מתודולוגיות, סוגי בדיקות, טכניקות ומושגים מעולם הבודק

- הגדר והסבר את המושגים הבאים:

STR- Summary Test Results

This is a document which contains a summary of all test activities and final test results of a testing project, explaining details and activities . This document is prepared after the testing is completed.

סיכום ממצאי בדיקות.

STP -Software Test Plan

This is a detailed document that describes a test strategy, objectives, estimation, resources and processes for testing a software or hardware product.

מסמך תכנון הבדיקות אשר מתואר בפירוט את האסטרטגיה , מטרות, משאבי הבדיקה.

STD - Software Test Description

This is a document that describes the test preparations, test cases and test procedures to be used to perform qualification testing of a computer software item or software system.

אוסף מסמכי התכנון המפורט של הבדיקות, הכוללים את תרחישי הבדיקות, הקלט ותוצאות צפויות.

- תאר את מהלך חיי הפרויקט בשלבים (ALM), יש לציין מי הדמות בכל אחד מהתאים ומהי תרומתו לפרויקט.

תהליך מחזור חיי תוכנה - התהליך כולל את השלבים : ניהול דרישות ,פיתוח תוכנה ,מעקב אחר באגים, ניהול סיכונים , בדיקות ואבטחת איכות

Application Lifecycle Management (ALM) - this is the people , tools , design and processes that manage the life cycle of a software application from conception to end of life, include:

Document Management(ניהול מסמכים) - this is the document control processes at each stage of a document's life, which ensures each is created, maintained and secured in compliance with company procedures and regulatory requirements.

Requirements Management(ניהול דרישות) - this process includes documenting, monitoring, tracking, planning, analyzing, managing and communicating organizational requirements.

Bug tracking(מעקב אחר בעיות ופגמים) - Tracking reported software bugs is an integral part of all software development projects. The ALM tool should be able to pull the information from bug-tracking tools and locate it with the right requirements. In this way it will ensure that all bugs and failed tests are properly followed by the company's standard processes. Most ALM tools provide reporting capabilities that allow them to create compliance reports.

Testing and quality assurance(בדיקות ואבטחת איכות) - ALM tool provides teams assurance capabilities that can immediately detect and correct software bugs and other problem, include basic test case management, let to create and manage test cases in folders, with sorting and filtering capabilities . ALM tools include features for both manual and automated testing.

Deployment and DevOps - In simple words, a deployment is a procedure for transferring a site to the server. This operation can be very difficult and directly depends on the tools used. When programmers start implementing deploy, they do the following: uploading code to the server; all dependencies that are required are installed; the assembly process is being performed, for example the fronted part is being assembled ; sql scripts implemented; an updated version of the code is being downloaded. DevOps- Development and Operations- this is interactive work between programmers, testers and administrators.The project management describes what the business expects from the application or a product, and the development team creates the structure of the future product and describes the stages of its creation.

- בדיקות רגרסיה, הסבר למה נועדו?

-בדיקה של תוכנית שנבדקה בעבר אחרי שבוצעו בה שינויים, על מנת לוודא שדפקטים לא נוצרו או לגלות דפקטים באזורים בתוכנה שלא נמצאו בהם דפקטים בעבר, כתוצאה מהשינוי שנעשה(תקלות חדשות שלא היו לפני)

Regression testing — testing of a previously tested program following modification to ensure that defects have not been introduced or uncovered in unchanged areas of the software, as a result of the changes made. It is performed when the software or its environment is changed. Regression testing is a key quality assurance tool and should be used on almost any project. Regression tests do not need to be performed after each change!

(For example, you changed the date in the footer of the site.Do we need to go through 350 test cases and recheck the entire site? — of course not! You will waste your time in vain)Such fixes can be tested in 10 seconds using the simplest checklist or by doing a code review.)

- מהם בדיקות נגישות ולשם מה נועדו?

מערכת נגישות מאפשרת למשתמשים בעלי מוגבלויות שונות כגון: לקות ראיה, לקות שמיעה, רעד בידיים, וכדומה להשתמש במערכת .

Accessibility Testing . This means that the application is usable by people with disabilities like hearing, color blindness, old age and other disadvantages, for example the program includes voice guidance.

- מהם בדיקות תאימות ולשם מה נועדו?

