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# What is Spiral model- advantages, disadvantages and when to use it?

The spiral model is similar to the **incremental model**, with more emphasis placed on risk analysis. The spiral model has four phases: Planning, Risk Analysis, Engineering and Evaluation. A software project repeatedly passes through these phases in iterations (called Spirals in this model). The baseline spiral, starting in the planning phase, requirements are gathered and risk is assessed. Each subsequent spirals builds on the baseline spiral. Its one of the **software development models** like **Waterfall, Agile, V-Model**.

**Planning Phase:** Requirements are gathered during the planning phase. Requirements like 'BRS' that is 'Bussiness Requirement Specifications' and 'SRS' that is 'System Requirement specifications'.

**Risk Analysis:** In the **risk analysis phase**, a process is undertaken to identify risk and alternate solutions. A prototype is produced at the end of the risk analysis phase. If any risk is found during the risk analysis then alternate solutions are suggested and implemented.

**Engineering Phase:** In this phase software is **developed**, along with **testing** at the end of the phase. Hence in this phase the development and testing is done.

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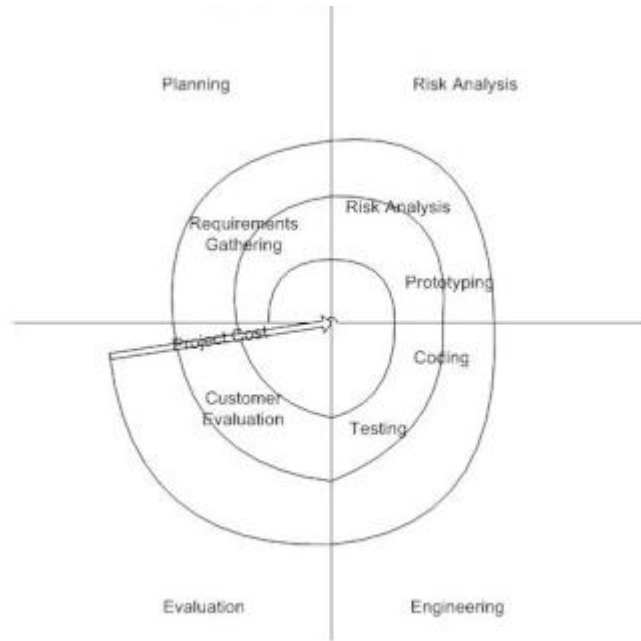
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## ISTQB CERTIFICATION EXAM STUDY MATERIAL

[Chapter 1. Fundamentals of testing](#)[What is Software testing?](#)[Why is testing necessary?](#)[Software testing objectives and purpose](#)[What is Defect or bugs or faults?](#)[What is a Failure?](#)[From where do Defects and failures arise?](#)[When do defects arise?](#)[What is the cost of defects?](#)[Defect or Bug Life Cycle](#)[What is the difference between Severity and Priority?](#)[Principles of testing](#)[Fundamental test process](#)[Psychology of testing](#)[Independent testing- it's benefits and risks](#)

**Evaluation phase:** This phase allows the customer to evaluate the output of the project to date before the project continues to the next spiral.

**Diagram of Spiral model:**



**Advantages of Spiral model:**

- High amount of risk analysis hence, avoidance of Risk is enhanced.
- Good for large and mission-critical projects.
- Strong approval and documentation control.
- Additional Functionality can be added at a later date.
- Software is produced early in the **software life cycle**.

**Disadvantages of Spiral model:**

- Can be a costly model to use.

## Software Quality

Chapter 2. Testing throughout the testing lifecycle

**What is Verification?**

**What is Validation?**

**Capability Maturity Model (CMM-Levels)**

Software Development Life Cycle

**Software Development Life Cycle (SDLC) phases**

**Software Development Models**

**Waterfall model**

**V-model**

**Incremental model**

**RAD model**

**Agile model**

**Iterative model**

**Spiral model**

**Prototype Model**

**Software Testing Levels**

**Unit testing**

**Component testing**

**Integration testing**

**Big Bang integration testing**

**Incremental testing**

- Risk analysis requires highly specific expertise.
- Project's success is highly dependent on the risk analysis phase.
- Doesn't work well for smaller projects.

