Software development (also known as application development, software design, designing software, software application development, enterprise application development, or platform development) is the development of a software product. The term "software development" may be used to refer to the activity of computer programming, which is the process of writing and maintaining the source code, but in a broader sense of the term it includes all that is involved between the conception of the desired software through to the final manifestation of the software, ideally in a planned and structured process. Therefore, software development may include research, new development, prototyping, modification, reuse, re-engineering, maintenance, or any other activities that result in software products.

1 Analyzing the problem
2 Market research
Gathering requirements for the proposed business solution
3 Devising a plan or design for the software-based solution
4 Implementation (coding) of the software
5 Testing the software
6 Deployment
7 Maintenance and bug fixing

Software can be developed for a variety of purposes, the three most common being to meet specific needs of a specific client/business (the case with custom software), to meet a perceived need of some set of potential users (the case with commercial and open source software), or for personal use (e.g. a scientist may write software to automate a mundane task). Embedded software development, that is, the development of embedded software such as used for controlling consumer products, requires the development process to be integrated with the development of the controlled physical product.

The need for better quality control of the software development process has given rise to the discipline of software engineering, which aims to apply the systematic approach exemplified in the engineering paradigm to the process of software development.

There are several different approaches to software development, much like the various views of political parties toward governing a country. Some take a more structured, engineering-based approach to developing business solutions, whereas others may take a more incremental approach, where software evolves as it is developed piece-by-piece. Most methodologies share some combination of the following stages of software development:

These stages are often referred to collectively as the software development lifecycle, or SDLC. Different approaches to software development may carry out these stages in different orders, or devote more or less time to different stages. The level of detail of the documentation produced at each stage of software development may also vary. These stages may also be carried out in turn (a “waterfall” based approach), or they may be repeated over various cycles or iterations (a more "extreme" approach). The more extreme approach usually involves less time spent on planning and documentation, and more time spent on coding and development of automated tests. More “extreme” approaches also promote continuous testing throughout the development lifecycle, as well as having a working (or bug-free) product at all times. More structured or “waterfall” based approaches attempt to assess the majority of risks and develop a detailed plan for the software before implementation (coding) begins, and avoid significant design changes and re-coding in later stages of the software development lifecycle planning.

There are significant advantages and disadvantages to the various methodologies, and the best approach to solving a problem using software will often depend on the type of problem. If the problem is well understood and a solution can be effectively planned out ahead of time, the more "waterfall" based approach may work the best. If, on the other hand, the problem is unique (at least to the development team) and the structure of the software solution cannot be easily envisioned, then a more "extreme" incremental approach may work best. A software development process is a structure imposed on the development of a software product. Synonyms include software life cycle and software process. There are several models for such processes, each describing approaches to a variety of tasks or activities that take place during the process.

In order to ensure that software can evolve in a way that maintains its inherent multidimensionality, one must ensure that the different dimensions evolve together in a consistent manner. Software has too many dimensions to combine within a single framework. A good mechanism should not be geared to a specific problem such as ensuring the consistency of a UML class diagram with the source code. Instead it should be flexible enough to handle the broad range of dimensions that are actually involved in software development.