בדיקה לאימות התפקוד התקין של התוכנה בסביבות/פלטפורמות שונות כגון: גרסאות של מערכות הפלה, דפדפנים שונים על גבי פלטפורמות שונות .

Compatibility Testing . Is a type of non-functional testing to verify the correct operation of a product in a certain environment. The environment may include the following elements:Hardware platform;Operating System (Unix, Windows, macOS, ...); Browsers (Internet Explorer, Firefox, Opera, Chrome, Safari);Different screen extensions.

For example: Facebook application with Android 9.0 and with Android 10.0 for the same version of Facebook App.

- הסבר את סוגי הבדיקות שלפניך, הדגש את מטרת הבדיקה והבא דוגמא כרצונך שתשקף זאת

1. GUI- זוהי בדיקה שמבהירה האם מה שהוגדר באפיון אכן מתממש במציאות בכל הנוגע להתנהגות שדות , פורמט ואורך שלהן(של הזנת מידע) ותפקודם, גם שורות תפריטים , לחצנים, סמלים, סרגל כלים, חלונות וכדומה. מטרת בדיקה ממשק המשתמש הגרפי היא להבטיח את פונקציונליות של ממשק המשתמש.

בדיקות ממשק משתמש הוא תהליך של הבטחת פונקציונליות נאותה של ממשק המשתמש הגרפי עבור יישום נתון ולוודא שהוא תואם את המפרט בהוראות או באפיון שלה.בדיקות ממשק משתמש מעריך אלמנטים עיצוביים, צבעים, גופנים, גדלי גופנים, תוויות, תיבות טקסט, כיתובים, כפתורים, סמלים, קישורים ותוכן. בדיקת ממשק משתמש יכולה להיות ידנית או אוטומטית.

GUI testing is the process of ensuring proper functionality of the graphical user interface for a given application and making sure it conforms to its written specifications. GUI testing evaluates design elements, colors, fonts, font sizes, labels, text boxes, captions, buttons, icons, links and content. GUI testing can be manual or automatic.

For example: Testing the screen in different resolutions by zooming in and out, for example 640 x 480, 600×800, etc.

2. FUNCTIONALITY -בדיקות פונקציונליות בודקות יישום , אתר אינטרנט, מערכת או מוצר כדי להבטיח שהוא עושה בדיוק את מה שהוא נועד.בדיקות פונקציונליות הן מסוג קופסה שחורה , בדיקה חיובית ושלילית

Functional testing checks an application ,website , a system or a product to ensure that it is doing exactly what it is meant to. In the planning stages, every project creates a document listing functional or requirement specifications. It is a list of what the app/system/website/product is supposed to do, from a user's side.Positive testing determines that a product works as expected.Negative testing ensures that a product can well handle invalid input or unexpected user behavior.

3. INTERFACE - בדיקת ממשקים פנימיים וממשקים חיצונים מהמערכת ואליה כשיש דיבור בין שני ממשקים לא של אותו בית תוכנה.

Interface testing verifies the communication between two different software systems .It checks the authentication of the connection established. There are three phases of Interface testing in an Interface lifecycle: Configuration and Development; Validation; Maintenance .

API-Application Interface

4. PERFORMANCE - בדיקה, המתבצעת על מנת לקבוע באיזו מהירות פועלת מערכת מחשב או חלק ממנה בעומס מסוים.

Performance testing is a form of software testing that focuses on how a system running the system performs under a particular load. This is not about finding software bugs or defects. For example

5. SANITY - בדיקת שפיות היא קבוצת משנה של בדיקות רגרסיה, מתבצעת על מנת להבטיח שינויים בקוד פועלים כצפוי.

Sanity testing is a subset of regression testing. The main purpose of this testing is to determine that changes or proposed functionality are working as expected.

6. USABILITY - בדיקה לקביעת היקף שבו מוצר תוכנה מובן, קל ללמוד, קל להפעלה ומושך עבור המשתמשים(מערכת אינטואיטיבית).

Usability Testing - It is testing the usability of a product's interface by end users, shows how the product meets user expectations, identifies problem areas in the interface, and makes it possible to look at the product through the eyes of users.

7. AUTHORIZATIONS - הרשאה היא הרעיון של מתג גישה למשאבים רק לאלה המורשים להשתמש בהם. בדיקת הרשאה פירושה להבין כיצד פועל תהליך ההרשאה , ושימוש במידע זה כדי לעקוף את מנגנון ההרשאה.

