# **Rapid Application Development**

Rapid Application Development (RAD) is a form of the agile methodology. It prioritises the use of rapidly produces prototype releases and user feedback over planning and requirements.

* Enhanced flexibility and adaptability as developers can adjust quickly during the development process.
* Quick iterations that reduce development time and speed up delivery.
* Encouragement of code reuse, which means less manual coding, less room for errors, and shorter testing times.
* Increased customer satisfaction due to high-level collaboration and coordination between stakeholders (developers, clients, and end users).
* Better risk management as stakeholders can discuss and address code vulnerabilities while keeping development processes going.
* Fewer surprises as, unlike the Waterfall method, RAD includes integrations early in the software development process.

**There are 5 steps.**

1. Define and finalise project requirements
2. Begin building prototypes
3. Gather user feedback
4. Test
5. Present the system
6. During this step, stakeholders sit together to define and finalize project requirements such as project goals, expectations, timelines, and budget. When you have clearly defined and scoped out each aspect of the project’s requirements, you can seek management approvals.
7. As soon as you finish scoping the project, you can begin development. Designers and developers will work closely with clients to create and improve upon working prototypes until the final product is ready.
8. In this step, prototypes and beta systems are converted into working models. Developers then gather feedback from users to tweak and improve prototypes and create the best possible product.
9. This step requires you to test your software product and ensure that all its moving parts work together as per client expectations. Continue incorporating client feedback as the code is tested and retested for its smooth functioning.
10. This is the final step before the finished product goes to launch. It involves data conversion and user training.

## **When to use**

* Software product is to be developed in a short time span (2-3 months)
* Team of experienced developers, coders and designers that can produce the work efficiently
* The client is available throughout the development process.

# **Advantages/Disadvantages**

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| **Advantages** | **Disadvantages** |
| Flexible and adaptable to changes | It can’t be used for smaller projects |
| Reduces risks (by having constant communication with the client) | Requires highly skilled designers or developers |
| Due to code generators and code reuse, there is a reduction of manual coding | Progress and problems are hard to track as there is little documentation to demonstrate what has been done |
| |  |  | | --- | --- | | Due to prototyping in nature, there is a possibility of lesser defects |  | | Reduced scalability occurs because a RAD developed application begins as a prototype and evolves into a finished application |
| |  |  | | --- | --- | | With less people, productivity can be increased in short time |  | | Reduced features due to limited time and features are pushed in a later version. |
|  | When technical risk is high, it is not suitable |