

eoc world geography practice test Study Guide

eoc world geography practice test is an essential resource for students preparing for their End of Course (EOC) exams. As the world becomes increasingly interconnected, understanding global geography is more important than ever. Whether you're a high school student aiming to excel in your assessments or a teacher seeking effective study tools, practicing with reliable and comprehensive tests can significantly boost your confidence and performance. This article provides an in-depth overview of the importance of EOC world geography practice tests, tips for effective preparation, and resources to help you succeed.

Understanding the Importance of EOC World Geography Practice Tests

Why Practice Tests Are Crucial

Practice tests serve multiple purposes in your study journey:

- **Identify Knowledge Gaps:** Practice tests reveal areas where you need further review, allowing targeted studying.
- **Improve Test-Taking Skills:** Repeated attempts help develop time management and question-solving strategies.
- **Build Confidence:** Familiarity with the test format reduces anxiety and enhances performance.
- **Enhance Retention:** Active recall during practice reinforces learning and helps retain information longer.

The Structure of the EOC World Geography Exam

The EOC world geography exam typically assesses students on:

- Physical geography, including landforms, climates, and ecosystems
- Human geography, such as population, culture, and urbanization
- Geographical skills, including map reading, spatial analysis, and data interpretation
- Global issues, like environmental challenges and economic development

Understanding the exam structure allows you to tailor your practice tests accordingly and focus on

the most relevant topics.

Key Topics Covered in EOC World Geography Practice Tests

Physical Geography

This section includes questions on:

- Landforms (mountains, plains, plateaus)
- Climate zones and weather patterns
- Natural resources and their distribution
- Ecological systems and biomes

Human Geography

Focus areas include:

- Population distribution and migration
- Cultural regions and languages
- Urban development and infrastructure
- Political boundaries and geopolitics

Geographical Skills and Map Reading

Practice questions may involve:

- Interpreting various types of maps (political, physical, thematic)
- Understanding latitude and longitude
- Analyzing spatial data and graphs
- Using scale and symbols accurately

Global Challenges and Current Events

Questions on:

- Environmental issues like climate change and deforestation
- Global economic trends

- International conflicts and cooperation
- Technological impacts on geography

Effective Strategies for Using EOC World Geography Practice Tests

Set a Study Schedule

Consistency is key. Dedicate specific times each week to practicing tests, gradually increasing difficulty and duration.

Simulate Test Conditions

Take practice tests under timed, distraction-free environments to mimic actual exam conditions. This helps improve time management and focus.

Review and Analyze Your Results

After each test, thoroughly review incorrect answers to understand mistakes. Use explanations and resources to clarify concepts.

Combine Practice with Active Learning

supplement practice tests with other study methods such as flashcards, group discussions, and interactive maps.

Focus on Weak Areas

Prioritize topics where you perform poorly. Use additional resources like videos, textbooks, or online tutorials to strengthen understanding.

Resources for EOC World Geography Practice Tests

Official State and Educational Websites

Many states and educational institutions provide free practice tests and sample questions, such as:

- [State Department of Education](#)
- Local school district websites

Online Practice Platforms

Several websites offer interactive quizzes and full-length practice exams, including:

- [Khan Academy](#)
- [Quizlet](#)
- [Sheppard Software](#)
- [Kaptest](#)

Mobile Apps and Study Guides

Utilize apps designed for geography practice and review, such as:

- GeoQuiz
- World Geography Quiz App
- Study.com Geography Practice Tests

Printed Practice Tests and Study Books

Traditional resources remain valuable, especially comprehensive study guides that include practice questions and explanations.

Tips for Success in the EOC World Geography Exam

- **Understand Key Concepts:** Don't just memorize facts?aim to understand the underlying principles.
- **Practice Regularly:** Consistency enhances retention and confidence.
- **Use Multiple Resources:** Diversify your study aids to cover all question types and topics.
- **Stay Informed on Current Events:** Connecting geography concepts to current issues can improve comprehension and engagement.
- **Manage Stress:** Take care of your mental health with breaks, exercise, and adequate sleep.

Conclusion

Preparing for the EOC world geography exam requires a strategic approach centered around effective practice. Utilizing comprehensive and well-structured **eoc world geography practice tests** enables students to familiarize themselves with the exam format, identify areas for improvement, and build confidence. Remember to combine practice tests with active learning techniques, stay consistent in your study schedule, and leverage available resources for the best results. Mastery of world geography not only prepares you for your exams but also enriches your understanding of the

world, fostering global awareness and critical thinking skills essential for success in today's interconnected society.