Authorization is the concept of following access to resources only to those permitted to use them. Testing for Authorization means understanding how the authorization process works, and using that information to circumvent the authorization mechanism.

8. LOAD - בדיקת עומסים , בדיקה מסוג זה מאפשרת להעביר את התנהגות המערכת בעומס הולך וגובר , מטרת הבדיקה היא גם לקבוע את העומס המקסימלי שהמערכת יכולה לעמוד בו.

Load testing - This type of testing allows you to evaluate the behavior of the system under increasing load, the purpose of load testing is also to determine the maximum load that the system can withstand.

9. BLACK BOX TESTING - בדיקות פונקציונליות ולא פונקציונליות המתבצעות ללא התייחסות למבנה הפנימי של הרכיב או מערכת, מה שנבדק זה רק הקלט והפלט בפועל, מול הצפוי .

Black box testing checks scenarios where the system can break. For example , a user might enter the password in the wrong format, and a user might not receive an error message on entering an incorrect password.Here are some types of Black box testing: Functional testing, Non-functional testing,Regression testing.

10. ENVIRONMENT - סביבות מחשוב עצמאיות ונפרדות המשמשות את הפיתוח, הבדיקות והייצור הכוללת חומרה, סימולטורים, כלים, תוכנות אלמנטים תומכים אחרים הנדרשים לביצוע הבדיקות.

Environment Testing - It is an environment in which a system is tested - a program, website, application. For example , hosting is a place where a website is stored, hosting is an environment where a website can be located.

11. TEST CASE - סט של ערכי קלט, תנאי ביצוע, תוצאה צפויה ותוצאה בפועל, שפותח עבור בדיקה ספציפית על מנת לוודא שהיא עומדת בדרישות או בתנאים מסוימים - לוודא שהדרישה מולאה.

Test Case - Is a specification of the inputs, execution conditions, testing procedure , and expected results that define a single test to be executed to achieve a particular software testing objective, such as to exercise a particular program path or to verify compliance with a specific requirement.

A test case is a test of the functionality of a program or project. Writing a test case means creating a textual description of the process of testing some part or function of the project.

Test cases are needed for team members who can test the program and get to know it without reading all the code, but by reading only the test case .

12. BUG - הבאג הוא השם של פגמים ושגיאות

The bug is the informal name of defects, which means that software or application is not working as per requirement. In software testing , a software bug can also be an issue, error, fault, or failure.

13. **Risk management(ניהול סיכונים)**

Risk management - this is to identify , assess, treat, monitor and report the risk followed by coordinated and economical application of resources to minimize the cost of risk for the organization.

14. **SITE** - הסביבה מריצים את תרחישי הבדיקה.

The scenario test environment.

15. **BOUNDARY VALUES** - בדיקת ערכי קצה , מעל הגבול, על הגבול ומתחת לגבול.

Boundary Value Testing is the process of testing between extreme ends or boundaries between partitions of the input values. So these ends like Start-End,

Lower-Upper, Just inside- Just Outside values are called boundary values and the testing called - boundary testing.

] **שאלה מראיון עבודה:]**

אם היית נדרש לערוך בדיקות מקיפות למעלית נוסעים רגילה,

1. באלו סוגי בדיקות היית בוחר?

2. עבור כל סוג בדיקה הדגם כיצד היית בודק הלכה למעשה.

