



FRUGALTESTING

Your Trusted Testing and DevOps Partner

Logical Thinking and SDET

General Instructions----**Subject: Frugal Testing SDET Rounds**

Welcome to the Frugal Testing SDET rounds. In this exam, you will find two sections:

Section A: A series of 2 questions out of which you have to attempt ONLY ONE. The single question bears 20 points.

Section B: A series of 19 questions each bearing 5 points for a total of 95 points. Question Number 21 does not carry any marks however is compulsory.

General Instructions:

Also, follow the instructions on how to save and share the test code.

1. It has been assumed that automation testing is a totally new practice for the person attempting this exercise.
2. It is recommended that all answers are precise and at least 100 words long.
3. Please do not take help from others, but rather use the internet freely while doing this homework as the same will be discussed in detail in the interview.
4. There should not be any plagiarism.

Prerequisites for Section A:

1. Download and install the Java Software Development Kit (JDK)
2. Install Eclipse/IntelliJ IDE
3. Download the Selenium Java Client Driver
4. Configure Eclipse/IntelliJ IDE with WebDriver

The closure date for this homework is << 32 Hours >>. For any queries/help, kindly get in contact with your placement coordinator for any specific query.

Please note: The final response file should be saved as “Zip file” that should contain:

- For Section A:
 - Screen recording video file of the complete execution from displaying the written code, running the complete test suite from first test case till the last followed by showing the saved screenshots and logs in a folder from the test run.
 - Exported project file from IDE.
- For Section B: A word file containing all 21 answers.

Zip file should be submitted in the following format:

<Name_of_Candidate>_<College Name>_<Roll Number>

Please submit the file to your placement cell officer.

Section A:

Attempt **any one** question as per your choice from 2 questions below:

Preferred IDE to be used - Eclipse or IntelliJ

Automation tool to be used – Selenium

1. Automate the functionality to book the train from <https://www.makemytrip.com/railways/>
Check if you have landed in the correct page
Print the URL and Title of the Page
Click on FROM
Enter the city in FROM: DELHI
Click on TO
Enter the city in TO: LUCKNOW
Click on Travel Date
Select a date: 20 May
Click on class.
Select a class from dropdown: Third AC.
Click on SEARCH Button.
Record the Automation Script Running using any Screen Recording Software.
Share the drive link for the recording.
Save screenshots and logs of all the steps.
Share the link of the main code file in PDF form.

Video link:

<https://drive.google.com/file/d/1JHJraYalJ4Nf2TmCoo7eP8aADYxWIBuD/view?usp=sharing>

Section B:

All questions below are **mandatory** to answer.

2. Visit through the website of Frugal Testing:

a. What pages did you find crucial and why?

As a student interested in frugal testing, I consider the Services page featuring Automation Testing and Mobile Testing crucial because it offers foundational knowledge, aligns with current industry trends, emphasizes cost-effectiveness, fosters diverse skill development, and meets the demands of clients and the job market, providing a comprehensive understanding of key components in frugal testing and positioning me for future career opportunities.

b. Tell us which of our case studies you find as most valuable and Why?

As a student, I find the case study titled "How we helped a child care web application improve 70% in performance" to be the most valuable among your examples. This case study's substantial performance improvement showcases the effectiveness of frugal testing, its applicability across diverse domains, and its user-centric approach, offering valuable insights into problem-solving skills and client satisfaction, which align with my goals of learning practical, impactful testing strategies and client-focused practices in the frugal testing field.

3. Reasons for your interest in this internship and what skills or experiences do you hope to gain?

As a student, I am drawn to the frugal testing internship because it offers a unique opportunity to combine my passion for efficiency with practical skills development. I believe in the power of doing more with less, and I'm eager to learn how to optimize testing processes, minimize waste, and promote sustainability in a real-world setting. Through this experience, I hope to enhance my adaptability, communication, analytical, and technical skills while building a valuable professional network and contributing to innovative solutions in the field.

