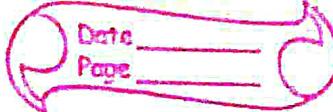


Assignment No. 1



Q.1)

Difference between verification and validation.

→ verification

validation

① It includes checking document, design codes and programs.

It includes testing and validating the actual product.

② It is static testing.

It is dynamic testing.

③ It does not include the

execution of the code.

It includes execution of the

code.

④ methods used are review,

methods used are black box,

inspections and devil-checking.

white box and non functional testing.

⑤ It can find the bugs in the early stage of the development

It can only find the bugs that could not be found by verification process.

⑥ The goal of verification is application and s/w architecture and specification.

The goal of validation is an actual product.

⑦ It comes before validation.

It comes after verification.

⑧ Quality assurance team does verification.

It is executed on s/w code with the help of testing team.

⑨ It is for prevention of error.

It is for detection of errors.

Ques. 1) what is test case? Design the test case for the scenario: "check login functionality".

→ Test case is a set of action executed to verify the particular feature or functionality of our application. A test case contains few steps, test date, pre condition, post condition and test scenario developed for specific test scenario to verify any requirement. The test cases include specific variables or condition using which a testing engineer can compare expected and actual results to determine whether a software product is functioning as per the requirement of the customer.

For a test scenario: check login functionality there are many possible test cases.

Test case 1:-

check results on entering valid user id & password.

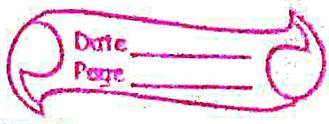
Test case 2:-

check results on entering invalid user id & password.

Test case 3:-

check response when user id is empty and login button is pressed and many more.

The purpose of a standard test case:



Test Case ID	Test Case Description	Test Steps	Test Activity	Expected Result	Actual Result	Pass / Fail
TC01	check log in with valid data	1. website : https://www.guru99.com 2. user id : guru99 3. Enter password : pass99 4. click to submit	User id = guru99 password = pass99	User should be log in into an app	log in into expected an app	pass
TC02	Invalid, check with invalid data	— 1 —	User id = guru199 password = pass99	User should not log in into an App	not log in into an App	Expected pass
TC03	Empty	— 1 —	User id = pass word = pass gg	User should not log in into an Application	not log in into an Application	Expected pass

Ques. 3) Differentiate between Black Box Testing and White Box Testing.

→	Black Box Testing	White Box Testing
①	Implementation of SW is not needed for black box testing.	Implementation is necessary for this testing.
②	It is mostly done by SW tester.	It is mostly done by SW developer.
③	No knowledge of implementation is needed.	Knowledge of implementation is required.
④	It is a functional test of SW.	It is structural test of SW.
⑤	It is behaviour testing of SW.	It is logic testing of SW.
⑥	It is less time consuming.	It is most time consuming.
⑦	It is also called closed testing.	It is called open box testing.
⑧	It is applicable to the higher levels of testing of SW.	It is generally application to the lower levels of SW testing.
⑨	It can be referred to as outer or external SW testing.	It is the inner or the internal SW testing.

(Ans. 4) Enlist any four tools to perform white box testing, also explain advantages and disadvantages of white box testing.

→ The four tools to perform white box testing are as follows:

a) Nettorkit

b) EsTest

c) RUNIT

d) GoogleTest

* Advantages of white box testing : → ...

① Thoroughness : →

complete code coverage is the fundamental tenet of white box testing. The white box testing's thoroughness also lends it a distinct framework. The rule of testing must be precise, engineering-based and well-defined.

② Unit Testing : →

unit test examine single lines of code, or units, to determine whether they function as intended. unit test are useful tool for determining whether a previously functioning component has recently broken.

③ Optimization : →

A section-by-section analysis of the code enables developers to eliminate unnecessary code or condense already-existing code. Additionally, by removing obfuscated that can go undetected during routine testing, code can be made more efficient.

① introspection :→

It allows developers to carefully discuss about implementation. It gives developers a chance to reevaluate designs and how they could be improved.

→ Disadvantages of white Box testing :→

① More errors :→

It is not realistic to test every condition; thus some might go untested. Within the general method of analysis search lines by lines or path by path, errors in the codes might not be found.

② Time consuming :→

It takes a lot of time because it requires creation of wide range of inputs to test every possible path and circumstance.

③ Expensive :→

white-box testing becomes highly time and money-consuming to undertake as it is more thorough.

④ Code based thus it changes quickly :→

If the code base is changing quickly, automated test cases are useless. If the implementation changes frequently, an updated test script is necessary.

(Ques.5) what is unit testing? Explain in detail with suitable example.

→ ① Unit testing is a type of SW testing where individual units or components of SW are tested.

② The purpose is to validate that each unit of the SW code performs as expected.

③ Unit testing is done during the development of an application by the developer.

④ Unit tests isolates a section of code and verify its correctness.

⑤ A unit may be an individual function, method, procedure, module or object.

⑥ White Box testing approach used for unit testing and usually done by the developer.

⑦ Unit testing uses all white box testing techniques as it uses the code of SW application.

a) Data flow testing.

b) Control flow testing.

c) Branch coverage testing.

d) Statement coverage testing.

e) Decision coverage testing.

⑧ Example → If we are given a program

we will start performing the unit test on different components such as FAN, TAN,

- FAN

- TAN

- Amount

- Transfer

- Cancel

Amount Transfer

→ module

Component	Value	Description	Component
FAN	100	Transfer amount	
TAN	100	Transfer amount	
Amount	100	Transfer amount	
Transfer	100	Transfer amount	cancel

→ Let's test 1st component i.e., FAN components.

Value	Description
1234567890	accept value
4311	Error message → account valid or not
blank	Error message → enter some value
5 digit 3 digit	Error message → accept only 4 digit
alpha numeric	Error message → accept only digit
Blocked account No.	Error message
copy and paste the value	Error message → type the value
same as FAN and TAN	Error message

- For TAN component : →
provide the value just like we did in FAN component.
- For amount component : →
provide the value just like we did in FAN and TAN component.
- For transfer component : →
 - ① Enter valid FAN value
 - ② Enter valid TAN value
 - ③ Enter the correct value of amount
 - ④ click on transfer button → amount transfer successfully.
- For cancel component : →
 - ① Enter the value of FAN, TAN and amount.
 - ② click on the cancel button → all data should be cleared.