בהצלחה

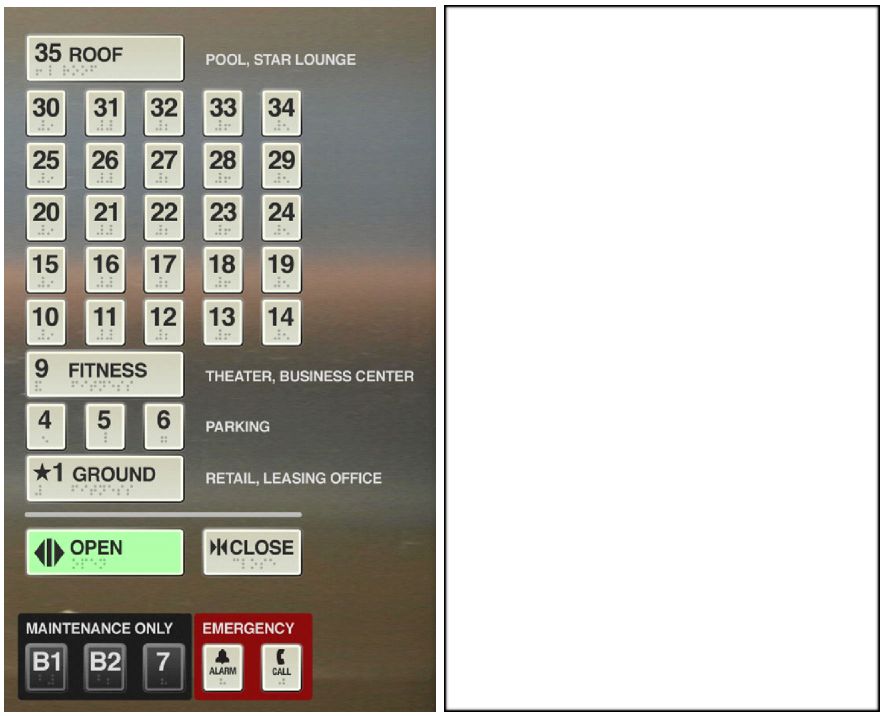
שאלות 1-5: 6 נק' לשאלה (30) | שאלה 6: 3 נק' למושג (45) | חלק ג' : 25 נק' לכל החלק

דרישות למעלית: אנא הדגם מה סוג הבדיקה ואיך תבדוק הלכה למעשה את המעלית?

חווה דעתך לגבי הפאנל שהוצע על ידי ספק המעלית – מה דעתך עליו?

67/5000The elevator has a unique ticket for the office floors
The parking floors can be reached by another card
The lift supports braille
The elevator supports English and Hebrew (an office building in Nazareth)
In the compound there is another elevator that is a Shabbat elevator
When the Saturday elevator operates, the main elevator is disabled
Admin is responsible for setting the Shabbat times for the whole year in advance
The lift can accommodate 10 people or 680 kg
A minor under the age of 14 is not permitted to board the elevator alone
An emergency button turns the security guard at the entrance to the lobby
Another emergency button refers to the city fire department

Inside the elevator is the daily Euro rate which is updated immediately



First to ask the question :what is the elevator for, second what are requirements, then to write a plan test .

What is the primary function of an elevator? To haul people up and down to their respective floors.

1.

-The purpose of the test-plan.

-Elevator data, technical characteristics.

-The purpose of elevator testing.

2. Test plan :

- Static testing (dokument testing,certification testing(ISO, end etc))

-Functional Testing

-Security Testing

-Non-Functional Testing:

a) Usability Testing
b) Load Testing
c) Stress Testing
d) Performance Testing

-GUI Testing

The purpose of this test plan is to explain as much as possible how to test the elevator.

Testing available documentation, checking the operating instructions.

Main technical characteristics and requirements.

Functional Testing:

1.Press the elevator buttons on each floor in turn, the elevator should arrive.If we have a unique card for office floors we check how it works with the card/ticket.

2.Check the operation of the buttons inside the elevator, when we press the button, the elevator goes to the selected floor.

3.If we press a few buttons inside the elevator, the elevator goes to each floor in turn.

4.Press the stop button while the elevator is moving - the elevator goes to the nearest floor , stops and opens the doors.

5.When we press the call button , the speaker and microphone turn on and the call button automatically makes a call to a preset extension number.

6.Push the button alarm, check how it works, the instructions say that the emergency button turns on the security guard at the entrance to the lobby.

7.Push another button alarm and check that the button refers to the city fire department.

8.The doors open when the elevator arrives.

9.The doors close when the elevator starts moving.

10.If there is an obstacle, the doors open automatically.

11. If there is an excess of the maximum permissible weight, the doors do not close and are given a sound signal.

12.If the elevator is empty, it moves to the selected floor.

13.Take the elevator from the first floor to the last floor.

14.the same but from last floor to the first floor.

15. Take the elevator from #10 floors to #20 floors and from #20 to # 10.

16.When few persons call the elevator from different floors , the elevator should go to the nearest floor in this way , for example the elevator in 4th floor , moving towards 9th floor and someone one from 7th floor and others from second floor presses buttons, as the elevator goes first to 7th floor and then to 2nd floor.

16.Take the elevator down to the parking area.If we have a unique card for the parking floor - check how it works.We see in the picture that the parking lot is located on 4,5,6 floors, so we are trying to get down to these floors, using a card or spesial key.