### When to use Spiral model:

- When costs and risk evaluation is important
- For medium to high-risk projects
- Long-term project commitment unwise because of potential changes to economic priorities
- Users are unsure of their needs
- Requirements are complex
- New product line
- Significant changes are expected (research and exploration)

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- [What is Waterfall model- advantages, disadvantages and when to use it?](#)
- [What are the Software Development Life Cycle \(SDLC\) phases?](#)
- [What is V-model- advantages, disadvantages and when to use it?](#)
- [What is Incremental model- advantages, disadvantages and when to use it?](#)
- [What is Iterative model- advantages, disadvantages and when to use it?](#)

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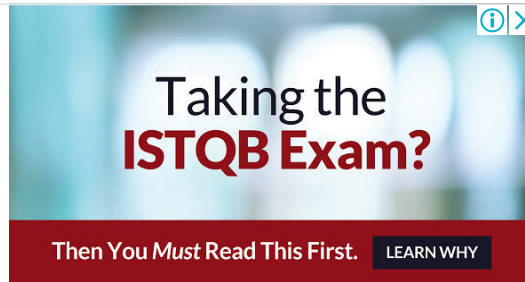
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Chapter 3. Static Techniques

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kira says

May 18, 2018 at 11:42 pm

very usefully thank a lot

Reply

Abdussamad Ibrahim Ahmad says

May 9, 2018 at 5:11 pm

Thanks great very helpful

Reply

Umme Khan says

May 6, 2018 at 9:38 pm

very useful thanks .....

Reply

What is static analysis?

What is a static analysis tools?

Chapter 4. Test design techniques

Test analysis

Traceability

Test design

Test implementation

Test design technique

Categories of test design techniques

Static testing techniques

Dynamic testing technique

i. Black box testing or Specification-based

Equivalence partitioning (EP)

Boundary Value Analysis (BVA)

why it is important to do both EP and BVA

Decision tables

State transition testing

Use case testing

ii. White box testing or Structure-based

iii. Experience-based testing

Error guessing

Exploratory testing

Structure based technique

Test coverage

Where to apply this test coverage?

harshvardhan says

January 21, 2018 at 1:25 pm

nice but diagram is not clear

Reply

Muzanfar Khan says

January 26, 2018 at 10:29 pm

have you best diagram.....

Reply

nina says

January 19, 2018 at 6:53 pm

its really good and useful... nice work

Reply

Why to measure code coverage?

How we can measure the coverage?

Types of coverage

Statement coverage

Branch Coverage or Decision Coverage

Condition coverage

How to choose that which technique is best?

Chapter 5. Test management

Roles and responsibilities of a Test Leader

Roles and responsibilities of a Tester

Purpose and importance of test plans

Things to keep in mind while planning tests

What testing will involve and what it will cost?

Estimation techniques

Factors affecting test effort

Test strategy

Test monitoring

Test control

Configuration management

Risks in software testing

Product risk

Project risk

Risk-based testing

Muzanfar Khan says

January 26, 2018 at 10:32 pm

i think its idea is not good because he relate this with incremental... i think he should explain a little bit. otherwise best

Reply

sajjal noor says

January 19, 2018 at 12:28 pm

very very very ...nice work ... THANKS

Reply

Kyrian says

January 15, 2018 at 10:08 pm

How can spiral and agile hybrid be established

Risk analysis

Incident management

Incident logging Or How to log an Incident

What are incident reports?

How to write a good incident report?

What is test status report?

Chapter 6. Tool support for testing

Types of test tools

Tool for management of testing and tests

Test management tools

Requirements management tools

Incident management tools

Configuration management tools

Static testing tools

Review process support tools

Static analysis tools (D)

Modelling tools (D)

Test specification tools

Test design tools

Test data preparation tools

Test execution and logging tools

Test execution tools

Test harness/ Unit test framework tools (D)

## Reply

theddy msangi says

January 14, 2018 at 6:45 pm

its really good and helpful. thank you

## Reply

BHASU CHANDRA DASSANAYAKE says

December 23, 2017 at 11:24 pm

best best best best best best information it was sooooo help full thanks

## Reply

adutidro says

December 8, 2017 at 11:03 am

very simplified and easy to understand good one

Test comparators

Coverage measurement tools (D)

Security tools

Performance and monitoring tools

Dynamic analysis tools (D)

Performance testing, Load testing and stress-testing tools

Monitoring tools

Advantages and benefits of using testing tools

Disadvantages and risks of testing tools

Factors for software testing tool selection

Proof-of-concept or piloting phase for tool evaluation



**Reply**

JAYAPRAKASH K says

**November 22, 2017 at 10:17 am**

it is really good bro..... very easy to understand.... good work

**Reply**

Meghali Tinni Das says

**November 11, 2017 at 5:19 pm**

it helps me a lot of my studies & mah exam too.