4. Tell us about a situation where you had to work under pressure?

In my studies, I faced significant pressure during a group project when a critical component malfunctioned just one week before the deadline. This pivotal feature was essential to the project's success,

and the situation was daunting. However, our team rose to the challenge, working tirelessly, maintaining clear communication, and delegating tasks effectively. We identified and resolved the issue, conducted thorough testing, and successfully met the deadline. This experience taught me the importance of adaptability, teamwork, and composure under pressure, valuable skills for both academia and future professional endeavors.

5. What are your strengths and areas of improvement? Elucidate two examples of each and how do you plan to work on your areas of improvement?

As a student, my strengths lie in my strong work ethic, as evidenced by my consistent top performance in rigorous courses and effective time management skills that allow me to balance academics, part-time employment, and extracurricular activities successfully. However, I recognize the need for improvement in public speaking, as I often feel nervous and lack confidence during presentations, affecting my ability to communicate ideas effectively. Additionally, I occasionally struggle with procrastination, which has led to unnecessary stress and reduced work quality on long-term assignments. To address these areas of improvement, I plan to enroll in public speaking courses, seek opportunities for practice and feedback, and actively work on building confidence in my speaking abilities. For procrastination, I intend to implement better time management strategies, utilize productivity techniques, and create a focused study environment to foster discipline and improve my overall academic performance and personal development.

6. According to you, what is the importance of the work environment and what environment do you prefer to work in? How would you add value to our organization?

The work environment holds immense importance for students as it profoundly impacts productivity and personal growth. Personally, I thrive in a collaborative and inclusive setting that fosters open communication, creativity, and diversity. In your organization, I would add value through my strong work ethic, effective time management, and dedication to learning. I envision actively participating in team projects, offering innovative insights, and applying my problem-solving skills to address challenges. My adaptability and commitment align with your organization's dynamic nature, and I am eager to uphold your values, contribute to a positive work culture, and continuously develop my skills to support your success.

7. What is your vision about life and professional career after 5 years?

In five years, I envision a fulfilling life and a thriving professional career where I've not only completed my academic journey with distinction but also gained valuable industry experience in a dynamic and innovative

role. I see myself contributing meaningfully to projects, embracing leadership opportunities, and continually expanding my skill set while maintaining a strong work-life balance. Ultimately, I aim to make a positive impact on my chosen field, foster meaningful connections, and strive for personal growth, all while pursuing a fulfilling and purpose-driven life.

8. What is the impact of semiconductor chip shortage across the global economy?

The semiconductor chip shortage has profoundly impacted the global economy by disrupting supply chains, causing production delays, and reducing output in industries like automotive and consumer electronics. This shortage has not only hindered economic growth but also raised concerns about national security and prompted increased investments in domestic semiconductor manufacturing. The shortage underscores the critical role of semiconductor technology in the modern world and the need for collaborative solutions to secure the supply of these essential components.

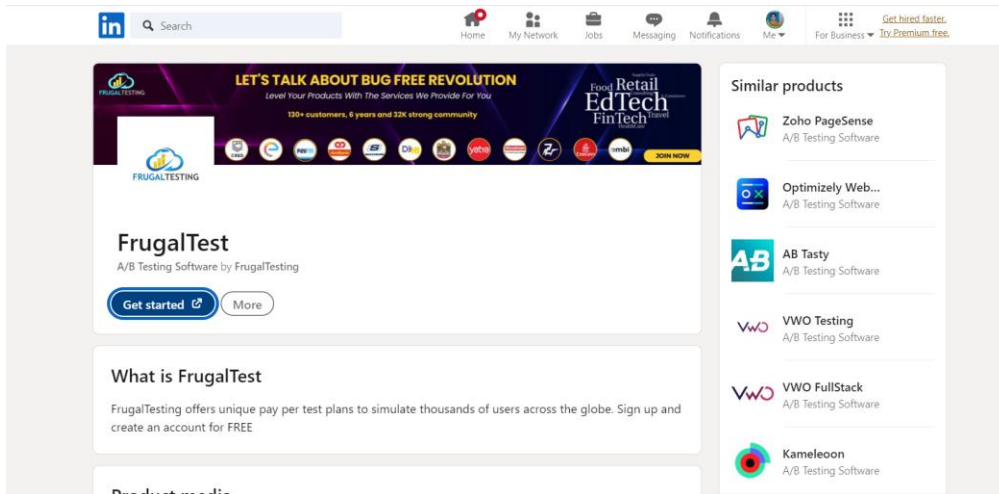
9. Please share the following details in your Profile :