EOC World Geography Practice Test: A Comprehensive Guide to Mastering Global Spatial Knowledge

In the realm of academic assessments, the End-of-Course (EOC) World Geography exam stands as a critical milestone for students aiming to demonstrate their understanding of the world's physical landscapes, human societies, and interconnected systems. As with many standardized tests, preparation is pivotal, and practice tests serve as invaluable tools for students to assess their knowledge, identify gaps, and develop test-taking strategies. This article offers an in-depth review of EOC world geography practice tests, exploring their structure, benefits, and effective strategies for maximizing their utility.

Understanding the EOC World Geography Exam

Before delving into practice tests, it is essential to understand the core components of the EOC World Geography exam. Typically administered at the conclusion of a world geography course, the exam evaluates students' mastery over several key domains:

Content Areas Covered

- Physical Geography: Landforms, climate patterns, natural resources, and ecosystems.
- Human Geography: Population dynamics, cultural patterns, urbanization, and migration.
- Political Geography: Countries, borders, sovereignty, and geopolitical issues.
- Economic Geography: Agriculture, industry, trade, and development.
- Environmental Issues: Sustainability, environmental challenges, and conservation efforts.

The exam often includes multiple-choice questions, map-based questions, and possibly short-answer prompts, designed to assess both factual knowledge and analytical skills.

The Role of Practice Tests in Geography Preparation

Practice tests serve multiple functions for students preparing for the EOC World Geography exam:

1. Familiarization with Exam Format

Understanding the structure of the test—question types, timing, and instructions—reduces anxiety and boosts confidence. Practice tests replicate the actual exam environment, helping students become comfortable with the format.

2. Content Reinforcement

Repeated exposure to questions enhances retention of key concepts, facts, and spatial skills. It also helps students recognize the types of questions that are frequently asked.

3. Identification of Strengths and Weaknesses

Analyzing performance on practice tests allows students to pinpoint specific areas where they excel or need improvement, enabling targeted review.

4. Development of Test-Taking Strategies

Practicing under timed conditions cultivates skills such as time management, question prioritization, and educated guessing, which are crucial during the actual exam.

Features of Effective EOC World Geography Practice Tests

Not all practice tests are created equal. The most effective resources share certain characteristics:

Comprehensive Content Coverage

High-quality practice tests accurately reflect the scope of the actual exam, covering all major topics and question formats.

Realistic Question Difficulty

Questions should mirror the complexity and wording of real exam questions to prepare students for potential challenges.

Detailed Explanations and Feedback

Answers accompanied by explanations help students understand their mistakes and learn correct reasoning.

Variety of Question Types

Including multiple-choice, map-based, and short-answer questions ensures a well-rounded preparation.

Accessible and User-Friendly Format

Digital or paper-based tests should be easy to navigate, with clear instructions and organized layouts.

Components of a Typical EOC World Geography Practice Test

A well-designed practice test generally encompasses the following sections:

Multiple-Choice Questions

These questions assess factual knowledge, understanding of concepts, and ability to analyze scenarios. For example:

- "Which mountain range separates Europe and Asia?"
- "Identify the primary cause of urbanization in developing countries."

Map-Based Questions

Spatial reasoning is crucial in geography. Practice tests often include:

- Identifying countries, capitals, or physical features on maps.
- Interpreting thematic maps such as climate, population density, or resource distribution.

Short-Answer or Constructed Response

Some tests may include prompts requiring students to explain concepts, analyze geographic issues, or interpret data.

Strategies for Maximizing Practice Test Benefits

Effective use of practice tests involves more than just completing them; strategic approaches amplify their benefits.

1. Simulate Exam Conditions

- Set a timer to mimic real-time constraints.
- Complete practice tests in a quiet environment free of distractions.
- Avoid using reference materials unless specified.

2. Review and Analyze Results Thoroughly

- Carefully review all answers, especially incorrect ones.
- Understand why certain choices are correct or incorrect.
- Keep a record of recurring errors to focus review sessions.

3. Focus on Weak Areas

- Use insights from practice tests to identify weak domains.
- Supplement practice with targeted review of concepts and skills.

