

# SDLC

SOFTWARE DEVELOPMENT LIFE CYCLE



# What is SDLC Process?

The process defines different phases that are needed to deliver an application.



## Planning Stage

The phase in which developers will plan for the upcoming project.



## Analysis Stage

Gather all the specific details required for a new system & prototype ideas



## Design Stage

Outline overall application details, alongside UI, Database, coding, etc.



## Development Stage

Write code and build the application as per design and outline.



## Testing Stage

Track bugs or defects. Fixed them, and later retested.



## Integration Stage

Different modules & designs will be integrated into the primary source code

# LAUNCH



# Purpose



- ▶ Lead to good software
- ▶ Reduce risk
- ▶ Enable visibility and measurement
- ▶ Enable teaming

# KEY ELEMENTS IN ANY SDLC

- ▶ Feasibility
- ▶ Specification
- ▶ Architecture and Design
- ▶ Development
- ▶ Validation
- ▶ Evolution/Maintenance

# SDLC Models

- ▶ Waterfall Model
- ▶ Iterative Model
- ▶ Evolutionary Model
- ▶ Prototype Model
- ▶ Spiral Model
- ▶ RAD Model
- ▶ Agile Model
- ▶ Incremental Model

# 1 Planning Stage





# Requirements Analysis

- ▶ Requirements Analysis must be done before any custom software development work can begin. It is a vital part of the software life cycle process where requirements are gathered and analyzed by the business people who are responsible for implementing the application.
- ▶ They will identify what they need from an application to do their jobs quicker, better and cheaper. Once the requirements have been identified, it is then possible to gather together the resources such as developers, testers, analysts and designers who will create the software.
- ▶ By doing so, it gives them a clearer picture of how things should be implemented in order to achieve these objectives. This ensures a smoother and faster implementation of the customized and agile software development solution.



# Planning



- ▶ In order to meet the quality standards, planning for the project is done in the early stages itself. Once the study of the market research is completed, we come up with recommendations regarding the feasibility of the product. Also, the feasibility study helps us to identify potential areas where we may face problems during implementation. We then go ahead and plan accordingly.

# 2 Analysis Stage



# Defining Requirements



- ▶ Once the requirement analysis has been completed, the second step would be to clearly define and document these requirements, and ask those who approve the requirements if they are OK with them.
- ▶ This process is achieved through an SRS(Software Requirement Specification) or RFP (Request For Proposal). The RFP contains all the product requirements needed to be implemented during the project life cycle along with a detailed description as to how they should be met.