- a. LinkedIn Profile Link- <https://www.linkedin.com/in/madupu-srilekha-021a2320a/>
- b. Resume (PDF file)- <https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:a9c96ec4-1c64-3538-a712-fb390f130434>
- c. Any other Technical profiles like Hackerrank, CodeChef, Github, HackerEarth?
Github- <https://github.com/Srilekha-09>
- d. Any other Project links about which you are really proud of

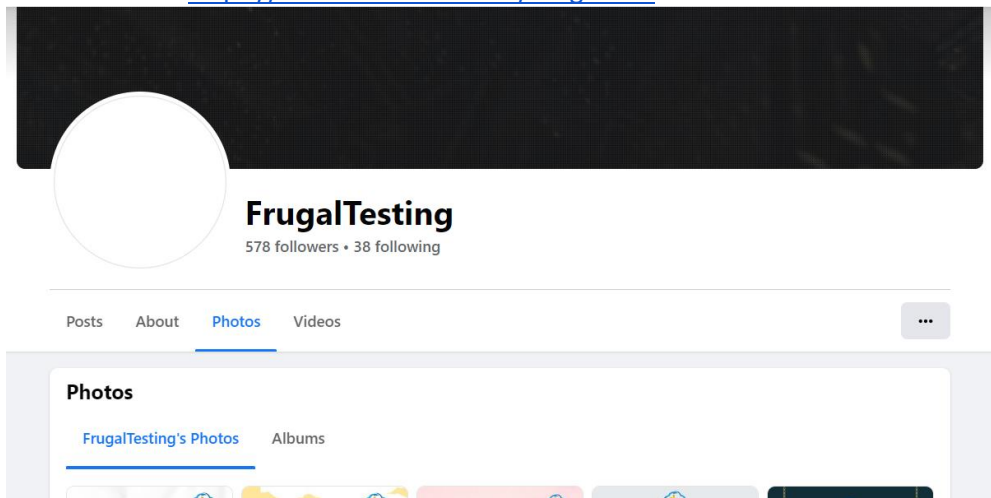
10. Visit and follow the Frugal Testing page on all the social media platforms. Like/Share the posts and also share your views on the posts in the comment section.

- **You have to share the screenshot in the answer sheet as proof for this task.**

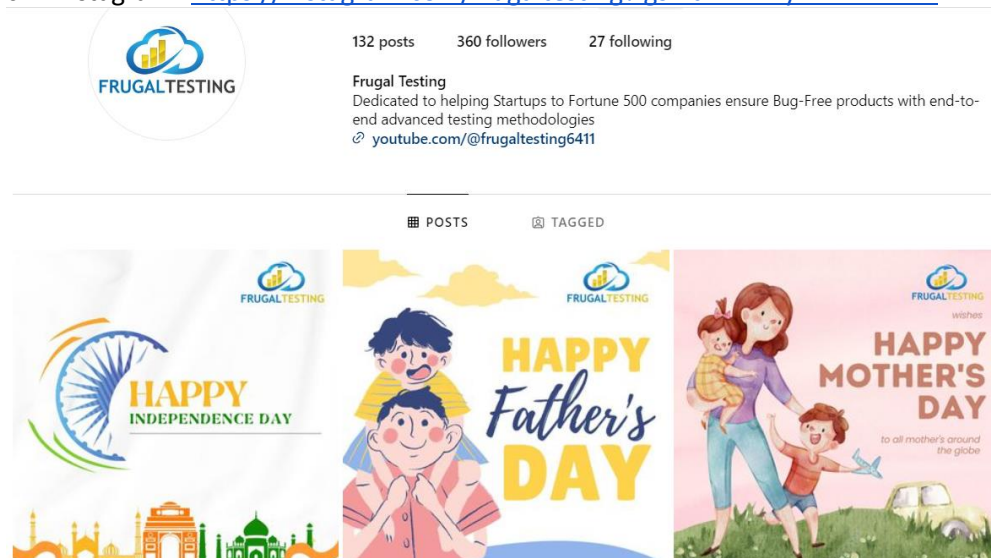
- a. LinkedIn : <https://www.linkedin.com/company/frugaltesting/mycompany/>