4. Incorporate Diverse Resources

- Use a variety of practice test sources for breadth.
- Combine online quizzes, flashcards, and interactive map activities.

5. Reinforce Spatial Skills

- Regularly practice map reading and interpretation.
- Memorize key geographic locations, features, and terminology.

Popular Resources for EOC World Geography Practice Tests

Numerous platforms and publishers offer practice tests aligned with the EOC standards:

- Educational Websites: Sites like Khan Academy, IXL, and Study.com provide interactive quizzes and full-length practice exams.
- State Education Departments: Many states publish official practice tests and sample questions.
- Test Prep Books: Publishers like Barron's, Princeton Review, and McGraw-Hill produce comprehensive guides with practice tests.
- Online Forums and Study Groups: Communities like Reddit or school-based forums facilitate discussion of questions and strategies.

The Impact of Regular Practice on Exam Performance

Empirical evidence suggests that consistent practice using well-designed tests correlates strongly

with improved exam scores. Key benefits include:

- Enhanced familiarity with question formats reduces misinterpretation.
- Increased confidence diminishes test anxiety.
- Refined time management skills prevent last-minute rushes.
- Deeper understanding of geographic concepts promotes higher-order thinking skills like analysis and synthesis.

A study of students preparing for standardized geography assessments indicated that those engaging in regular practice sessions scored, on average, 15-20% higher than peers who relied solely on classroom instruction.

Conclusion: Embracing Practice Tests as a Pathway to Success

The journey to excelling in the EOC World Geography exam is multifaceted, but practice tests are among the most effective tools to navigate this process. They serve not only as rehearsal opportunities but also as diagnostic instruments that inform targeted studying. By engaging with high-quality, comprehensive practice tests?simulating actual exam conditions, analyzing results critically, and focusing on weak areas?students can significantly enhance their geographic literacy and test readiness. As the world becomes increasingly interconnected, mastery of geography is more vital than ever, and diligent preparation through practice tests ensures students are equipped to meet this challenge confidently and competently.

Question What are the key topics covered in an EOC World Geography practice test? Key topics include physical geography (landforms, climate), human geography (population, culture), geographic skills (maps, spatial analysis), and environmental issues affecting different regions worldwide. **Answer** How can practicing with an EOC World Geography test improve my exam score? Practicing with these tests helps familiarize you with the question formats, enhances your understanding of core concepts, improves time management skills, and identifies areas needing further review. What strategies are effective when taking an EOC World Geography practice test? Effective strategies include reading questions carefully, eliminating obviously incorrect answers, managing your time wisely, and reviewing your answers if time permits to catch mistakes. Are there online resources available for EOC World Geography practice tests? Yes, many websites and educational platforms offer free or paid practice tests, including official state education resources, quiz apps, and geography-focused practice sites. How can I use practice tests to prepare for the actual EOC World Geography exam? Use practice tests regularly to assess your knowledge, simulate exam conditions, review your mistakes to understand errors, and adjust your study plan accordingly for improved performance.

Related keywords: EOC geography practice, world geography exam prep, geography test

questions, high school geography review, geography skills assessment, world regions quiz, geographic concepts practice, social studies test prep, geography multiple choice, EOC study guide

MICROSOFT TEST MANAGER TUTORIAL

Microsoft Test Manager Tutorial: A Comprehensive Guide to Efficient Test Management

In the world of software development, ensuring the quality and reliability of your applications is paramount. Microsoft Test Manager (MTM) is a powerful tool designed to streamline the testing process, enabling teams to plan, execute, and track testing efforts with ease. Whether you're a beginner or looking to enhance your testing workflows, this **Microsoft Test Manager tutorial** will provide you with a step-by-step guide to harnessing MTM's full potential for your projects.

Understanding Microsoft Test Manager

Before diving into the tutorial, it's essential to grasp what Microsoft Test Manager is and how it integrates into the broader Visual Studio ecosystem.

What is Microsoft Test Manager?

Microsoft Test Manager is a test management tool integrated with Visual Studio Team Services (VSTS) and Azure DevOps. It provides an intuitive interface for managing test plans, creating and executing test cases, and tracking testing progress. MTM supports both manual and exploratory testing, making it versatile for various testing scenarios.

