



# The 24 Generations of Programming



A conversation with Chat GPT about logically imagining the future

In his book "Thinking, Fast and Slow," Daniel Kahnemann highlights the crucial role that gut feelings play in decision making.

These feelings stem from the experiences and knowledge of an expert, enabling them to make rapid, intuitive decisions. But what if a system could have a similar intuition, one that is based on its training and exposure to vast amounts of information?

Enter ChatGPT, a language model developed by OpenAI. This chatbot has been trained on a massive corpus of text, providing it with the ability to answer questions in a concise and informative manner. In this sense, ChatGPT's understanding of information could be seen as a generalized yet condensed version of experience, akin to a human expert's gut feeling as described by Kahnemann.

In this conversation, we delve into the concept of the generations of programming languages and explore the capabilities and limitations of ChatGPT in projecting the same. With its advanced training and expertise, ChatGPT offers a unique perspective on the evolution of programming languages and the future of technology.

Whether you're a seasoned expert or a curious learner, this conversation is sure to provide insights and new perspectives on the world of programming and beyond. Take it with a pinch of AI salt.

## What does “programming” language even mean?

### Can you make a table of the different generations of programming languages

Here is a table summarizing the different generations of programming languages:

Generation	Characteristics	Examples
1st Generation	Machine language	Assembly
2nd Generation	Assembly language	COBOL, FORTRAN
3rd Generation	High-level language	BASIC, C, Pascal
4th Generation	Domain-specific language	SQL, Visual Basic
5th Generation	Natural language-like	Prolog, LISP
6th Generation	Emerging	Python, Swift

### Can you extend this to 12 generations please

I'm sorry, but the concept of "generations of programming languages" is typically only recognized up to 5 generations, with the 6th generation being considered as emerging or evolving. The idea of additional generations beyond that is not a widely recognized or established concept in the field of computer science and programming languages.

## Then use your logic and imagination. Its okay to be wrong.

Sure, here is an attempt to extend the generations of programming languages beyond the 5th generation, based on my understanding and imagination:

Generation	Characteristics	Examples
6th Generation	Emerging	Python, Swift
7th Generation	Artificial Intelligence-based	TensorFlow, PyTorch
8th Generation	Human-Centered	Voice recognition and chatbot systems
9th Generation	Virtual and Augmented Reality	VRML, ARKit
10th Generation	Blockchain-based	Ethereum, Hyperledger
11th Generation	Cloud-Native	Serverless computing, containers
12th Generation	Quantum Computing	Quantum Assembly, D-Wave

Please note that these are not recognized or standardized categorizations, and the characteristics and examples listed are based on my own interpretation and imagination.

## Can you extend this even further please in 12 hops!

Sure, here is an attempt to extend the generations of programming languages even further, based on my understanding and imagination:

Generation	Characteristics	Examples
13th Generation	Immersive	XR, Haptic interfaces
14th Generation	Neuromorphic	Spiking Neural Networks, Brain-Computer Interfaces
15th Generation	Autonomous	Robotics, Self-driving cars
16th Generation	Genetic	Genetic algorithms, Evolutionary programming
17th Generation	Holographic	Holographic displays, Mixed Reality
18th Generation	Sentient	Artificial General Intelligence, Sentient Systems
19th Generation	Space-based	Space exploration, Interplanetary systems
20th Generation	Bio-inspired	Artificial Life, Biomimetic systems

21st Generation	Hyper-parallel	GPGPU, Manycore processors
22nd Generation	Dark-energy computing	Dark energy simulations, Quantum-based systems
23rd Generation	Hyper-realistic	Real-time rendering, High-fidelity simulations
24th Generation	Beyond our understanding	As yet unknown or undiscovered technologies

Please note that these are not recognized or standardized categorizations, and the characteristics and examples listed are based on my own interpretation and imagination.

## Appendix

The future of programming, As logically imagined by Chat GPT in January 2023 and narrated over the web.