**Reply**

Asma sk says

**November 7, 2017 at 7:43 pm**

Love the explanation easy to understand and could be very useful for me in my studies... Thank you 😊

**Reply**

munira malik says

**October 30, 2017 at 8:06 am**

ever a best website..appropriate and accurate ans of need is always available

**Reply**

CH TalHa says

**October 23, 2017 at 10:44 am**

yeah.. Its Really good  
Thanks for info

**Reply**

Tanaji jagdale says

**October 18, 2017 at 10:38 am**

It's really so good.. and more useful for me.

**Reply**

joseph kiragu says

**October 9, 2017 at 4:14 pm**

nice job it really helpfull

**Reply**

Daud says

**October 6, 2017 at 7:37 pm**

thank you for your notes,two thumbs up!!!!!!

**Reply**

Ivan Songoni says

**October 3, 2017 at 1:19 pm**

Vivid and vital, they are easy to read and understand, thanks so much.

**Reply**

Suyel Bálor says

**September 11, 2017 at 12:25 pm**

Thats really a good explanation  
simple language makes it too easy to understand  
thankx brooo

**Reply**

pranmi says

**September 8, 2017 at 5:14 pm**

hi, I like your information, do u have more information about companies who use all three model waterfall, spiral, Agile what they face problem regarding these model, why they prefer Agile model

**Reply**

namutosi sarah says

August 24, 2017 at 7:25 pm

the difference between build and fix and water fall model

Reply

BALAJI THUMMALA says

August 11, 2017 at 3:47 pm

above mentioned advantages and disadvantages of spiral model is very easy to understand.and your described style is very good

Reply

fida hussain says

August 10, 2017 at 11:44 am

Best page for our helpful thanks

Reply

Thaslima sheheer says

August 2, 2017 at 8:55 pm

Complex things in simple language....

Gud job

Reply

Mansi says

July 31, 2017 at 4:32 pm

I like that all the things are represented perfectly nd the most important thing is that simple language is used .

Reply

Yamini says

July 31, 2017 at 8:47 am

It's really so good.. and more useful for me.. thank u so much

Reply

Pakalapati.Issac Paul Son says

**July 1, 2017 at 11:57 am**

nice information broo.....good work

**Reply**

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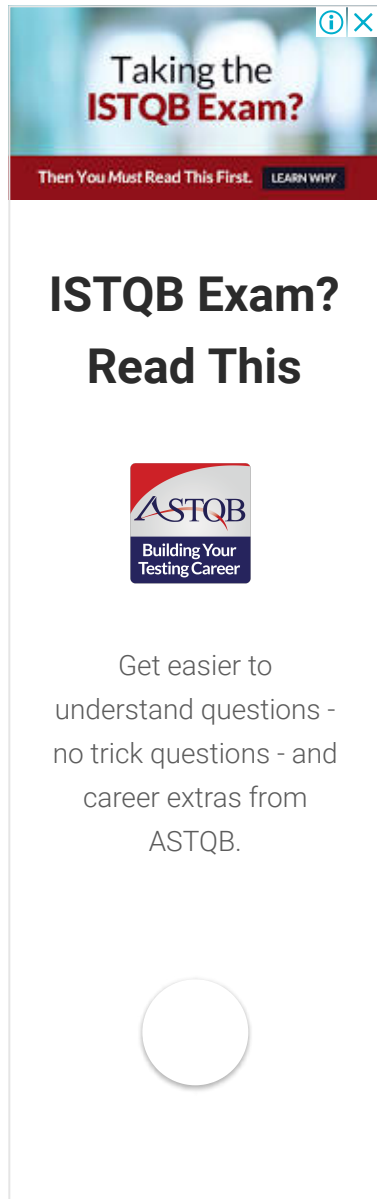
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