Key Features of Microsoft Test Manager

- Test Planning: Create and organize test plans, test suites, and test cases.
- Test Execution: Execute manual tests and record results efficiently.
- Test Tracking: Monitor testing progress and generate detailed reports.
- Exploratory Testing: Conduct ad-hoc testing sessions with session-based testing capabilities.
- Integration: Seamlessly connects with Azure DevOps for continuous testing workflows.

Setting Up Microsoft Test Manager

Getting started with MTM involves installing and configuring the tool for your environment.

Prerequisites

- Visual Studio Enterprise or Professional edition (with test management features).
- Azure DevOps account or TFS (Team Foundation Server) setup.
- Appropriate permissions to access test management features.

Installing Microsoft Test Manager

- Download the Visual Studio Installer from the official Microsoft website.
- Choose the edition that includes testing tools (e.g., Visual Studio Enterprise).
- During installation, select the "Testing Tools" workload to install MTM.
- Complete the installation and launch Visual Studio.
- Connect to your Azure DevOps project or TFS server within Visual Studio.

Creating and Managing Test Plans

A well-structured test plan is the foundation of successful testing. MTM simplifies organizing your testing efforts through test plans and suites.

Creating a Test Plan

- Open Microsoft Test Manager from Visual Studio or the Azure DevOps portal.
- Navigate to the "Test Plans" section.
- Click "New Test Plan" and provide a descriptive name, description, and start/end dates.
- Associate the test plan with a specific build or release if needed.
- Save the test plan to begin adding test cases.

Organizing Test Suites

Test suites help categorize test cases based on features, modules, or testing strategies.

- **Static Test Suites:** Manually organize test cases into logical groups.
- **Requirement-Based Test Suites:** Link test cases to specific requirements or user stories.
- **Query-Based Test Suites:** Dynamically generate test cases based on queries.

Adding Test Cases

- Within your test suite, click "New Test Case" or import existing cases.
- Define the test case steps, expected results, and associated requirements.
- Assign priority, owner, and other metadata to facilitate management.
- Save the test case to include it in your suite.

Executing Tests with Microsoft Test Manager

Once your test cases are organized, the next step is executing tests and recording results.

Manual Test Execution

- Open the test plan and select the test suite to execute.
- Click "Run" on the test case you wish to execute.
- Follow the test steps as documented, marking each step as "Passed" or "Failed."
- If a test fails, record detailed bug information directly from the test runner.
- Complete the test run, and the results will be saved automatically.

Using Action Recording and Data Collection

MTM allows capturing detailed logs and screenshots during test execution, aiding in defect analysis and reproducibility.

Exploratory Testing

For ad-hoc testing, MTM offers session-based testing:

- Schedule a testing session with session details.
- Conduct testing while documenting observations and findings.
- Record bugs and issues discovered during the session.

Tracking and Reporting Testing Progress

Effective test management requires insight into testing status and quality metrics.

Monitoring Test Results

- Navigate to the "Test Results" section in MTM or Azure DevOps.
- Review individual test case outcomes and overall progress.

- Filter results by tester, status, or test plan for detailed analysis.

Generating Reports

MTM provides various built-in reports to visualize testing status:

- Test Results Summary
- Test Case Progress and Trends
- Bugs and Defects Reports

Integrating with Bug Tracking

During testing, bugs can be logged directly from MTM, linked to specific failed test cases, ensuring traceability and quick resolution.

Advanced Tips and Best Practices

Maximize your testing efficiency with these expert tips:

Automate Repetitive Tests

Integrate MTM with automated testing frameworks like MSTest, NUnit, or Selenium to run automated tests alongside manual efforts.

Maintain Test Cases Regularly

Keep your test cases updated with application changes to ensure relevance and accuracy.

Use Tags and Filters

Leverage tags and filters to quickly locate and execute specific test cases based on criteria like priority, feature, or owner.

Collaborate Effectively

Encourage team collaboration by sharing test plans and results, and conducting regular review meetings to discuss testing progress.

Conclusion

Microsoft Test Manager is an essential tool for teams aiming to implement structured and efficient testing workflows. From creating comprehensive test plans and organizing test suites to executing tests and tracking outcomes, MTM provides a centralized platform that enhances test visibility and quality assurance. By following this **Microsoft Test Manager tutorial**, you can streamline your testing process, improve defect detection, and deliver higher-quality software products. Remember to stay updated with the latest features and best practices to maximize your testing success with MTM.