# 3 Design Stage



# Designing the Product Architecture

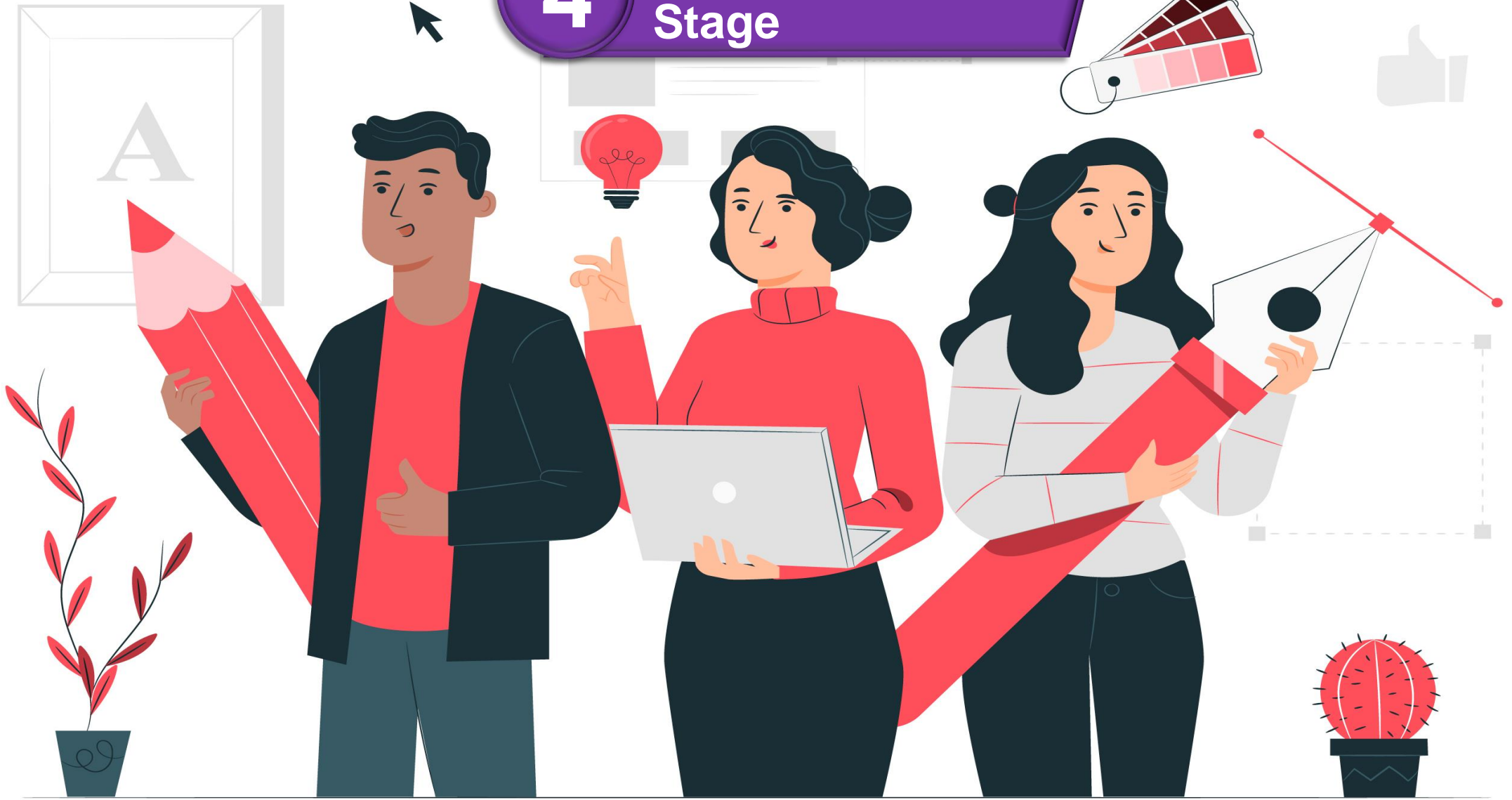


- ▶ SRS is the key resource for product architects to work out how the product should be developed. Based on what's needed, the technical people develop a specification document outlining the product's features and functionality. From this document, they can propose multiple approaches to building the product. They present these ideas to the business people who then decide on what direction to take.
- ▶ This DDS is evaluated against a number of critical parameters before being recommended to the client. Based on these various factors, an appropriate design solution can be identified and incorporated into the project plan.

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- ▶ A design approach clearly defines all of the product's architectural modules, as well as its communication and data flow representation with external and third-party modules (if any). The internal design of all modules of the proposed architecture should be clearly defined in DDS down to the smallest detail.



# 4 Development Stage






# Building or Developing the Product



- ▶ During this stage of SDLC, the actual development starts, the Product is designed, the coding code is generated according to DDS, and then the project is rolled out on an iterative basis based on feedback gathered from users and stakeholders. We should expect issues to arise throughout the development cycle, so we should have a plan ready for each one.
- ▶ These plans should be documented and communicated clearly to everyone who is involved in the process. Once the problem has been resolved, the next step is to roll back to the last working version of the code, and repeat the same steps until the desired functionality has been implemented.

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- ▶ Developers should follow the standards set out by their organization and any development tool used. Compilers, interpreters, debugging tools, and so forth are used to create the source code.
  - ▶ A wide variety of programming languages can be used including C, Objective-C, C, Java, COBOL, BASIC, HTML, XML, XSLT, CSS, Perl, Python, PHP, Ruby, JavaScript, etc. The choice of programming language is dependent upon the type of application being made.