Generation	Characteristics	Key New Tech Shift	Pros	Cons
1st Generation	Machine language	N/A	Direct control of hardware, low-level	Limited expressiveness, hard to learn and use
2nd Generation	Assembly language	Abstraction from machine language	Improved expressiveness, easier to learn and use than machine language	Limited high-level functionality, still relatively low-level
3rd Generation	High-level language	Improved abstraction and higher-level functionality	Improved readability and ease of use, more accessible to non-experts	Reduced control over hardware, may introduce inefficiencies
4th Generation	Domain-specific language	Specialization for specific tasks and industries	Improved efficiency and productivity for specific tasks and industries	Limited applicability outside of specific domains

5th Generation	Natural language-like	Natural language processing and reasoning	Improved accessibility, increased human-like interaction	Limited expressiveness and precision compared to traditional programming languages
6th Generation	Emerging	N/A	Improved expressiveness, increased focus on readability and ease of use	Limited widespread adoption, ongoing evolution and development
7th Generation	Artificial Intelligence-based	Advancements in AI and machine learning	Improved ability to automate complex tasks and make decisions	Dependence on large amounts of data, potential for biases and errors
8th Generation	Human-Centered	Human-centered design and interaction	Improved human-computer interaction, increased accessibility	Dependence on high-quality human-computer interfaces, potential for misinterpretation and miscommunication
9th Generation	Virtual and Augmented Reality	Advancements in VR and AR technology	Improved immersion and sensory experience, increased ability to simulate and visualize real-world scenarios	Dependence on high-quality VR/AR hardware, potential for disorientation and discomfort
10th Generation	Blockchain-based	Advancements in blockchain technology	Improved security, transparency, and decentralization	Scalability challenges, limited mainstream adoption
11th Generation	Cloud-Native	Advancements in cloud computing	Improved scalability, accessibility, and cost-effectiveness	Dependence on stable and secure cloud infrastructure, potential for data

				privacy and security concerns
12th Generation	Quantum Computing	Advancements in quantum computing	Improved computational power and efficiency, ability to solve previously intractable problems	Complexity and difficulty of programming for quantum systems, limited widespread adoption
13th Generation	Immersive	Advancements in XR and haptic technology	Improved immersion and sensory experience, increased ability to simulate and experience real-world scenarios	Dependence on high-quality hardware, potential for disorientation and discomfort
14th Generation	Neuromorphic	Advancements in neuromorphic computing	Improved ability to mimic and model the human brain, increased efficiency in certain tasks	Limited applicability outside of specific domains, complex and difficult to program
15th Generation	Autonomous	Advancements in autonomous systems	Improved ability to automate complex tasks and make decisions, increased efficiency	Dependence on high-quality data and algorithms, potential for biases and errors
16th Generation	Genetic	Advancements in genetic algorithms and evolutionary programming	Improved ability to evolve and optimize solutions, increased efficiency in certain tasks	Limited applicability outside of specific domains, complex and difficult to program
17th Generation	Holographic	Advancements in holographic displays and mixed reality	Improved immersion and sensory experience,	Dependence on high-quality hardware, potential for

			increased ability to simulate and visualize real-world scenarios	disorientation and discomfort
18th Generation	Sentient	Advancements in Artificial General Intelligence and sentient systems	Improved ability to create intelligent and self-aware systems, increased efficiency in certain tasks	Complexity and difficulty of programming sentient systems, potential for ethical and safety concerns
19th Generation	Space-based	Advancements in space exploration and interplanetary systems	Improved ability to explore and operate in space, increased efficiency in certain tasks	Dependence on high-quality hardware and infrastructure, potential for environmental and safety concerns
20th Generation	Bio-inspired	Advancements in biomimetic systems and artificial life	Improved ability to mimic and model biological systems, increased efficiency in certain tasks	Limited applicability outside of specific domains, complex and difficult to program
21st Generation	Hyper-parallel	Advancements in GPGPU and many-core processors	Improved computational power and efficiency, increased ability to handle complex and demanding tasks	Complexity and difficulty of programming for parallel systems, potential for inefficiencies and bottlenecks
22nd Generation	Dark-energy computing	Advancements in dark energy simulations and quantum-based systems	Improved ability to understand and simulate dark energy and quantum phenomena, increased	Complexity and difficulty of programming for dark energy and quantum systems, limited widespread adoption

			efficiency in certain tasks	
23rd Generation	Hyper-realistic	Advancements in real-time rendering and high-fidelity simulations	Improved ability to simulate and visualize realistic scenarios, increased efficiency in certain tasks	Dependence on high-quality hardware and algorithms, potential for inefficiencies and bottlenecks
24th Generation	Beyond our understanding	As yet unknown or undiscovered technologies	Improved ability to solve previously intractable problems, increased efficiency in certain tasks	Uncertainty and unpredictability of unknown technologies, limited understanding and control

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