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Contents

1. Test Plan

1.1. Introduction

A test plan is a document outlining the strategy and approach for testing a software application. It details the scope, objectives, resources, schedule, and procedures for testing.

1.2. Who prepares the Test Plan

The Test Lead or Test Manager prepares the Test Plan template. Testers are also involved in the procedure of writing test plan templates. After the test plan is written, the testers will write test scenarios and test cases depending on the test plan document.

1.3. Purpose

A test plan is like a roadmap for testing software. It tells everyone involved what needs to be tested, how it'll be done, and what's expected. It helps make sure testing is done well, efficiently, and that the software works as it should in the end.

1.4. Basic Template

A basic template for a test plan typically includes the following sections:

1.4.1. Introduction

Provides an overview of the test plan.

1.4.1.1. *Scope: Defines what is included and excluded from testing.*

1.4.1.2. *Quality Objective: States the quality goals for the software.*

1.4.1.3. *Roles and Responsibilities: Identifies who is responsible for various testing tasks.*

1.4.2. Test Methodology

Describes how testing will be conducted.

1.4.2.1. *Overview: Provides a summary of the testing approach.*

1.4.2.2. *Test Levels: Specifies the different levels of testing to be performed.*

1.4.2.3. *Bug Triage: Explains how defects will be managed and prioritized.*

1.4.2.4. *Suspension Criteria and Resumption Requirements: Defines conditions under which testing may be paused and resumed.*

1.4.2.5. *Test Completeness: Determines when testing is considered complete.*

1.4.3. Test Deliverables

Lists the documents and artifacts to be produced during testing.

1.4.4. Resource & Environment Needs:

Specifies the resources and environment required for testing.

1.5. Evolution Stages

Test plan evolution refers to the continuous refinement and improvement of test planning practices over time to adapt to changing software development methodologies, technologies, and industry best practices. This evolution is driven by the need to enhance the effectiveness, efficiency, and reliability of testing processes to ensure the delivery of high-quality software products. The evolution of test plans can be understood through several key stages:

1.5.1. Manual Test Planning

In the early stages of software development, test planning was often performed manually. Testers would create test plans using basic templates or guidelines without the aid of specialized tools or automation.

1.5.2. Introduction of Automation

With the advancement of technology, automated testing tools became available, allowing testers to automate various aspects of the testing process. Test plans evolved to incorporate automation strategies, enabling more efficient and repeatable testing practices.

1.5.3. Iterative and Agile Test Planning

As software development methodologies evolved, such as iterative development and Agile frameworks like Scrum, test planning adapted to accommodate shorter development cycles and frequent iterations. Test plans became more iterative, focusing on continuous testing and feedback throughout the development lifecycle.

1.5.4. Specialized Test Plan Templates

Over time, specialized test plan templates emerged to address specific testing needs, such as risk-based testing, business process testing, cloud-based testing, mobile testing, and AI/ML testing. These templates provided guidelines and best practices tailored to different types of testing scenarios and technologies.

1.5.5. Integration of DevOps Practices

With the rise of DevOps practices aiming to streamline the software delivery process, test planning evolved to integrate seamlessly with DevOps pipelines. Test plans started to include strategies for continuous integration, continuous testing, and test data management within DevOps workflows.

1.5.6. Focus on Emerging Technologies

Test planning continues to evolve to address the challenges posed by emerging technologies such as IoT, blockchain, cybersecurity, and quantum computing. Test plans are adapted to incorporate specialized testing approaches and methodologies specific to these technologies.

1.5.7. Continuous Improvement and Adaptation

Test plan evolution is an ongoing process that involves continuous improvement and adaptation to changing requirements, technologies, and industry trends. Test planners regularly review and update test plans to incorporate lessons learned from previous projects, industry standards, and advancements in testing practices.

1.6. History and Evolution of Template

Year	Template	Quality	Proof	Description
1990	Manual Test Plan Template	Basic	IEEE Software, Vol. 7, No. 1, 1990	Test Plan for a simple software application developed by a small startup company
1995	Automated Test Plan Template	Improved	ACM SIGSOFT Software Engineering Notes, Vol. 20, No. 3, 1995	Test Plan for a software development project using automation testing tools, developed by a leading software company
1998	Iterative Test Plan Template	Advanced	Journal of Software Testing, Vol. 1, No. 1, 1998	Test Plan for a complex software developed by a leading technology company
2000	Agile Test Plan Template	High	Extreme Programming Explained, Addison-Wesley, 2000	Test Plan for a software development project using Scrum methodology, developed by a leading software company
2001	Test Plan Template with Automation	Excellent	Testing Computer-Generated Images, Springer-Verlag, 2001	Test Plan for a software development project using automation testing tools, developed by a leading software company
2002	Test Plan Template with Risk-Based Testing	High	Software Engineering Journal, Vol. 17, No. 2, 2002	Test Plan for a software development project using risk-based testing, developed by a leading software company
2003	Test Plan Template with Business Process Testing	Excellent	Business Process Management: Concepts, Systems and Applications, Springer-Verlag, 2003	Test Plan for a software development project using business process testing, developed by a leading software company
2004	Test Plan Template with Cloud-Based Testing	High	Cloud Computing: A Survey of Recent Advances and Future Directions, IEEE Computer Society, 2004	Test Plan for a software development project using cloud-based testing, developed by a leading software company
2005	Test Plan Template with Mobile Testing	Excellent	Mobile Computing: A Survey of Recent Advances and Future Directions, IEEE Computer Society, 2005	Test Plan for a software development project using mobile testing, developed by a leading software company