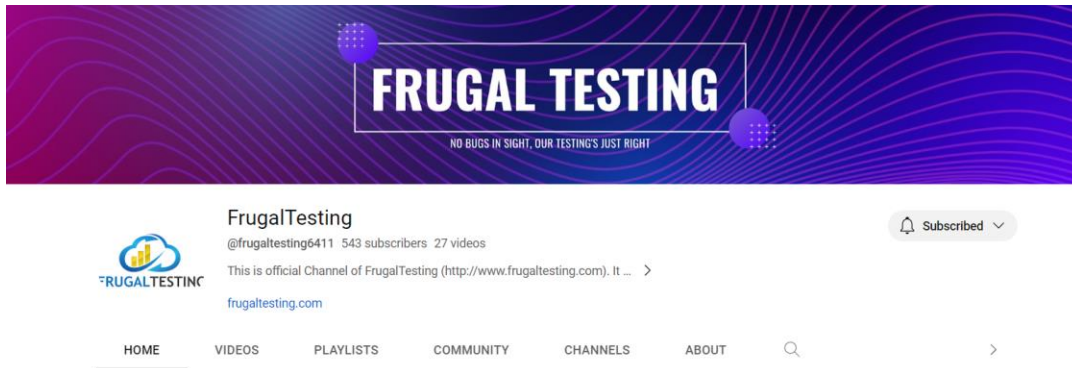
b. FaceBook : <https://www.facebook.com/FrugalTesting>



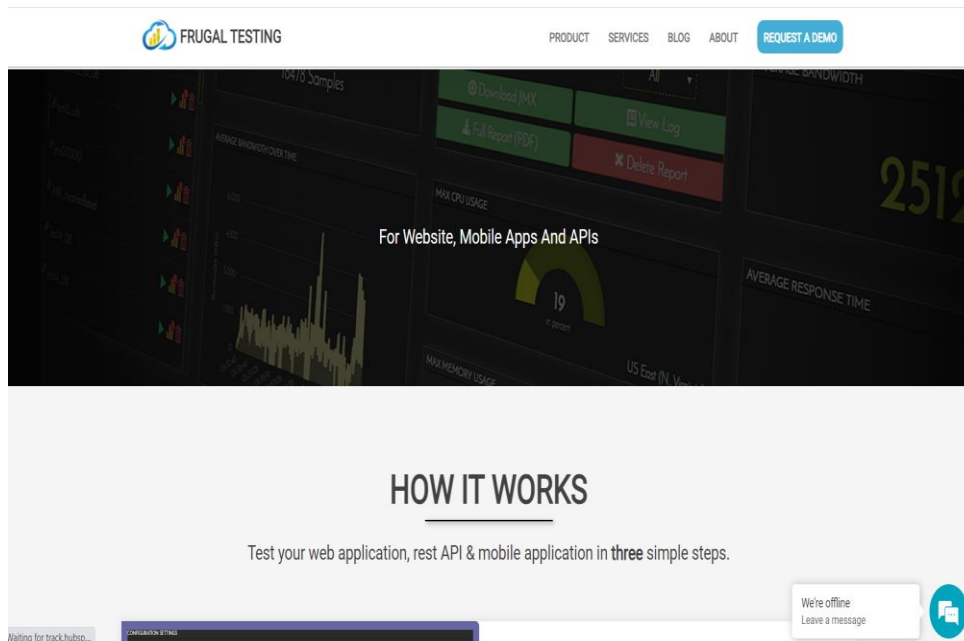
c. Instagram : <https://instagram.com/frugaltesting?igshid=YmMyMTA2M2Y=>