Microsoft Test Manager tutorial: A Comprehensive Guide to Streamlining Your Testing Process

Microsoft Test Manager (MTM) is a powerful tool integrated within the Azure DevOps suite, designed to facilitate efficient test planning, management, and execution. Whether you are a QA professional, a developer, or a project manager, mastering MTM can significantly enhance your testing workflows, improve defect detection rates, and ensure higher quality software releases. This tutorial aims to provide an in-depth overview of Microsoft Test Manager, guiding you through its features, setup, best practices, and real-world applications.

Introduction to Microsoft Test Manager

Microsoft Test Manager is a dedicated testing management environment that helps teams plan, execute, and track testing activities seamlessly. Originally part of Visual Studio Test Professional, MTM is now integrated within Azure DevOps, offering a unified platform for Agile testing, exploratory testing, and manual test case management.

Key Features of Microsoft Test Manager

- Test Planning: Create and organize test plans, test suites, and test cases.
- Test Execution: Run manual tests, record results, and capture screenshots.
- Test Management: Track defects, manage test configurations, and generate reports.
- Integration: Seamlessly connect with Azure DevOps for continuous integration and automated testing workflows.
- Exploratory Testing: Record exploratory sessions with detailed notes and recordings.

Setting Up Microsoft Test Manager

Before diving into testing, proper setup of MTM is essential.

Prerequisites

- A valid Azure DevOps account with appropriate permissions.
- Installed Visual Studio Test Professional or access via Azure DevOps.
- Access to a test environment or lab machines.

Installation and Configuration

- Download and Install: Download Microsoft Test Manager from the Visual Studio downloads page or via Azure DevOps.
- Connect to Azure DevOps: Launch MTM and connect it to your Azure DevOps project by signing in with your credentials.
- Configure Test Environments: Set up test machines, configurations, and network environments to align with your testing needs.

Tips for Effective Setup

- Organize your test plans hierarchically for easier management.
- Maintain a clear mapping between test environments and real-world configurations.
- Regularly update test artifacts to ensure they reflect current application versions.

Creating and Managing Test Plans

Test planning is the foundation of effective testing.

Creating a Test Plan

- In MTM, navigate to the "Test Plans" section.
- Click "New Test Plan" and provide a descriptive name, start/end dates, and any relevant details.
- Assign ownership and stakeholders.

Organizing Test Suites

- Static Test Suites: Manually added test cases grouped logically.
- Requirement-based Suites: Linked to user stories or requirements for traceability.
- Query-based Suites: Dynamic grouping based on queries.

Best Practices

- Break down large test plans into smaller, manageable suites.
- Link test cases to user stories or bugs for better traceability.
- Regularly review and update test plans to reflect current project scope.

Designing and Managing Test Cases

Creating effective test cases is critical to uncovering defects early.

Writing Test Cases

- Clear, concise steps with expected results.
- Use descriptive titles and tags for easy filtering.
- Include preconditions and postconditions.

Reusing Test Cases

- Modularize test steps for reuse across different test cases.
- Attach relevant documentation, screenshots, or scripts.

Organizing Test Cases

- Group related test cases into shared test suites.
- Use labels and tags for categorization.

Tips for Effective Test Cases

- Prioritize test cases based on risk and impact.
- Keep test cases up-to-date with application changes.
- Incorporate exploratory testing notes within test cases or as separate sessions.

Test Execution and Result Recording

Executing tests efficiently and accurately recording results is vital.

Running Manual Tests

- Select a test case from your test suite.
- Follow each step, observing the actual behavior.
- Record outcomes: Passed, Failed, Blocked, or Not Applicable.
- Capture screenshots or record videos if needed.

Recording Defects

- Link defects directly to failed test cases.
- Provide detailed descriptions, steps to reproduce, and severity.
- Attach logs or screenshots to aid debugging.

Managing Test Runs

- Use test configurations to run multiple test cases under different environments.
- Schedule and assign test runs to team members.
- Monitor real-time progress and results.

Pros and Cons of Test Execution Features

Pros:

- Streamlined process for manual testing.
- Rich media capture for detailed documentation.
- Easy defect linkage and traceability.

Cons:

- Manual process can be time-consuming for large test suites.
- Limited automation capabilities within MTM itself.

