here */
      body {
        font-family: Arial, sans-serif;
        margin: 0;
        padding: 0;
      }
      header {
        background-color: #333;
        color: #fff;
        padding: 20px;
        text-align: center;
      }
      header h1 {
        margin: 0;
      }
      nav {
        background-color: #eee;
        padding: 10px;
      }
      nav a {
        color: #000;
        text-decoration: none;
      }
    </style>
  </head>
  <body>
    <header>
      <h1>My E-Commerce Website</h1>
    </header>
    <nav>
      <a href="#">Home</a>
      <a href="#">About</a>
      <a href="#">Products</a>
      <a href="#">Contact</a>
    </nav>
    <section>
      <h2>Our Products</h2>
      <div>
        <img alt="Product 1" data-bbox="100 100 200 200"/>
        <div>
          <h3>Product 1</h3>
          <p>Description of Product 1</p>
          <button>Buy Now</button>
        </div>
      </div>
      <div>
        <img alt="Product 2" data-bbox="250 100 350 200"/>
        <div>
          <h3>Product 2</h3>
          <p>Description of Product 2</p>
          <button>Buy Now</button>
        </div>
      </div>
    </section>
  </body>

```

1

```
1   <!DOCTYPE html>
2   <html>
3     <head>
4       <title>My E-Commerce Website</title>
5       <style>
6         /* Add CSS styling here */
7         body {
8           font-family: Arial, sans-serif;
9           margin: 0;
10          padding: 0;
11        }
12        header {
13          background-color: #333;
14          color: #fff;
15          padding: 20px;
16          text-align: center;
17        }
18        header h1 {
19          margin: 0;
20        }
21        nav {
22          background-color: #eee;
23          padding: 10px;
24        }
25        nav a {
26          color: #000;
27          text-decoration: none;
28          margin-right: 10px;
29        }
30        section {
31          display: flex;
32          flex-wrap: wrap;
33          justify-content: center;
34        }
35        .card {
36          width: 200px;
37          margin: 10px;
38          text-align: center;
39        }
40        .card img {
41          width: 100%;
42        }
43        .card h2 {
```

# My E-Commerce Website

Home Shop About Contact

Product 1

Product 2

Product 3

**Product 1**

\$20.00

Add to Cart

**Product 2**

\$30.00

Add to Cart

**Product 3**

\$40.00

Add to Cart

# Huge Investments Being Made

\$\$\$\$

- This is already Microsoft's third investment into ChatGPT

## **What Microsoft gets from betting billions on the maker of ChatGPT**

The reported \$10 billion investment in OpenAI will keep the hottest AI company on Microsoft's Azure cloud platform.

Sara Morrison • Jan 23, 2023, 3:10pm EST

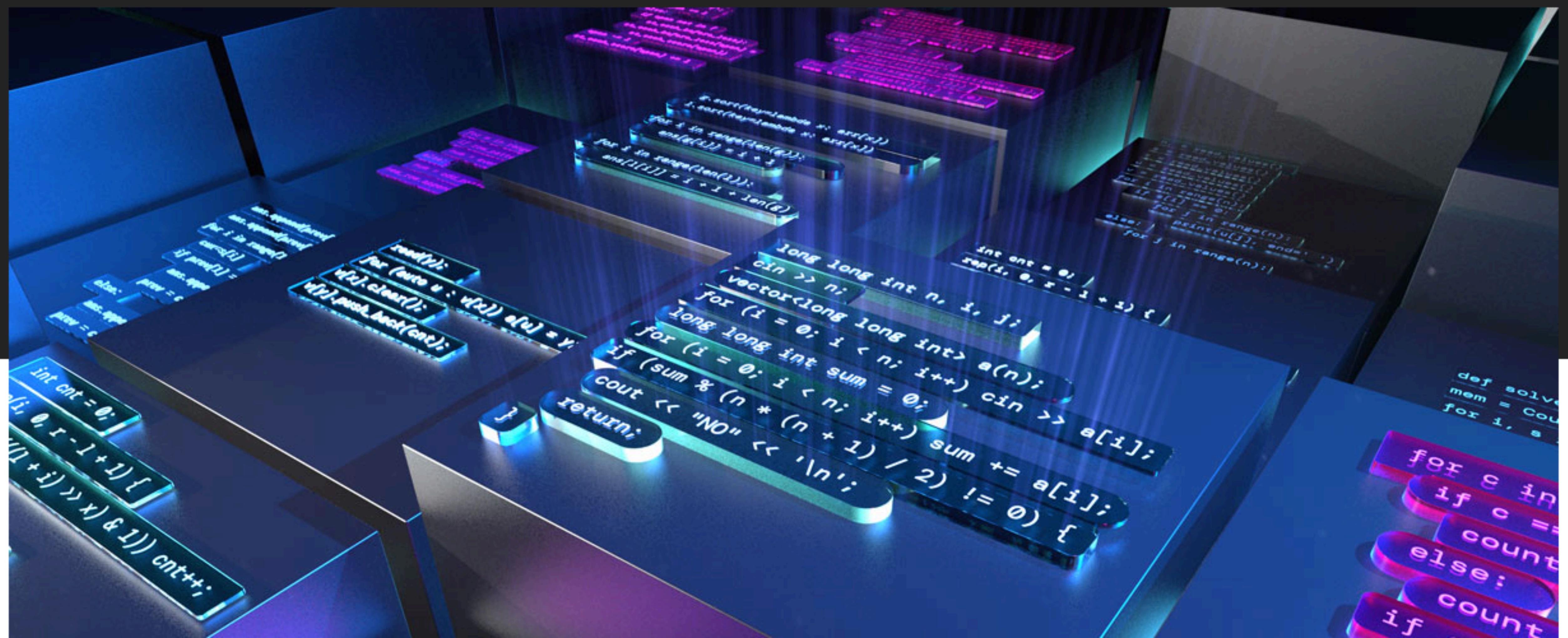


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# AI learns to write computer code in ‘stunning’ advance

DeepMind’s AlphaCode outperforms many human programmers in tricky software challenges

8 DEC 2022 • 2:00 PM • BY MATTHEW HUTSON



# GitHub faces lawsuit over Copilot AI coding assistant

Class-action complaint contends that training the AI system on public GitHub repos violates the legal rights of creators who posted the code under open-source licenses.