d. YouTube : <https://www.youtube.com/channel/UCjkgYGfeqU4ZPKQNm1V5tg/featured>



e. GooglePage : <https://frugaltesting.com/>



11. What do you understand by test closure?

Test closure is the final phase of the software testing process where testing activities for a specific project or testing cycle are formally concluded. It involves evaluating test results against predefined exit criteria, creating comprehensive documentation like test summary reports, managing remaining defects, releasing testing resources, sharing knowledge gained during testing, and holding a formal closure meeting or document to officially conclude the testing phase. Test closure ensures that all testing tasks are completed satisfactorily, provides stakeholders with a clear understanding of testing outcomes, and captures lessons learned for process improvement in future projects.

12. What is monkey testing?

Monkey testing, also known as random testing, is a software testing technique where the program or application is subjected to unpredictable and random inputs or actions, with the aim of discovering

unexpected issues, evaluating its robustness, and potentially stress testing it. This method involves generating random inputs without a predefined test plan and can be performed manually or with automated tools. Monkey testing is valuable for uncovering hidden defects and vulnerabilities that may not be apparent in structured testing, but it should be used in conjunction with other testing methods, not as a sole testing strategy.

13. How do we create an Amazon EC2 instance?

To create an Amazon EC2 instance, first sign in to the AWS Management Console, navigate to the EC2 Dashboard, click "Launch Instance," choose an Amazon Machine Image (AMI), select an instance type, configure instance details, add storage, assign tags (optional), configure security groups, review settings, launch the instance, and securely access and configure it using SSH (for Linux) or Remote Desktop (for Windows) based on the key pair provided during launch.

14. Explain the PDCA cycle?

The PDCA cycle, or Plan-Do-Check-Act cycle, is a continuous improvement framework used in management and quality control. It begins with planning, where objectives and processes are defined; then, actions are taken (Do) to implement the plan. Subsequently, the outcomes are evaluated (Check) against established goals, and based on the results, necessary actions are taken (Act) to make improvements or adjustments. This iterative cycle helps organizations refine processes, enhance quality, and promote ongoing improvement by systematically addressing issues and making data-driven decisions.

15. Share a pseudo-code to find duplicate characters in the string. Example: INPUT: "**Welcome to Frugal Testing**", OUTPUT: "**eltg**".

Define the input string

```
input_string = "Welcome to Frugal Testing"
```

Initialize an empty string to store duplicate characters

```
duplicate_characters = ""
```

Create an empty dictionary to track character occurrences

```
char_count = {}
```

Iterate through each character in the input string

```
for char in input_string:
```

```
    # Check if the character is not a space
```

```
    if char != ' ':

```

```
# If the character is not in the dictionary, add it with a count of 1
```

```
if char not in char_count:
```

```
    char_count[char] = 1
```

```
else:
```

```
    # If the character is already in the dictionary, increment its count
```

```
    char_count[char] += 1
```

```
    # If the count is 2, it's the first time we've seen this character as a duplicate
```

```
    if char_count[char] == 2:
```

```
        duplicate_characters += char
```

```
# Print the duplicate characters
```

```
print(duplicate_characters)
```

16. Is Automation Testing A Complete Replacement For Manual Software Testing? What is your view on this?

Automation testing and manual testing are not mutually exclusive but serve distinct purposes. Automation excels in repetitive, regression, and performance testing, improving efficiency and accuracy. Manual testing, on the other hand, is essential for exploratory, usability, and early-stage testing, offering human insights and adaptability. The choice between them depends on project specifics, with a balanced approach often yielding the most effective results, ensuring high-quality software with comprehensive test coverage.

