Software Testing Mentor

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ISTQB Foundation Level and Software Testing Training

Module 4
Test Design Techniques

Session 6 – Choosing a Test Technique

Choosing a Test Technique

The choice of test technique depends on many factors like

- Type of system
- Regulatory standards
- Customer requirements
- Level and type of risks
- Test objective
- Knowledge of testers
- Documentation available
- Time and budget
- Previous experience of types of defects found

Test techniques cannot be classified as best or worse. Each test techniques is best fit for certain types of tests and not fit for some other tests

Some techniques are fit for all levels of testing while some are fit for just some levels and situations

Its always recommended to use variety of test techniques to ensure effective testing

Choosing a Test Technique Cont.

Structure based techniques can find issues with software code

If there are part of specifications which are missing from code then only Specification based or black box test design techniques will be able to find them

If there are things missing from specifications and code then only experience based techniques can find them

EP and BVA are unlikely to find state transition defects or decision table testing defects

How to choose most appropriate Test Technique?

The decision for choosing the most appropriate test technique depends on number of factors

Internal Factors

- Models used
- Testers knowledge/experience
- Likely defects
- Test objective
- Documentation
- Life cycle model

External Factors

- Risks
- Customer requirements
- Contractual requirements
- Type of software/system
- Regulatory requirements
- Time and budget

Internal Factors

Models used

- Choosing a test technique is dependent on the model used in specification and design
- If model used during the specification and design is Decision table then choosing decision table testing is best fit in this case
- If model used during specification is state transition diagram then state transition testing is best fit

Testers knowledge/experience

- If the tester has good domain expertise and software experience that will also influence the test technique to choose
- Experience based techniques can be used in this case along with other formal test techniques

Likely defects

- If tester knows the modules of likely defects by his experience of testing previous version of software then that can also help in choosing test technique
- If there were many boundary issues in previous version then you should again choose boundary value analysis for current version as well

Internal Factors Cont.

Test objective

- If test objective is to gain confidence in end to end system then use case testing is good idea
- If the test objective is to do more thorough testing then detailed test techniques should be used like black box and white box test techniques

Documentation

- If documentation is available then formal test techniques are good fit
- If the documentation is not available of incomplete then experience based techniques are good fit
- The content of documentation also influences the test technique

Software Life cycle model

- If sequential life cycle model like waterfall model is chosen then formal testing techniques are good fit
- If iterative development model is chosen the n exploratory testing is good fit

External Factors

Risks

- If more risks associated with software(Safety critical, medical life support software's) more thorough test techniques are required
- If the time to release to market is more important then exploratory testing good fit

Customer/ Contractual requirements

- Customer has made contractual agreements to use the specific test techniques

Type of software/system

- Depending on type of software test techniques are influenced
- State transition testing and Decision table testing are good fit for Bank ATM software
- EP and BVA will be good fit for financial software's as they involve lot of calculations involved

External Factors Cont.

Regulatory requirements

- Based on the industry standards there are regulatory requirements for using particular test techniques
- Aircraft, Medical, Defence industries have specific regulatory requirements for test techniques to be used

Time and budget

- Time left to release a software is another major factor to influence test technique
- If more time is available then more test techniques can be used

Conclusion

How to choose most appropriate Test Technique depending on the following factors?

Internal Factors

- Models used
- Testers knowledge/experience
- Likely defects
- Test objective
- Documentation
- Life cycle model

External Factors

- Risks
- Customer requirements
- Contractual requirements
- Type of software/system
- Regulatory requirements
- Time and budget

THANK YOU!!!