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* Types of Testing :

① Coverage : (White / Black Box testing)
Degree of statement, branch (function), data flow (sequence) path etc [It is planned]

⇒ ② Degrees of Coverage :
① No. of requirements.
② No. of Classes identified.
③ No. of Classes actually covered.
④ No. of requirements actually covered.

② Test Case Development :
- input
- expected output
- condition

The no. of estimated test cases and the no. of test cases that are completely ready for execution.
- No. of planned test cases.
- No. of available test cases.
- No. of unplanned test cases.

Requirement - Testing the ATM card & its functions

Test Case ① Card is placed & is validated & it asks for PIN Number
{Tid1} = Enters 4 digits.
{Tid2} = No zeros or null characters.
{Tid3} = All the 4 digits need to be positive numerical
{Tid4} = All digits should be entered one by one.
{Tid5} = All digits need to be validated.

Expected output : All the 4 digits are tested using the test cases

are 5 low with
2 Yes & 3 No outcomes

$\left(\frac{2}{5}\log_2\left(\frac{2}{5}\right)\right) + \frac{3}{5}\log_2\left(\frac{3}{5}\right)$

2 (Yes ins.)

3 (No ins.)

validate the ATM Card function.

⇒ Test Execution :

1. No. of available test cases executed.
2. No. of available test cases executed & passed.
3. No. of unplanned test cases executed.
4. No. of unplanned test cases executed & passed.

→ for a new release, there can be regression testing, (aka. retesting again & again)

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which involves :
① No. of planned regression test executed.
② " " " " " and passed.

0 1	0 0
1 0	0 0
1 1	0 1
0 0	0 0

→ Test Case Condition

③ Test Harness :
· It is important for the test manager to monitor the progress of development of test harness score which is needed for unit and integration testing so that these progress in a timely manner are been developed according to the test schedule.

#① Lines of Code (LOC) for the test harness (planned, available).
② Available LoC for the test harness is planned LoC for the test harness.

★ Testing Maturity Model (TMM)

1) Level 1: Collected data related to program.

2) Level 2: Phase defination.
· Basic testing techniques & methods.
· Initiate test planning process.
· Develop testing and debugging goals

3] Level 3: Integration.
· Control & monitor test process
· Integrate testing into software lifecycle.

- Establish technical training programme.
- Establish a software test organisation.

4] Level 4:

Management and Measurement:

1. Software quality evaluation
2. Test measurement program
3. Establish an organisation wide review program.
4. Optimization on defect prevention & quality control.
   - Test process optimization.
   - Quality control.
   - Application of process data for ~~default~~ defect prevention.

In Devops cross cutting aspects refers to aspects of that multiple stages of SD & Operations lifecycle are made an impact. They ensure that efficiency, security, scalability & maintainability accross the devops pipeline. According to you, write about the cross cutting concerns in devops need to be addressed with the multiple stages.

Dev Ops

- It is a set of practices / tools or cultural philosophies that integrate software development (dev) and IT Operations (OPS) to shorten the development lifecycle while ensuring high software quality.

The key principles:

1. Collaboration & Communication.
2. Automation.
3. Continous Integration.
4. Continous delivery.
5. Monitoring & feedback. (Real time performance)

eg: AWS, AZURE, Github, Docker, Kubernetes, GCP.

These are helpful in attaining efficiency, security, scalability & maintainability.

Cross Cutting:

* Security
* Compliance & Governance
* Observeability & Monitoring
* Scalability & Performance Optimization
* Configuration Management and infrastructure as a code.

* Different Phases in Devops: (Devops Lifecycle)

① Plans

② Development : Continous development & Version Control.
eg: git, github, gitlab.

③ Build : Continous Integration.

④ Testing : Continous testing and quality assurance.
eg: Selenium, OWASP

⑤ Release : Continous development. eg : Github

⑥ Continous delivery & Automation : Deploy. eg : Kubernetes, Ansible

⑦ Operate & Monitor : (Feedback).

Note : Order is Important