MIT App Inventor is a web application integrated development environment originally provided by Google, and now maintained by the Massachusetts Institute of Technology (MIT). It allows newcomers to computer programming to create application software(apps) for two operating systems (OS): Android, and iOS, which, as of 8 July 2019, is in final beta testing. It is free and open-source software released under dual licensing: a Creative Commons Attribution ShareAlike 3.0 Unported license, and an Apache License 2.0 for the source code.

It uses a graphical user interface (GUI) very similar to the programming languages Scratch (programming language) and the StarLogo, which allows users to drag and drop visual objects to create an application that can run on android devices, while a App-Inventor Companion (The program that allows the app to run and debug on) that works on iOS running devices are still under development. In creating App Inventor, Google drew upon significant prior research in educational computing, and work done within Google on online development environments.

App Inventor and the other projects are based on and informed by constructionist learning theories, which emphasize that programming can be a vehicle for engaging powerful ideas through active learning. As such, it is part of an ongoing movement in computers and education that began with the work of Seymour Papert and the MIT Logo Group in the 1960s, and has also manifested itself with Mitchel Resnick's work on Lego Mindstorms and StarLogo.

App Inventor also supports the use of cloud data via an experimental Firebase#Firebase Realtime Database component.The application was made available through request on July 12, 2010, and released publicly on December 15, 2010. The App Inventor team was led by Hal Abelson and Mark Friedman. In the second half of 2011, Google released the source code, terminated its server, and provided funding to create The MIT Center for Mobile Learning, led by App Inventor creator Hal Abelson and fellow MIT professors Eric Klopfer and Mitchel Resnick. The MIT version was launched in March 2012. On December 6, 2013 (the start of the Hour of Code), MIT released App Inventor 2, renaming the original version "App Inventor Classic"

Major differences are: The blocks editor in the original version ran in a separate Java process, using the Open Blocks Java library for creating visual blocks programming languages and programming

Open Blocks is distributed by MIT's Scheller Teacher Education Program (STEP) and is derived from master's thesis research by Ricarose Roque. Professor Eric Klopfer and Daniel Wendel of the Scheller Program supported the distribution of Open Blocks under an MIT License. Open Blocks visual programming is closely related to StarLogo TNG, a project of STEP, and Scratch, a project of the MIT Media Lab's Lifelong Kindergarten Group led by Mitchel Resnick. App Inventor 2 replaced Open Blocks with Blockly, a blocks editor that runs within a web browser.

The MIT AI2 Companion app enables real-time debugging on connected devices via Wi-Fi, or Universal Serial Bus (USB). In addition to this the user may use an "on computer" emulator available for Windows, MacOS, and Linux.

Using MIT App Inventor, you can develop applications for Android devices using a web browser and a connected phone (or emulator). The App Inventor servers store your work and help you keep track of your projects.

When you log in to the App Inventor server with a google account, at first you will see an empty project list. If you have completed the setup instructions, you will be ready to open up the Designer and Blocks Editor to get started on building apps. Just click the "New" button in the upper left to start a new project.

The Blocks Editor, where you assemble program blocks that specify how the components should behave. You assemble programs visually, fitting pieces together like pieces of a puzzle.

App Inventor will display your app on a phone or emulator as you add pieces to it, so you can test your work as you build.

Phone: App Inventor connects to your Android phone through a USB cord. (Follow phone setup instructions.)

Emulator: If you don't have a phone, you can test your app using the emulator software that mimics an Android phone right on your computer screen. (The emulator is installed during App Inventor Setup).

When you're done, you can package your app and produce a stand-alone application for installation on other phones. Get started building your first app with the emulator or with the phone. The App Inventor development environment is supported for Mac OS X, GNU/Linux, and Windows operating systems, and several popular Android phone models. Applications created with App Inventor can be installed on any Android phone.