17. Give some examples of web applications that are used in day-to-day life? How will you improve their performance, please elaborate?

Web applications integral to daily life, like social media platforms, online shopping sites, email services, video streaming platforms, and ride-sharing apps, can be improved by optimizing data retrieval, implementing efficient caching, employing content delivery networks, optimizing algorithms, reducing third-party scripts, enhancing database queries, and adopting load balancing and code splitting techniques, all of which I can explore and apply through performance testing, code optimization, and continuous monitoring to ensure a seamless and efficient user experience.

18. Please write an article on any ONE of the below topics

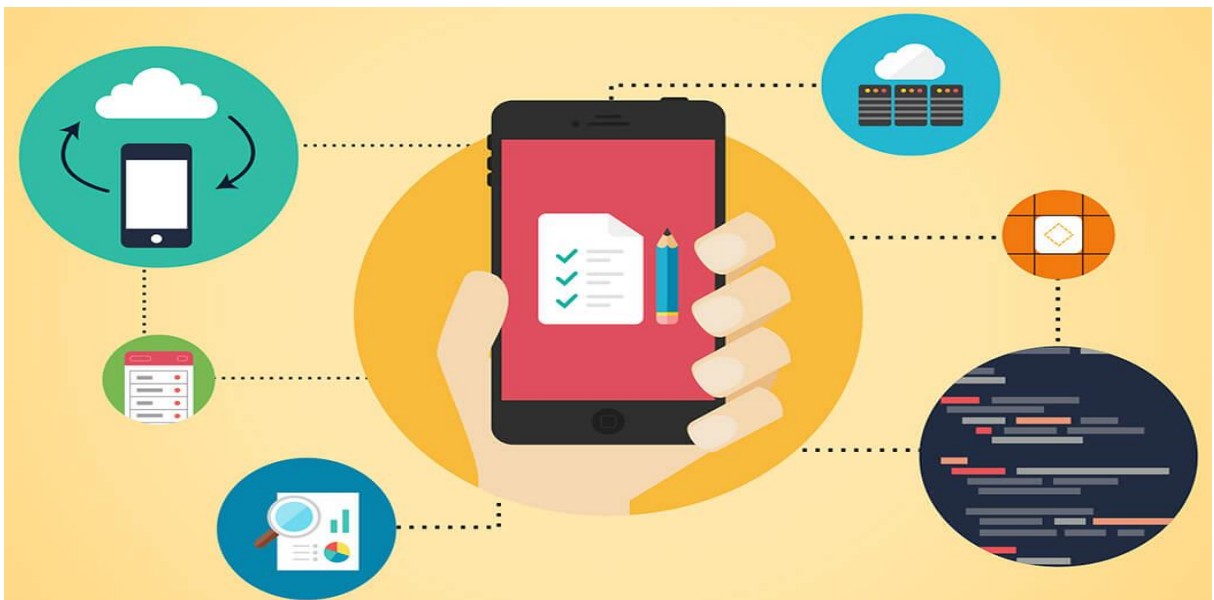
(500-1500 words, no plagiarism, better to use some graphics)

- A. Agile and DevOps
- B. Mobile application testing
- C. Chaos engineering
- D. Top 10 chrome extensions to find Xpath in Selenium
- E. What is load average in top command in Linux?
- F. What is exploratory testing and its pros and cons?
- G. Best performance testing tools to look out for in 2021
- H. Cybersecurity for cloud applications
- I. What is a Zero-day attack?
- J. What, Why, and How of API penetration testing?
- K. What are the 7 steps in software testing life cycle?

