Software Engineering

هندسة البرمجيات

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المرحلة الثالثة

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محاضرة الاسبوع السابع

Rapid Applications Development Model (RAD)

Topics covered

- ✧ What is RAD Model?
- ✧ RAD process Model
- ✧ RAD Model Approach
- ✧ Phases of RAD Model
- ✧ Strengths of RAD Model
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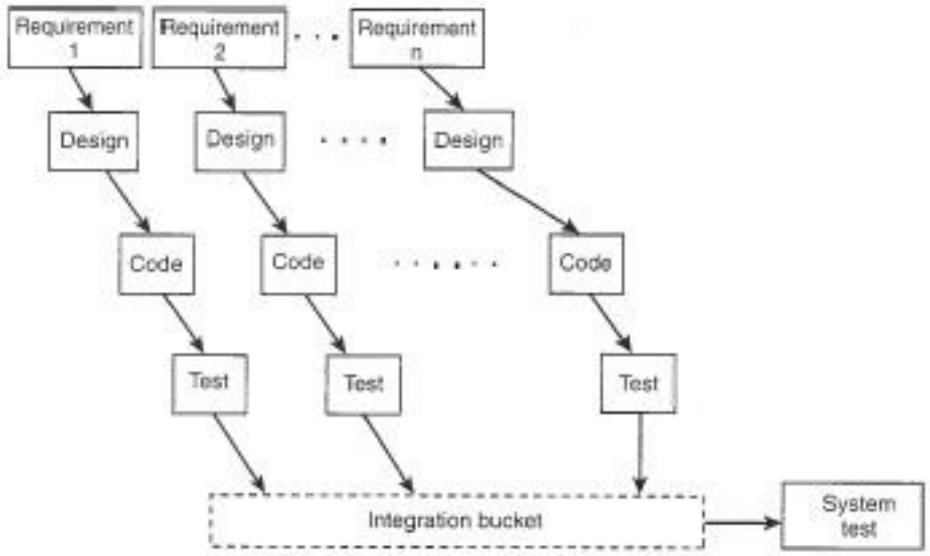
What is RAD Model?

- The model was proposed by IBM in the 1980s through the book of James Martin entitled “ Rapid Application Development”.
- In this model the user involvement is more important from the beginning to the end to ensure the requirement analysis and design of software.
- This model is similar to prototype, it is built and given to the user for evaluation and for the feedback.
- The prototype is refined as per the feedback obtained from the customer.

What is RAD Model?

- RAD model is similar to incremental model. It is proposed when requirements and solutions can be modularized as independent system or software components, each of which can be developed by different teams. After theses smaller solution. The modularization could be on a functional, technology or architectural basis, front-end-back-end, client side-server and so on.

RAD Model Approach



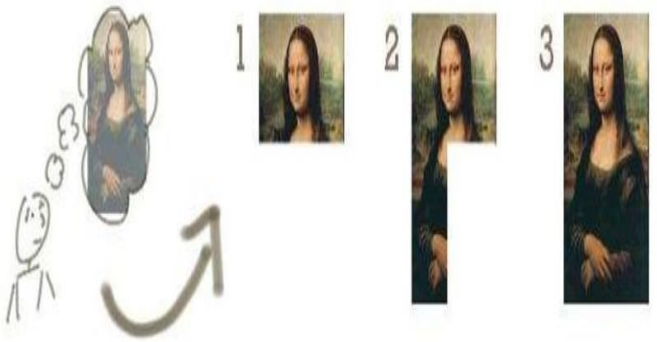


Figure 9: RAD model approach

RAD Model Approach

- RAD is also recommended when system components have already been developed by the organization in the context of other software systems, and theses components can be used in the new software with minor or no modification.
- The model is called RAD due to the reusability of the system components and the possibility of splitting the requirement into smaller components that can then be assigned to different development team.

RAD Model Approach?

