Software Testing

Topic #1 – Software White-Box Testing

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TOPIC #1 – SOFTWARE WHITE-BOX TESTING

What Is White-Box Testing?

White-Box Testing Focuses

Why Is White-Box Testing Important?

Who Does White-Box Testing?

White-Box Testing Coverage

TOPIC #1 – SOFTWARE WHITE-BOX TESTING

What is software white-box testing?

White-box testing, also known as glass-box testing or program-based testing.

Definition: Software white-box testing refers to test design based on program source code structures, data, and internal program logics.

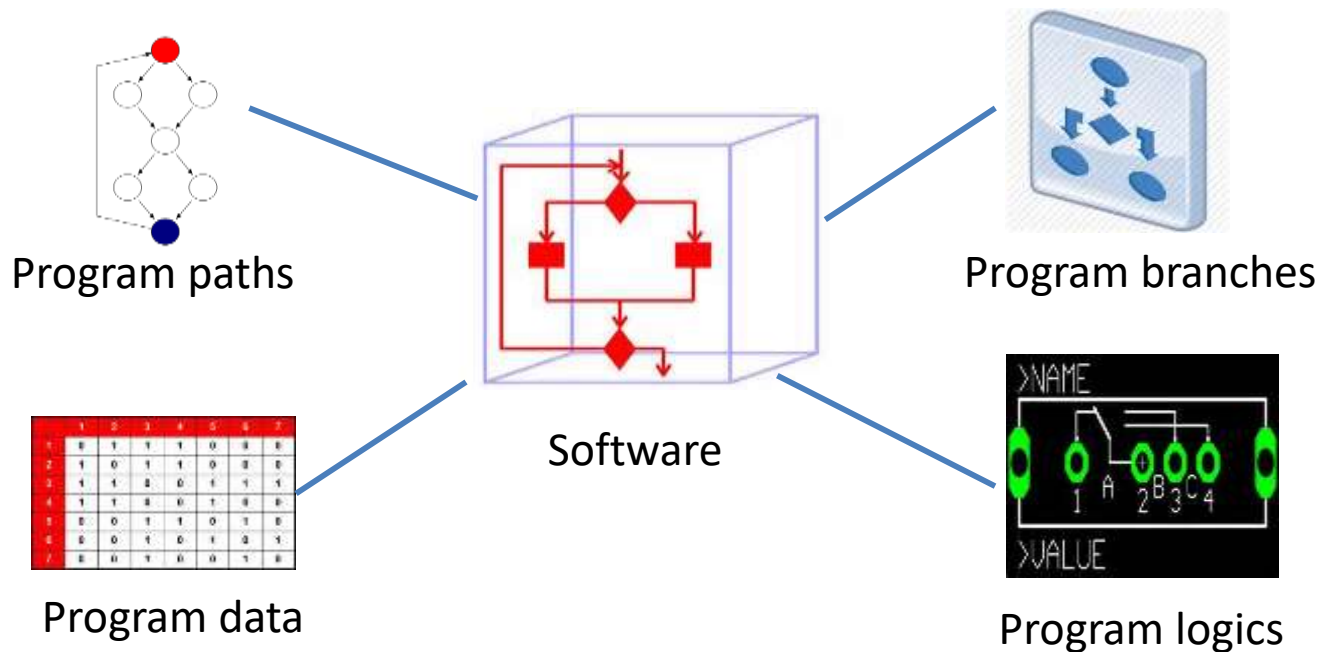## What do you need for white-box testing?

o A white-box testing model and test criteria

o A white-box test design and generation method

o Program source codes
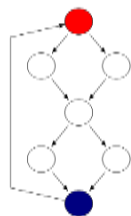
Software Testing

White-Box Testing Focuses

Program paths

Program branches

Software

Program data

Program logics

Why Is White-Box Program Testing Important?
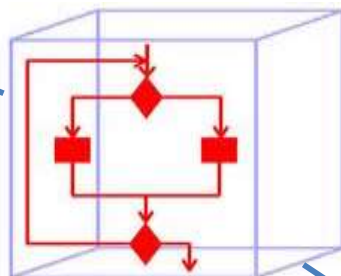
Answer: - Achieve certain program code coverage
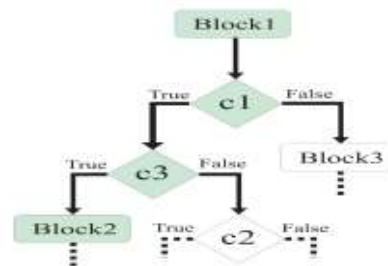   - Assure software program-based test adequacy

Exercise program
control flows

Software

Check program
branches

Cover different
program data and
their values

Discover deadlock codes

Who Does White-Box Program Testing?

Developers perform white-box program testing, not test engineers.

o They only target to software components/modules they created.

o They only use white-box testing methods and tools

o They need to use software program codes

o They must select and achieve white-box program code coverage
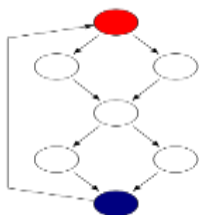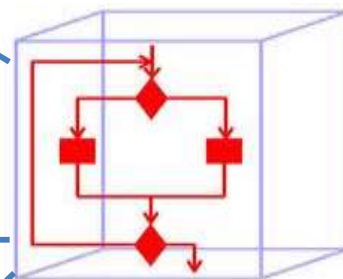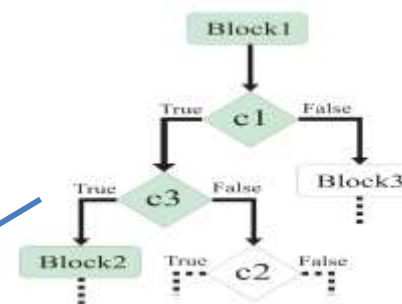
Source codes

White-box Tests

White-Box Program Coverage

Program Source
Code Line Coverage
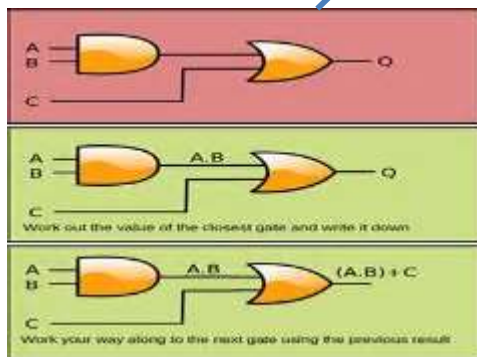
Program Control
Path Coverage

Program Source codes

Program Branch
Coverage

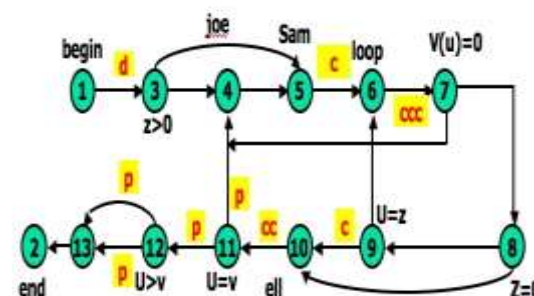Data Flow
Test Coverage

Program Logics
Coverage