Integrating Automated Testing with Microsoft Test Manager

While MTM excels at manual testing, integration with automated testing frameworks enhances overall efficiency.

Integration with Visual Studio Test Automation

- Use Visual Studio Test tools to develop automated test scripts.
- Link automated tests to test cases in MTM.
- Run automated tests as part of continuous integration pipelines.

Benefits of Integration

- Reduces manual effort.
- Ensures consistency between manual and automated testing.
- Facilitates comprehensive test coverage.

Limitations

- Setup can be complex for beginners.
- Requires scripting knowledge for automation.

Reporting and Tracking

Effective reporting provides insights into testing progress and quality metrics.

Built-in Reports

- Test Run Summary
- Test Results Trend
- Defect Status and Age
- Requirements Traceability Matrix

Custom Reports

- Use Azure DevOps Analytics or Power BI for tailored dashboards.
- Export data for external analysis.

Best Practices

- Regularly review reports to identify bottlenecks.
- Use metrics to prioritize testing efforts.
- Maintain up-to-date dashboards for stakeholder visibility.

Best Practices for Using Microsoft Test Manager

- Plan Early: Incorporate testing early in the development lifecycle.
- Maintain Test Artifacts: Keep test cases and plans updated with application changes.
- Leverage Linkages: Connect requirements, test cases, defects, and build versions.
- Automate Where Possible: Use automation to handle repetitive and regression testing.
- Collaborate: Engage team members through shared test plans and results.
- Review Regularly: Conduct test reviews and retrospectives for continuous improvement.

Common Challenges and How to Overcome Them

Challenge: Managing Large Test Suites

Solution: Break down into smaller, manageable suites; use query-based suites for dynamic grouping.

Challenge: Keeping Test Cases Up-to-date

Solution: Establish a review cycle aligned with development sprints; assign ownership.

Challenge: Integration Complexity

Solution: Invest in automation and continuous integration pipelines; use documentation and training.

Challenge: Limited Automation within MTM

Solution: Use external automation tools integrated with Azure DevOps, such as Selenium or Coded UI.

Conclusion

Microsoft Test Manager is a robust tool that, when used effectively, can significantly boost your testing efficiency, coverage, and traceability. Its comprehensive features for test planning, execution, defect management, and reporting make it indispensable for teams adopting Agile and DevOps practices. While there are challenges, especially around automation and managing large test repositories, with proper setup, training, and best practices, MTM can become a cornerstone of your software quality assurance process.

By following this tutorial, you should now have a clear understanding of how to leverage Microsoft Test Manager to streamline your testing operations, improve collaboration, and ultimately deliver

higher quality software to your users. Remember, continuous learning and adaptation are key to maximizing the benefits of MTM in your projects.

QuestionAnswer What are the main features of Microsoft Test Manager (MTM)? Microsoft Test Manager (MTM) provides features such as test planning, manual test execution, test case management, bug tracking integration, and collaboration tools to streamline the testing process within Visual Studio and Azure DevOps. How do I create and organize test plans in Microsoft Test Manager? In MTM, you can create test plans by navigating to the 'Test Plans' hub, clicking 'New Test Plan,' and defining its name and details. You can then add test suites and test cases to organize tests based on requirements, features, or test types for better management. Can I automate tests using Microsoft Test Manager, and how is it integrated with other tools? While MTM primarily supports manual testing, it integrates seamlessly with Visual Studio and Azure DevOps, enabling automation through test scripts and frameworks like MSTest, Selenium, or CodedUI. Automated tests can be linked to test cases for comprehensive test management. What are the best practices for using Microsoft Test Manager effectively? Best practices include maintaining detailed and reusable test cases, organizing tests into logical suites, utilizing shared steps for common actions, integrating with bug tracking, and regularly updating test plans based on project changes to ensure thorough testing coverage. Is Microsoft Test Manager suitable for Agile development environments? Yes, MTM is well-suited for Agile teams as it supports iterative testing, easy integration with Azure DevOps Agile tools, and flexible test planning, allowing teams to adapt testing activities to sprint cycles and continuous delivery workflows.

Related keywords: Microsoft Test Manager, TFS testing, test planning, test case management, automated testing, test execution, bug tracking, test lab management, test reporting, test automation tools

Read the full article online: [microsoft test manager tutorial](#)