- The RAD recommended that developers use special techniques and computer tools to speed up the analysis, design, and implementation phases, such as GUI (Graphical User Interface), CASE (computer-aided software engineering) tools, JAD (joint application design), fourth-generation/visual programming languages that simplify and speed programming (e.g., Visual Basic.NET), and code generators that automatically produce programs from design specifications.

RAD process model

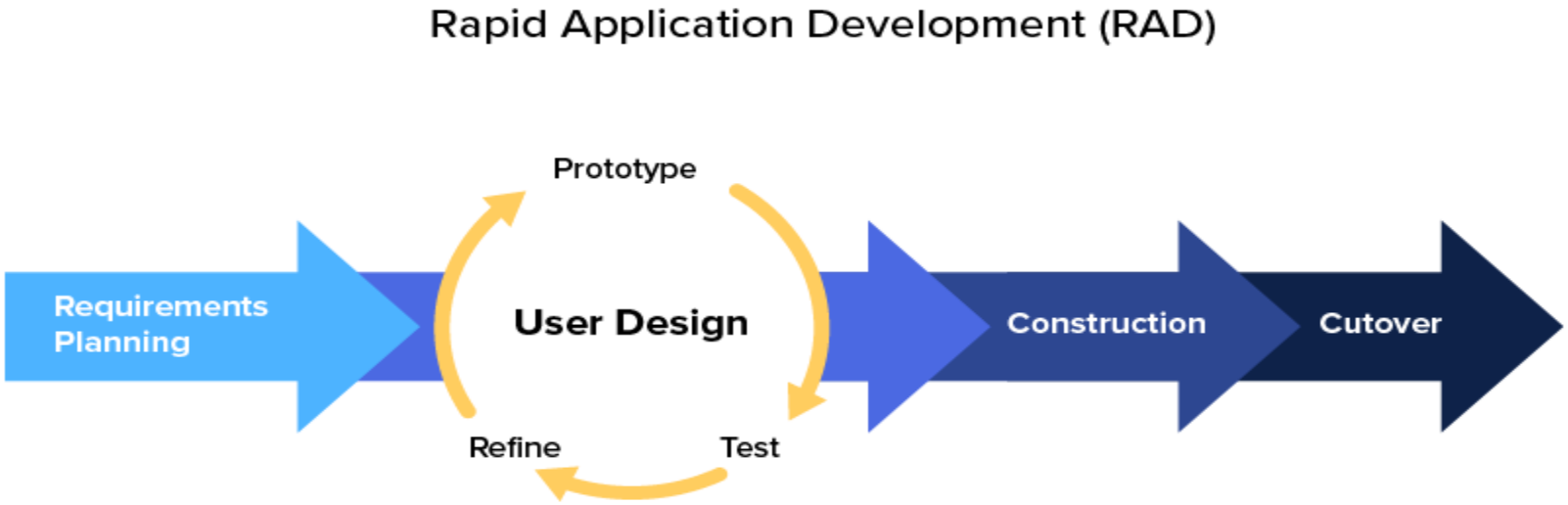


Figure 10: RAD process model

Phases of RAD Model

✧ ***Requirements Planning Phase:***

The requirement is captured using any group elicitation technique. Only issue is the active involvement of users for understanding the project.

✧ ***User Design Phase:***

Joint teams of developers and user are constituted to prepare understand and review the requirements. The team may use automated tools to capture information from users.

Phases of RAD Model

✧ ***Construction Phase:***

This phase combined the detailed design encoding, testing phase of waterfall model here we release the product to customer. It is expected to use code generators, screen generators and other type's productivity tools.

✧ ***Cutover Phase:***

This phase incorporates acceptance by users, installation of the systems and user training.

Strengths of RAD Model

- ✧ Speed of development.
- ✧ Use of GUI (graphical user interface) and other development tools.
- ✧ Heavy user participation.

Weaknesses of RAD Model

- The process may be speedy that requirements frozen too early.
- Basic principles of software development (e.g. programming standards, documentation, data-naming standards, backup and recovery) are overlooked in the race to finish the project.

Thanks