# 5 Testing Stage

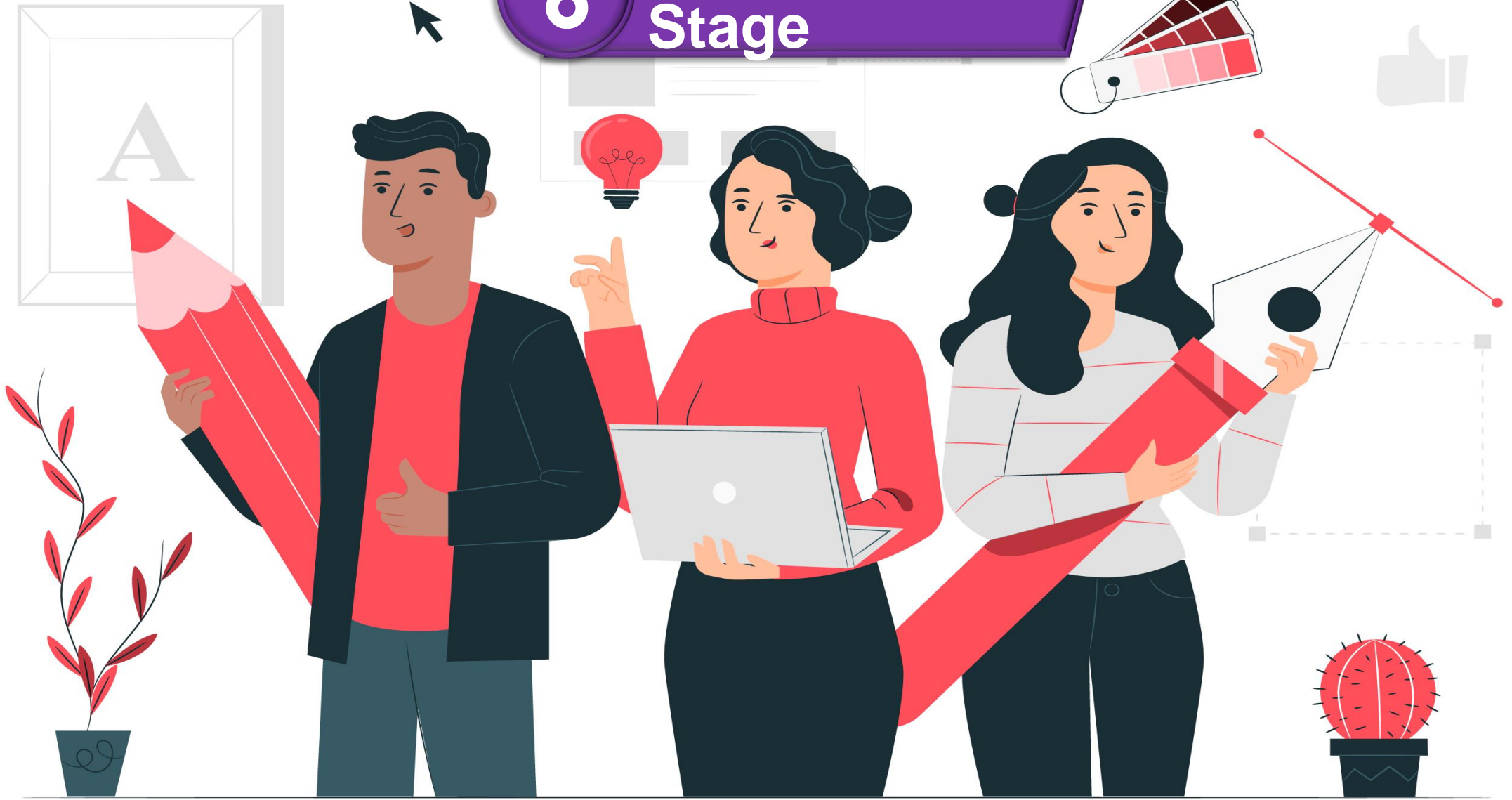


# Testing the Product



- ▶ This stage is usually included in all the processes of the SDLC model. The testing activities involve all of the stages of the SDLC model (Requirements Analysis, Design, Implementation, Testing, Maintenance).
- ▶ However, this stage is referred to as the testing phase of the product, where defects are reported, tracked and fixed, until the product meets the quality standards set out in the SRS.

# 6 Integration Stage





# Deployment in the Market



- ▶ Once the product has been thoroughly tested and is ready for deployment, it is formally released in the relevant market. Product deployment may occur in stages depending on the organization's business plan. The product may first be introduced in a small market sector and tested in a real-world business setting.
- ▶ The product may then be released as is or with proposed enhancements in the targeted market niche depending on the feedback. Following the product's release to the market, it is maintained for the current client base.

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**THANK YOU**

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