Over the last 75 years, the history of programming languages has developed immensely. The world's first binary digital computer (Z1) along with Plankalkül, the first complete high-level language, was developed by German engineer and painter Konrad Zuse (shown to the left). In 1945, Zuse worked on Plankalkül to create theoretical preconditions for general problem solutions. Three years later in 1948, an American mathematician, Claude Shannon, identified the fundamental unit of information and the basic unit used in computation, the bit – binary digit.

The 1950s brought more growth to computer programming with mathematician Grace Hopper in 1952. She completed the A-0, a program to allow English words as computer instructions from the user with many features similar to modern compilers. It was written for the first commercial U.S. business computer system, the UNIVAC. IBM soon released Speedcode finished by John Backus for the IBM 701, a large scientific computer. Speedcode significantly reduced program writing time. He went on in 1957 to lead a development team for FORTRAN still in use today for scientific and technical computing.

Jumping to 1963, Ivan Sutherland developed Sketchpad as part of his MIT doctoral thesis to draw and manipulate geometric figures on a screen. Other design and drafting programs would soon follow. At Dartmouth, Kurtz and Kemeny wrote BASIC for their students who had no programming experience, and it would soon be used on most early personal computers. AT&T Bell Labs programmers Thompson and Ritchie developed UNIX on a spare DEC minicomputer in 1969. UNIX was quickly used world-wide by engineers and scientists. Three years later, the two would release the C programming language and would rewrite the UNIX code in C. Along with the release of the IBM PC came its basic operating system, MS-DOS, through a partnership between IBM and Microsoft. In 1983, Microsoft introduced Word for the first time. MATLAB was released in 1984 by Professor Moler to help students solve mathematical problems without any knowledge of FORTRAN. C++ emerged in 1985 written by Stroustrup, who was trying to solve more complex problems. February 1992 saw the release of the open source software, Linux, by a Finnish university student Linus Torvalds. Linux provided a free alternative to using Unix. In 1995 Java was introduced to provide freedom from Microsoft and Apple products as it could run on any system.

Moving into the 2000s, the Mac OS X, Windows XP, and Apple's iTunes were all released in 2001. Also, BitTorrent launched and allowed users to upload and download movie and music files. Copyright holders soon claimed BitTorrent aided in the theft of intellectual property. In 2013, Microsoft Office was updated Office 365, a subscription software product. Included were Word, Excel, OneNote, PowerPoint, Outlook, Access, and Publisher under monthly or annual subscriptions. At the same time, other companies such as Apple, Adobe, and IBM also moved to subscription products.

Throughout the decades, the development of new software and programming languages increased exponentially with more and more development and expansion. During this time, there were numerous, less-known advancements of computer programming in many specialized fields. Early languages were developed by mathematicians and university staff and students, with the purpose of making calculations and computing more time efficient. These programs are still relevant and currently being used, updated, and added on to for use in everyday life, sciences, industries, and at universities.

Reference: https://www.computerhistory.org/timeline/software-languages/#169ebbe2ad45559efbc6eb35720a8286