**QA World Cup Final Round:**

**Problem type: Designing Test Approach**

**Test Strategy & KPIs for GOOFY**

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**Introduction:**The primary goal of this test strategy is to ensure that Goofy, the Intelligent Virtual Assistant developed by a software company, provides accurate responses, and can complete tasks assigned to it without human intervention. The strategy aims to maintain a seamless user experience for employees while also addressing the challenges posed by Goofy's intermittent issues, incorrect and biased responses. In addition, the strategy takes into account the impact on existing processes, services, and policies such as data privacy and GDPR that Goofy is currently handling. The strategy will also outline the KPIs to measure Goofy's quality and overall performance over time.

**Test Environment:**

The testing environment will consist of a dedicated server, separate from the production environment, to deploy and test Goofy's software updates. The test environment will have access to all necessary systems and resources to simulate real-world scenarios.

**Test Types:**

**Functional Testing:** This type of testing will ensure that Goofy provides accurate responses and is able to complete tasks assigned to it without human intervention.

**Security Testing:** This type of testing will ensure that Goofy provides secure access to confidential information while maintaining data privacy and adhering to GDPR policies.

**Performance Testing:** This type of testing will ensure that Goofy is able to handle a large number of requests and users simultaneously without performance degradation.

**Usability Testing:** This type of testing will ensure that Goofy provides a seamless user experience for employees.

**Regression Testing:** This type of testing will ensure that any changes made to Goofy's software do not adversely affect its existing functionalities.

**AI Training Testing:** This type of testing will ensure that Goofy is trained on actual user responses and can handle sentimental topics, health habits, interests, etc. without any biases.

**Test Approach for Goofy:**

**Functional Testing:**

**1.1 User Acceptance Testing:**

a. Ensure that the requirements are well understood and clearly documented.

b. Ensure that Goofy performs as expected in different modes of communication such as text-to-text, text-to-speech, and speech-to-text.

c. Validate that Goofy is able to answer questions from employees about policies, processes, and other important information.

d. Validate that Goofy is able to perform tasks such as logging service desk requests, time logging, and reminder nudges to complete tasks.

e. Validate that Goofy is able to collect data from employees about their interests, health habits, and happiness index through conversations.

f. Verify that Goofy is able to access confidential information only when authorized.

g. Verify that Goofy's responses are accurate and unbiased.

**1.2 Integration Testing:**

a. Ensure that Goofy is integrated with multiple systems of the company.

b. Verify that Goofy is able to access information from different systems.

c. Verify that data is transferred correctly between systems.

d. Verify that Goofy is able to handle errors and exceptions gracefully.

**1.3 Regression Testing:**

a. Ensure that new features or changes do not affect the existing functionalities of Goofy.

b. Validate that the previous defects are fixed.

c. Ensure that Goofy is compatible with different browsers, devices, and operating systems.

**Non-functional Testing:**

**2.1 Performance Testing:**

a. Verify that Goofy responds quickly to user requests.

b. Test Goofy's ability to handle a large number of simultaneous requests.

c. Test Goofy's ability to handle high traffic volumes.

d. Test the response time and resource utilization of Goofy under various load conditions.

**2.2 Security Testing:**

a. Verify that Goofy has secure access to confidential information.

b. Test Goofy's ability to protect data from unauthorized access.

c. Test the encryption and decryption of sensitive data.

d. Verify that Goofy follows data privacy policies and GDPR guidelines.

**2.3 Usability Testing:**

a. Test the ease of use of Goofy for employees.

b. Test the effectiveness of Goofy in addressing employee concerns.

c. Test the employee's ability to understand and use Goofy's different communication modes.

d. Test the employee's ability to provide feedback to improve Goofy.

**Automation Testing:**

a. Automate the regression test cases using suitable test automation frameworks.

b. Use AI/ML-based tools to generate test cases and to train Goofy on the job.

c. Create automated scripts for load and performance testing.

d. Automate security testing using suitable tools.

**Reporting and Monitoring:**

a. Define and track KPIs to monitor Goofy's quality and overall performance.

b. Regularly monitor Goofy's logs and reports to identify any errors or issues.

c. Set up alerts for critical issues that require immediate attention.

d. Schedule periodic reviews of Goofy's performance with stakeholders to identify areas of improvement.

**KPI’s:**

As the test strategist for the Goofy Intelligent Virtual Assistant, there are several key performance indicators (KPIs) that I would recommend measuring to monitor its quality and overall performance over time. These KPIs should cover different aspects of Goofy's functionality, including accuracy, reliability, user satisfaction, security, and compliance with data privacy regulations.

**Accuracy**: Goofy's ability to provide accurate information and complete tasks correctly is crucial for maintaining user trust and ensuring the integrity of the company's processes. To measure accuracy, we can track the percentage of correct responses provided by Goofy over time, as well as the frequency and severity of any errors or inaccuracies.

**Reliability**: The reliability of Goofy's performance is also important, as users rely on it to complete tasks and access information on a regular basis. To measure reliability, we can track the frequency and duration of any outages or downtime, as well as the number of times Goofy fails to complete a task or respond to a user request.

**User satisfaction**: User satisfaction is a key factor in determining the success of Goofy as an intelligent virtual assistant. To measure user satisfaction, we can collect feedback from users on their overall experience with Goofy, including ease of use, responsiveness, and the quality of the information provided. We can also measure user engagement with Goofy, such as the number of interactions per user and the length of each interaction.

**Security**: As Goofy has access to confidential information, it is essential that it maintains a high level of security to protect this information from unauthorized access or disclosure. To measure security, we can track any security incidents or breaches, as well as the effectiveness of security measures such as authentication, encryption, and access controls.

**Compliance**: As Goofy handles sensitive information, it is important to ensure that it complies with data privacy regulations such as GDPR and CCPA. To measure compliance, we can track any instances of non-compliance, such as unauthorized data access or disclosure, as well as the effectiveness of privacy measures such as data encryption and user consent mechanisms.

In addition to these KPIs, it is also important to continuously monitor Goofy's training data and machine learning algorithms to ensure that it is learning and adapting correctly to user responses and feedback. Regular testing and validation of Goofy's performance in different scenarios and use cases can help identify any issues or areas for improvement, which can then be addressed through updates or enhancements to the system.

Overall, a comprehensive monitoring strategy that includes these KPIs can help ensure the ongoing quality and performance of the Goofy Intelligent Virtual Assistant, while also addressing any challenges or issues that arise over time.