**Software Engineering**

**Software engineering** is the study and an application of [engineering](https://en.wikipedia.org/wiki/Engineering) to the [design](https://en.wikipedia.org/wiki/Software_design), [development](https://en.wikipedia.org/wiki/Software_development), and[maintenance](https://en.wikipedia.org/wiki/Software_maintenance) of [software](https://en.wikipedia.org/wiki/Software).[[1]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-BoDu04-1)[[2]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-2)[[3]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-3)

Typical formal definitions of **software engineering** are:

* "research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications."[[4]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-4)
* "the systematic application of scientific and technological knowledge, methods, and experience to the design, implementation, testing, and documentation of software";[[5]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-IEEE24765-5)
* "the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of [software](https://en.wikipedia.org/wiki/Software)";[[6]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-IEEE610a-6)
* "an engineering discipline that is concerned with all aspects of software production";[[7]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-Sommerville1-7)
* and "the establishment and use of sound engineering principles in order to economically obtain software that is reliable and works efficiently on real machines."[[8]](https://en.wikipedia.org/wiki/Software_engineering#cite_note-Bauer1-8)

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**هندسة البرمجيات**

**هندسة البرمجيات** ([بالإنجليزية](https://ar.wikipedia.org/wiki/%D9%84%D8%BA%D8%A9_%D8%A5%D9%86%D8%AC%D9%84%D9%8A%D8%B2%D9%8A%D8%A9): Software engineering) هي مهنة تهتم بتطوير، وتصميم [البرمجيات](https://ar.wikipedia.org/wiki/%D8%A7%D9%84%D8%A8%D8%B1%D9%85%D8%AC%D9%8A%D8%A7%D8%AA)، عالية الجودة آخذة بعين الاعتبار تخصيصات المستخدم، ومتطلباته على جميع المستويات. تهتم هندسة البرمجيات بتكوين البرنامج منذ مراحله الأولى أثناء تحليل المشكلة، ومن ثم التصميم، وكتابة البرنامج حتى القيام بتجريبه، واختباره، وتنصيبه على الأجهزة، والقيام بعملية صيانته. وهي حديثاً يمكن أن تنقسم لقسمين[الحوسبة اللينة](https://ar.wikipedia.org/wiki/%D8%A7%D9%84%D8%AD%D9%88%D8%B3%D8%A8%D8%A9_%D8%A7%D9%84%D9%84%D9%8A%D9%86%D8%A9) والحوسبة الصلبة.