17.Button 9 tells us that this is a fitness, theater, business center , checking it. We also check the correctness of the button B1,B2,7 - maintenance only and top floor 35 that there is a swimming pool, star lounge. We press on the buttons one by one , go to the locations and check the correctness of the inscription and location.

18.Cheking the Shabbat elevator, that is, the elevator works with stops on each floor without pressing buttons, only on Saturday.Press any number of floors, the main elevator must be disabled.

19.Check the elevator lighting, also the lighting of buttons when pressed.

20. When we are in the elevator for more than 10 seconds and do not press the buttons the doors should automatically close.

21.Check each button for compliance with its functionality.Check all buttons from 1 to 35, we see in the picture that the buttons 2,3,7,8 are missing.

22.there is no display in the picture , but if there is a display, check how data is displayed, check each button.

23.Check how the sensors in the doors react to moving hands between doors.

Security Testing:

1.Some elevators have high security and operate only when authorized with a card/key.Check how it works according to the instruction for using the card/key.

2.The button ”stop” causes the elevator to stop.

3.Pressing the “Alarm” ensures safety during a certain time and the ability to talk with the dispatcher , to hear him.

4.To verify maksimum elevator’s weight safety.

5.Elevator must not open doors while moving when the button”open doors” is pushed.

6.Check the emergency braking system.

7.Check how we can go to the top floors and between floors using a unique card, and then using another card move to the parking floor.

8.Check security and compliance of the card/key - insert wrong card, insert card wrong way.

9.Check for air conditioning and ventilation.

10.Check the good lighting of the elevator.

11.Make sure that inside the elevator there is an inscription that says that a minor under the age of 14 is not permitted to board the elevator alone.

12.Automatic opening of doors in the presence of an obstacle.

Usability Testing:

1.Check how the program for updating the daily euro exchange rate works: enter a value in the field and compare the result with another application.

2.Check if there are no noises while the elevator works.

3.Smooth and soft operation of doors, and also noiselessness.

4.Check the presence of a handrail in the elevator.

5.presence of a mirror .

6.Convenience of buttons, backlight,

7.The space inside the elevator is large enough for several people.

8.Good lighting inside the elevator.

9.The display size and letters are clear and right size.

10.The overall feeling of comfort and convenience.

Load Testing:

1.Lifting the elevator with a load of 680 kg.(positive testing)

2.Lifting the elevator with a load of 700 kg.(negative testing)

3.Lifting the elevator with a load of 800 kg.(negative testing)

4.the elevator moves down a load with 680kg(positive test)

5.the elevator moves down a load with 700kg(negative test)

6.the elevator moves down a load with 800 kg(negative test)

7.How will the elevator behave if there are 10 people(with an average weight) inside (positive test)

8.How will the elevator behave if there are 15 people inside (negative test)

Stress Testing:

1.Loosening of the elevator during movement.

2.Trying to open the doors with hands during movement.

3.Jump up while moving.

4.Check the sensor's response to smoke.

GUI Testing:

1.Aesthetic general appearance of graphic components.

2.Good location of the button panel and display .

3.How much space between buttons, what is the size of buttons, fonts.The buttons should be convenient in arrangement and combination, clear and undestandable.

4.the lighting of buttons when pressed.

5.display size and lighting, colors of digits and fonts.

6.the image of buttons close/open doors - arrows , their correctness.

7.Correct spelling of all words , signs, digits on the panel , display and on the buttons.

Performance:

1. Check that all parts of the elevator work without delay.

2.Doors open and close evenly, without delay.

Accessibility Testing:

1. We know that the elevator supports braille,this means that the buttons have a raised point tactile font, designed for blind people and people with poor eyesight. To make sure we need to run our fingers over the surface of the buttons.
2. Check if there are handrails inside the elevator.
3. Check if there is enough space for a wheelchair inside the elevator.
4. Check if the buttons have voice guidance.

Internationalization and localization:

1.Check that the buttons and display use symbols in English and Hebrew.

2.We can also check if the location of the building is specified, our requirements say that the office is located in Nazareth, check the location.

Testing the operation of the elevator should be of very high quality, because the safety of people depends on it. I would add more security tests and also load and stress tests. I would change the button panel to a touch panel.

Completing these exam tasks, I used materials from QA Course , Google search and my own experience , own understanding of terminology and personal observation as a user(e.g. I use the elevator every day)