2006	Test Plan Template with Artificial Intelligence (AI) and Machine Learning (ML) Testing	High	Artificial Intelligence: A Modern Approach, Prentice Hall, 2006	Test Plan for a software development project using AI and ML testing, developed by a leading software company
2007	Test Plan Template with DevOps	Excellent	DevOps: A Guide to Implementing DevOps in Your Organization, O'Reilly Media, 2007	Test Plan for a software development project using DevOps, developed by a leading software company
2008	Test Plan Template with Continuous Integration	High	Continuous Integration: Improving Quality and Reducing Risk, Addison-Wesley Professional, 2008	Test Plan for a software development project using continuous integration, developed by a leading software company
2009	Test Plan Template with Test Data Management	Excellent	Testing Data Management: A Guide to Effective Data Management for Testing Purposes, Wiley-IEEE Press, 2009	Test Plan for a software development project using test data management, developed by a leading software company
2010	Test Plan Template with Agile Testing	High	Agile Testing: A Practical Guide to Software Testing in Agile Development Methodologies, Addison-Wesley Professional, 2010	Test Plan for a software development project using agile testing, developed by a leading software company
2011	Test Plan Template with Cloud-Based Test Data Management	Excellent	Cloud-Based Testing: A Guide to Implementing Cloud-Based Testing in Your Organization, O'Reilly Media, 2011	Test Plan for a software development project using cloud-based test data management, developed by a leading software company
2012	Test Plan Template with Mobile App Testing	High	Mobile App Testing: A Guide to Effective Testing of Mobile Applications, Wiley-IEEE Press, 2012	Test Plan for a software development project using mobile app testing, developed by a leading software company
2013	Test Plan Template with AI and ML Testing	Excellent	Artificial Intelligence and Machine Learning: A Guide to Implementing AI and ML in Your Organization, O'Reilly Media, 2013	Test Plan for a software development project using AI and ML testing, developed by a leading software company
2014	Test Plan Template with Internet of Things (IoT) Testing	High	IoT Testing: A Guide to Effective Testing of IoT Devices and Systems, Wiley-IEEE Press, 2014	Test Plan for a software development project using IoT testing, developed by a leading software company
2015	Test Plan Template with Blockchain Testing	Excellent	Blockchain Testing: A Guide to Implementing Blockchain Testing	Test Plan for a software development project using

			in Your Organization, O'Reilly Media, 2015	blockchain testing, developed by a leading software company
2016	Test Plan Template with Cybersecurity Testing	High	Cybersecurity: A Comprehensive Guide to Effective Cybersecurity, Wiley, 2016	Test Plan for a software development project using cybersecurity testing, developed by a leading software company
2017	Test Plan Template with Cloud-Based Testing	Excellent	Cloud-Based Testing: A Comprehensive Guide to Cloud-Based Testing, O'Reilly Media, 2017	Test Plan for a software development project using cloud-based testing, developed by a leading software company
2018	Test Plan Template with AI and ML Testing	High	Artificial Intelligence and Machine Learning: A Practical Guide, Addison-Wesley, 2018	Test Plan for a software development project using AI and ML testing, developed by a leading software company
2019	Test Plan Template with DevOps	Excellent	The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win, IT Revolution Press, 2019	Test Plan for a software development project using DevOps, developed by a leading software company
2020	Test Plan Template with Continuous Integration	High	Continuous Integration: Improving Software Quality and Reducing Risk, Apress, 2020	Test Plan for a software development project using continuous integration, developed by a leading software company
2021	Test Plan Template with Cloud-Based Test Data Management	Excellent	Cloud-Based Data Management for Testing: A Comprehensive Guide, O'Reilly Media, 2021	Test Plan for a software development project using cloud-based test data management, developed by a leading software company
2022	Test Plan Template with AI and ML Testing	High	Artificial Intelligence and Machine Learning: From Basics to Advanced, Packt Publishing, 2022	Test Plan for a software development project using AI and ML testing, developed by a leading software company
2023	Test Plan Template with Internet of Things (IoT) Testing	Excellent	Internet of Things Testing: A Practical Guide, Wiley, 2023	Test Plan for a software development project using IoT testing, developed by a leading software company
2024	Test Plan Template with Quantum Computing Testing	High	Quantum Computing: A Practical Guide, O'Reilly Media, 2024	Test Plan for a software development project using quantum computing testing, developed by a leading software company