Mastering Mobile Application Testing: Ensuring Quality and User Satisfaction

Introduction

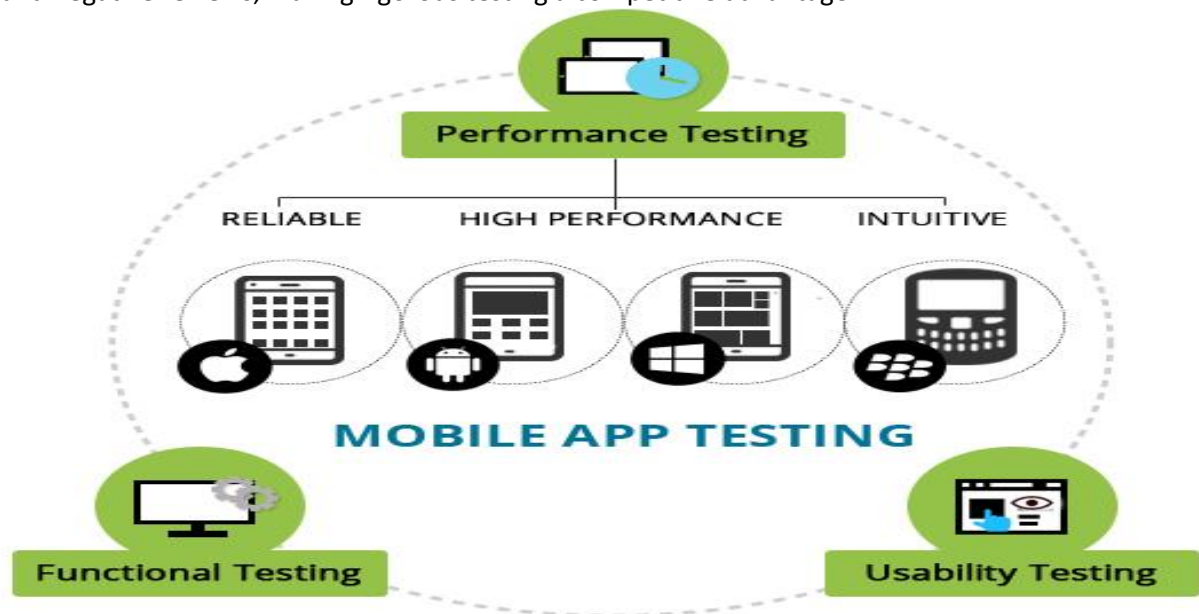
Mobile applications have become an integral part of our daily lives, offering convenience, entertainment, and utility. With millions of apps available on various app stores, competition is fierce, and user expectations are higher than ever. To meet these expectations and ensure a successful app, rigorous mobile application testing is essential. In this article, we'll explore the importance of mobile app testing, common challenges, and best practices to ensure your app not only works but thrives in the competitive app market.



Significance of Mobile Application Testing

Mobile application testing is the process of evaluating the functionality, performance, security, and usability of mobile apps to identify and resolve issues before they reach users. This testing is critical for several reasons:

1. **User Experience:** Users expect a seamless and intuitive experience. Testing helps identify usability issues, ensuring users can navigate and interact with the app effortlessly.
2. **Device Fragmentation:** The Android ecosystem alone spans thousands of device models with varying screen sizes, resolutions, and hardware capabilities. Testing helps ensure compatibility across a wide range of devices.
3. **Performance:** Slow, buggy apps frustrate users and result in high uninstall rates. Performance testing identifies bottlenecks, enabling optimization for a smoother experience.
4. **Security:** Mobile apps often handle sensitive user data. Security testing helps identify vulnerabilities that could lead to data breaches or other security issues.
5. **Competition:** Users have numerous alternatives. A single poor experience can lead to uninstallation and negative reviews, making rigorous testing a competitive advantage.



