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Abstract

Identify the best suitable black box testing technique and also frame the code for the mentioned problem statement and find the best suitable white box testing technique.

Case Study

Software Testing and Quality Assurance

# **Case Study**

## **Aim:**

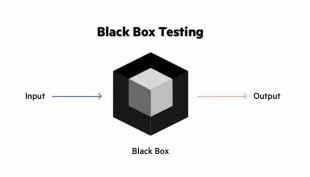
## The BSE Electrical Company charges its domestic consumers using the following slab:

## 

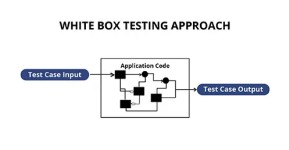
## Identify the best suitable black box testing technique and also frame the code for the abovementioned problem statement and find the best suitable white box testing technique.

## **Theory:**

**Black Box Testing** is a software testing method in which the internal structure/design/implementation of the item being tested is not known to the tester. Only the external design and structure are tested.



**White Box Testing** is a software testing method in which the internal structure/design/implementation of the item being tested is known to the tester. Implementation and impact of the code are tested.



|  |  |
| --- | --- |
| **Black Box Testing** | White Box Testing |
| The Black Box Test is a test that only considers the external behavior of the system; the internal workings of the software is not taken into account. | The White Box Test is a method used to test a software taking into consideration its internal functioning. |
| It is carried out by testers. | It is carried out by software developers. |
| This method is used in [System Testing](https://www.practitest.com/qa-learningcenter/resources/system-testing-vs-integration-testing/) or [Acceptance Testing](https://www.practitest.com/qa-learningcenter/best-practices/what-is-uat-testing/). | This method is used in [Unit Testing or Integration Testing](https://www.practitest.com/qa-learningcenter/resources/unit-test-vs-integration-test/). |
| It is the least time consuming. | It is most time consuming. |
| It is the behavior testing of the software. | It is the logic testing of the software. |
| It is also known as data-driven testing, [functional testing](https://www.practitest.com/qa-learningcenter/resources/what-is-functional-testing/), and closed box testing. | It is also known as clear box testing, code-based testing, structural testing, and transparent testing. |
| Black Box Test is not considered for algorithm testing. | White Box Test is well suitable for algorithm testing. |

## **Source Code:**

cu = int(input("Enter units consumed: "))

amt = 0.0

if cu <= 150 and cu > 0:

    amt = cu\*2

elif cu >= 151 and cu <= 300:

    amt = 200 + 3 \* cu

elif cu >= 301 and cu <= 400:

    amt = 300 + 3.90 \* cu

elif cu > 400:

    amt = 350 + 4.40 \* cu

print("Amount to be paid: ", amt)

## **Output:**

Text

Description automatically generated

# **White Box Testing:**

# **Black Box Testing:**

# **Result:**

The case was successfully studied, coded, executed and tested.

# **Viva Questions**

**Q1. Why choose Open Source Performance Test tool?**

It is essential because it helps to test the following:

* It is executed at different levels such as system, integration, and unit level of software development.
* One primary goal of it is to verify the working of an application.
* It involves the identification of the operational flow of an application.

**Q2 What exactly ad-hoc testing is?**

Ad hoc Testing is an informal or unstructured software testing type that aims to break the testing process in order to find possible defects or errors at an early possible stage. Ad hoc testing is done randomly and it is usually an unplanned activity which does not follow any documentation and test design techniques to create test cases.

**Q3. What are the draw backs of ad-hoc testing?**

Following are some drawbacks:

1. Since ad-hoc testing is done without any planning and in unstructured way so recreation of bugs sometime becomes a big trouble.
2. The test scenarios executed during the ad-hoc testing are not documented so the tester has to keep all the scenarios in their mind which he/she might not be able to recollect in future.
3. Ad-hoc testing is very much dependent on the skilled tester who has thorough knowledge of the product it cannot be done by any new joiner of the team.

**Q4. At what situation it is prompt to implement ad-hoc testing?**

Ad hoc testing can be performed when there is limited time to do elaborative testing. Usually Adhoc testing is performed after the formal test execution. And if time permits, ad hoc testing can be done on the system. Ad hoc testing will be effective only if the tester is knowledgeable of the System Under Test.

**Q5: What are the advantages of ad-hoc testing?**

1. Ad-hoc testing gives freedom to the tester to apply their own new ways of testing the application which helps them to find out more number of defects compared to the formal testing process.
2. This type of testing can be done at anytime anywhere in the Software Development Life cycle (SDLC) without following any formal process.
3. This type of testing is not only limited to the testing team but this can be done by the developer while developing their module which helps them to code in a better way.