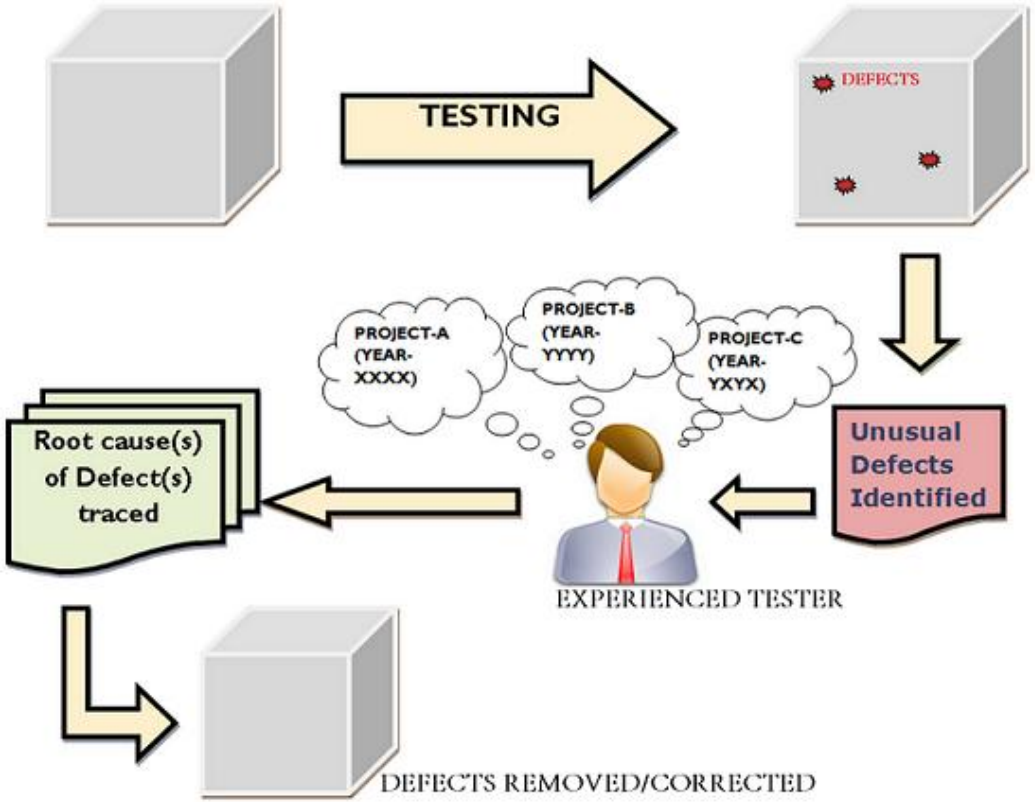
Software Testing

Lecture 21

Experience Based Testing & It's Techniques

Chapter 5:
Dynamic Analysis-Test Design Techniques

Experience Based Testing



Experience Based Testing

- **Besides the systematic approaches, intuitive determination of test cases should be performed.**
- People's knowledge, skills and background are of prime importance to the test conditions and test cases.
- Tester verifies and validates the software product quality
- Proper strategy and documentation plan along with the gained experience
- If used wisely may yield large success to the testers

When experience based testing is required?

- Non-availability of requirements and specifications.
- Limited Knowledge of the Software product.
- Inadequate specification
- Restricted amount of time, to perform testing.

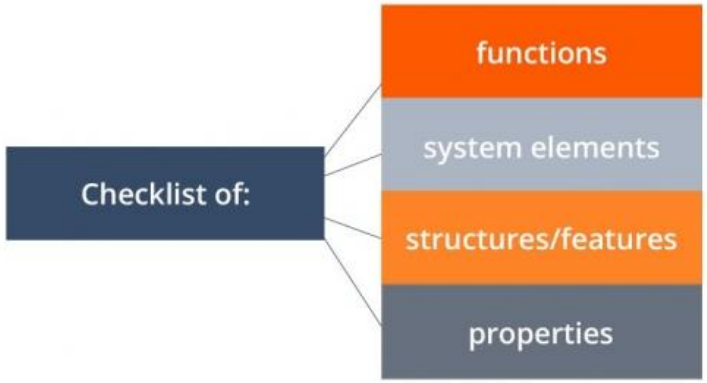
Experience Based Testing Techniques

1- Error Guessing

- Technique of guessing and detecting the potential defects
- Tester identify the vulnerable areas of the software product
- This technique may be considered as a risk analysis method.
- Tester assigns each area with low-risk, medium-risk and high-risk defect areas

2- Checklist Based Testing

- Based on the pre-planned “to-do” list of tasks called a checklist
- Experienced tester based on his past experience prepares the checklist
- Checklist reminds the tester of what to be tested
- Checklist prepared by a tester is not the static and the final list
- Ensures the complete test coverage in this testing.
- Commonly used testing checklists are:



3- Exploratory Testing

- It is used when basis for test design, are of low quality, are obsolete, or do not exist at all.
- Approach is the test activities in exploratory testing are executed nearly in parallel.
- Tester plans and designs what to be tested next while execution of the software.
- Test charter for certain elements of program is created. (tasks or functions). While executing test charter these questions arise

  - Why? (What is the goal of the test run?)
  - What? (What is to be tested?)
  - How? (Which testing method should be used?)
  - What?(What kind of problems should be found?)

- **Key aspect of exploratory testing is learning.**

  - Software , Uses, - Strengths, Weaknesses

- **Example** : shopping website

4- Attack Testing

- **Fault attack**
- Direct focused evaluation by attempt to force specific failures to occur
- **Principle of attack** is based on interaction between software and its environment, including UI, OS with kernel, APIs and file systems.
- Interactions are based on data exchanges, and misalignment in those can be the cause of a failure.
- **Software attacks** (sometimes called fault attacks) are focused on trying to induce a specific type of failure.
- The faults are injected into the software. Two types of injections:
- **Compile time injection**

  - source code is altered to inject simulated faults e.g changing b = b + 1 to b = b – 1

- **Runtime time injection**

  - software is triggered to inject the fault into the running software.

Choosing a Test Technique

- **Which technique is best?**
- Choice test techniques to use depends on a number of internal and external factors
- **Internal Factors:**
  - **Models used**
  - **Tester knowledge and experience**
  - **Likely defects**
  - **Test objective**
  - **Documentation**
  - **Life cycle model**

Choosing a Test Technique

❖ **External Factors:**

- Risk
- Customer I contractual requirements
- Type of system
- Regulatory requirements
- Time and budget

Questions and Answers


Thank
you