Challenges in Mobile App Testing

Mobile app testing presents unique challenges compared to traditional software testing:

1. **Device Diversity:** Testing on various devices and OS versions is time-consuming and complex. Tools like emulators and cloud-based testing services help, but real-device testing remains essential.
2. **OS Fragmentation:** Both Android and iOS have multiple versions in use simultaneously. Ensuring compatibility across OS versions is a significant challenge.
3. **User Interface:** Mobile apps have diverse user interfaces, including touch gestures and screen orientations. Testing must cover all scenarios.

4. Performance Testing: Mobile devices have limited resources, so optimizing performance is crucial. However, replicating real-world usage conditions for performance testing can be challenging.

5. Network Conditions: App behavior can vary depending on network quality. Testing under different network conditions is essential to ensure app functionality.

Best Practices in Mobile App Testing

1. Early Testing: Begin testing during the development phase to identify and fix issues early, reducing the cost of bug fixes.

2. Test on Real Devices: While emulators and simulators are useful, testing on real devices is essential for accurate results.

3. Automation: Use mobile automation testing tools like Appium, Calabash, or Espresso to automate repetitive test cases and ensure consistency.

4. Performance Testing: Conduct performance testing under various conditions, including low network connectivity and high load, to ensure optimal app performance.

5. Usability Testing: Involve real users in usability testing to gather valuable feedback on the app's user interface and overall user experience.

6. Security Testing: Regularly perform security testing to identify vulnerabilities and protect user data.

7. Regression Testing: After each code change, conduct regression testing to ensure that new features or bug fixes do not introduce new issues.

8. Beta Testing: Launch a beta version of your app to a limited audience to gather feedback and uncover potential issues.

9. Monitoring: Implement monitoring tools to track app performance and user behavior, helping to identify issues in real-time.

Conclusion

Mobile application testing is a critical component of the app development lifecycle, ensuring that your app meets user expectations and operates flawlessly across diverse devices and conditions. By following best practices, embracing automation, and continuously testing and monitoring your app, you can deliver a high-quality product that stands out in the competitive world of mobile applications. With a user-friendly, performant, and secure app, you'll not only attract users but also retain them, ultimately achieving long-term success in the mobile app market.

19. Share a video recording link of yourself, explaining your specific characteristics that make you believe you are well-suited for this role-----<https://www.youtube.com/watch?v=7YZPZUMCuOk>

20. The following questions have no right or wrong answer. It is a basic measure to judge your personality. Please exhibit integrity while answering the following. You need to choose only one option.

A: You are totally exhausted because your week was endless and less than great. How are you going to spend your weekend? Answer: ii

- i.) I'll call my friends to ask about their plans. I heard that a new restaurant opened / a nice comedy is playing in the cinemas / there are big discounts at the paintball club. We should all go out together.
- ii.) I'll switch on the "Don't disturb" mode on my phone and stay at home. I'll watch a new episode of my favourite TV show, do a puzzle, and take a long bath with a book.

B: Which of these 2 descriptions suits you more? Answer: i

- i.) The most important thing for me is what's happening here and now. I assess real situations and pay attention to details.
- ii.) Facts are boring. I love to dream and play over upcoming events in my mind. I rely more on intuition than information.

C: A competitor of your current employer is trying to entice you. You have doubts because the salary is much higher there, but the staff here is great. Moreover, the head of your department hinted that he will recommend you to the bosses when he retires. How are you going to make a decision? Answer: i

- i.) I'll continue with the same job as long as the manager retires by weighing up all the options.
- ii.) I'll shift to my competitor because the remuneration is higher as compared to the current position.

D: Only 2 weeks are left before your close friends' wedding. How are the preparations going?

Answer: i

- i.) One month ago, I chose the saxophonist who will play a medley of our school songs / collected the couple's photo love story / composed a poem / pressed my suit / made appointments with the stylist and makeup master. I prefer to be fully armed.
- ii.) Why prepare? I'll be having fun and enjoying myself at the party. I'll improvise my wedding speech. The best things happen spontaneously.

DETAILS-

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