By **Paul Krill**

Editor at Large, InfoWorld | NOV 10, 2022 3:00 AM PST

Go Run Terminal Help

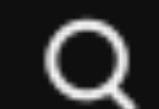
... Untitled-1.cpp 5 ● void cs\_gaxpy (const cs \*A, const double ...  
 DaysBetween... 5 2 cs\_

Terminal

```
File Edit View Search Terminal Help
#include "cs.h"
/* C = A' */
cs *cs_transpose (const cs *A, csi values)
{
    csi p, q, j, *Cp, *Ci, n, m, *Ap, *Ai, *w ;
    double *Cx, *Ax ;
    cs *C ;
    if (!CS_CSC (A)) return (NULL) ; /* check inputs */
    m = A->m ; n = A->n ; Ap = A->p ; Ai = A->i ; Ax = A->x ;
    C = cs_salloc (n, m, Ap [n], values && Ax, 0) ; /* allocate result */
    w = cs_calloc (m, sizeof (csi)) ; /* get workspace */
    if (!C || !w) return (cs_done (C, w, NULL, 0)) ; /* out of memory */
    Cp = C->p ; Ci = C->i ; Cx = C->x ;
    for (p = 0 ; p < Ap [n] ; p++) w [Ai [p]]++ ; /* row counts */
    cs_cumsum (Cp, w, m) ; /* row pointers */
    for (j = 0 ; j < n ; j++)
    {
        for (p = Ap [j] ; p < Ap [j+1] ; p++)
        {
            Ci [q = w [Ai [p]]++] = j ; /* place A(i,j) as entry C(j,i) */
            if (Cx) Cx [q] = Ax [p] ;
        }
    }
    return (cs_done (C, w, NULL, 1)) ; /* success; free w and return C */
}
```

GitHub Copilot x

```
1 Synthesizing 10/10 solutions
2 =====
3 Accept Solution
4
5 cs_transpose (const cs *A, int values)
6 {
7     int p, q, j, *Cp, *Ci, *w, *Ti, *Tj ;
8     double *Cx, *Tx ;
9     cs *T ;
10    if (!CS_CSC (A) || !CS_TRIPLET (A)) return (NULL) ; // check inputs
11    T = cs_salloc (A->n, A->m, A->nzmax, values && A->x, 0) ;
12    w = cs_calloc (A->m, sizeof (int)) ; // get workspace
13    if (!T || !w) return (cs_done (T, NULL, w, 0)) ; // out of memory
14    Cp = T->p ; Ci = T->i ; Cx = T->x ; Ti = A->i ; Tj = A->j ;
15    for (p = 0 ; p < A->nzmax ; p++) w [Ti [p]]++ ; // column counts
16    cs_cumsum (Cp, w, A->m) ; // column pointers
17    for (j = 0 ; j < A->n ; j++)
18    {
19        for (p = A->p [j] ; p < A->p [j+1] ; p++)
20        {
21            Ci [q = w [Ti [p]]++] = j ; // place A(i,j) as entry C(j,i)
22            if (Cx) Cx [q] = A->x [p] ;
23        }
24    }
25    return (cs_done (T, NULL, w, 1)) ; // success; free w and return T
26 }
27
28 // Language: cpp
29 // Compare this snippet from Untitled-1.cpp:
30 //
31 // cs *cs_transpose (const cs *A, int values)
32 // {
33 //     int p, q, j, *Cp, *Ci, *w, *Ti, *Tj ;
34 //     double *Cx, *Tx ;
35 //     cs *T ;
36 //     if (!CS_CSC (A) || !CS_TRIPLET (A)) return (NULL) ; // check inputs
37 //     T = cs_salloc (A->n, A->m, A->nzmax, values && A->x, 0) ;
38 //     w
39
40 =====
```



MONEYWATCH ▾

# Artists sue AI company for billions, alleging "parasite" app used their work for free

**MONEY  
WATCH**

BY IRINA IVANOVA

JANUARY 20, 2023 / 5:00 AM / MONEYWATCH



# All The Different Tasks of a Software Developer

## Writing Code is just one of the things Software Developers do

- Designing and maintaining software systems
- Evaluating and testing new software programs
- Optimizing software for speed and scalability
- Writing and testing code (Just one of the things software developers do)
- Consulting with clients, engineers, security specialists, and other stakeholders
- Presenting new features to stakeholders and internal customers

## What The Customer Really Wanted

Create your own cartoon at [www.projectcartoon.com](http://www.projectcartoon.com)



How the customer explained it



How the business consultant described it



How the project leader understood it



How the analyst designed it



How the programmer wrote it



What the beta testers received



How it performed under load



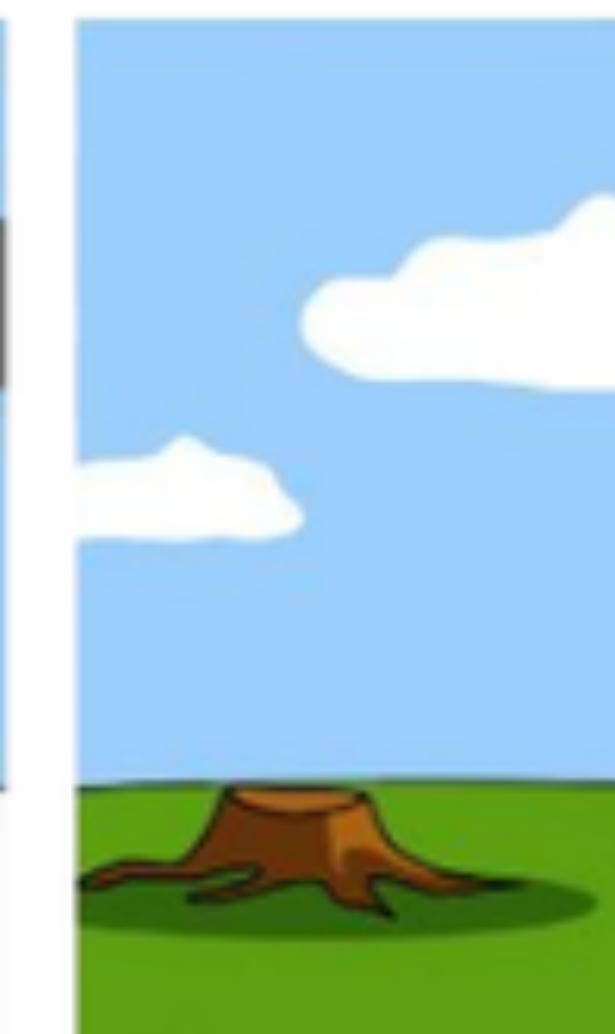
How the project was documented



How the customer was billed



When it was delivered



How it was supported



What the customer really wanted

# In Conclusion

## Keep Up With Technology

- It will help you find a job
- It will boost your performance
- Do your own investigations
- Social Media also helps to keep in touch with new technology

# Sources (Not in order)

- <https://www.coursera.org/articles/software-engineer>
- <https://www.prnewswire.com/news-releases/new-york-city-has-deployed-a-covid-19-engagement-portal-built-in-partnership-with-unqork-to-manage-growing-crisis-301033065.html>
- <https://www.gartner.com/en/newsroom/press-releases/2022-12-13-gartner-forecasts-worldwide-low-code-development-technologies-market-to-grow-20-percent-in-2023>
- <https://www.vox.com/recode/2023/1/23/23567991/microsoft-open-ai-investment-chatgpt>
- <https://www.science.org/content/article/ai-learns-write-computer-code-stunning-advance>

# Sources Part 2

- <https://www.statista.com/chart/16567/popular-programming-languages/>
- <https://www.spreadsheetweb.com/how-big-is-the-global-low-code-no-code-market-and-how-fast-is-it-growing/>
- <https://www.cbsnews.com/news/ai-stable-diffusion-stability-ai-lawsuit-artists-sue-image-generators/>
- <https://www.forbes.com/sites/janakirammsv/2022/03/14/5-ai-tools-that-can-generate-code-to-help-programmers/?sh=d36a5455ee0c>
- <https://www.theverge.com/2022/11/8/23446821/microsoft-openai-github-copilot-class-action-lawsuit-ai-copyright-violation-training-data>

# Questions?

that's all folks!