

American Odyssey Chapter And Unit Tests

American Odyssey Chapter And Unit Tests Charting the Course American Odyssey Chapter and Unit Tests The journey of software development is often compared to a voyage and like any good voyage a strong foundation is paramount This foundation is laid through meticulous planning robust architecture and rigorous testing In the realm of educational software the American Odyssey project exemplifies this approach This article will delve into the crucial role of chapter and unit tests in ensuring the quality and functionality of American Odyssey exploring the design considerations implementation strategies and benefits derived from these tests Setting Sail The Need for Testing American Odyssey a comprehensive learning platform is designed to immerse students in the rich tapestry of American history As a complex and multifaceted project it relies heavily on robust testing to ensure its functionality accuracy and user experience Two key types of tests play a crucial role in this process Chapter Tests These tests evaluate the overall functionality of individual chapters within the platform They verify the seamless integration of various components such as text images audiovideo content interactive activities and assessment modules Unit Tests Focusing on individual components unit tests are responsible for verifying the correct behavior of specific functions classes or modules They ensure that individual building blocks operate as intended before being integrated into the larger project Navigating the Tests Design Considerations The design of chapter and unit tests for American Odyssey follows a thoughtful and comprehensive approach taking into account several key factors 1 Scope and Coverage Chapter tests aim for broad coverage evaluating the complete functionality of each chapter They assess the user experience content accuracy and interaction flow ensuring that the learning experience is cohesive and effective Unit tests on the other hand focus on individual components ensuring that each function class or module performs its specific task correctly 2 Data and Scenarios Both types of tests are designed to cover a wide range of data inputs 2 and scenarios This includes testing with different user profiles diverse learning styles and various levels of prior knowledge By simulating realworld situations these tests identify potential issues that might arise during actual usage 3 Automation and Efficiency Automation plays a crucial role in the testing process Chapter tests are often automated to ensure consistent and repeatable results Unit tests are also heavily automated allowing for rapid feedback and continuous integration This automation saves time and effort facilitating efficient development and debugging 4 TestDriven Development American Odyssey embraces the concept of testdriven development TDD This methodology dictates that tests are written before the actual code driving the design and development process TDD fosters a rigorous approach to code quality ensuring that each component adheres to specific requirements Implementing the Tests Practical Strategies The implementation of chapter and unit tests for American Odyssey involves several key strategies Chapter Tests Black Box Testing This approach focuses on the external behavior of the system without delving into the internal code Testers interact with the platform as a user would verifying that the desired functionality is achieved ScenarioBased Testing Specific scenarios are designed to test various user actions interactions and learning pathways These scenarios ensure that the platform caters to different learning styles and user preferences Regression Testing With each update or change regression tests are performed to ensure that previous functionality remains intact This prevents unintended consequences and maintains the stability of the platform Unit Tests Isolation and Mock Objects Unit tests aim to isolate the code under test from external dependencies Mock objects are used to simulate the behavior of external components allowing for focused testing of individual units Assertion Framework Libraries such as JUnit or pytest provide assertion frameworks that allow developers to define expected outcomes and verify that the actual results match those expectations Coverage Analysis Tools are used to measure the percentage of code covered by unit tests This analysis helps identify areas where testing needs to be improved 3 The Benefits of Testing A Smooth Sailing The implementation of chapter and unit tests offers significant benefits to the development and deployment of American Odyssey Improved Code Quality Tests serve as a quality assurance mechanism

identifying defects and ensuring that the code functions as intended Reduced Bugs and Errors Thorough testing helps uncover bugs and errors early in the development cycle preventing costly rework and delays Enhanced User Experience By simulating realworld scenarios tests ensure that the platform provides a seamless and intuitive learning experience for users Faster Development Cycles Automated tests provide rapid feedback allowing developers to identify and fix issues quickly accelerating the development process Increased Confidence Rigorous testing instills confidence in the projects quality and stability ensuring that the platform is reliable and robust Conclusion Charting the Future Chapter and unit tests are crucial components in the development of American Odyssey ensuring its quality functionality and user experience By embracing a comprehensive testing approach the project benefits from improved code quality reduced errors and a more robust learning environment The journey of software development is an ongoing process and as American Odyssey continues to evolve testing will remain a vital compass guiding the project towards its goal of empowering students and fostering a deeper understanding of American history

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summary the art of unit testing second edition guides you step by step from writing your first simple tests to developing robust test sets that are maintainable readable and trustworthy you ll master the foundational ideas and quickly move to high value subjects like mocks stubs and isolation including frameworks such as moq fakeiteasy and typemock isolator you ll explore test patterns and organization working with legacy code and even untestable code along the way you ll learn about integration testing and techniques and tools for testing databases and other technologies about this book you know you should be unit testing so why aren t you doing it if you re new to unit testing if you find unit testing tedious or if you re just not getting enough payoff for the effort you put into it keep reading the art of unit testing second edition guides you step by step from writing your first simple unit tests to building complete test sets that are maintainable readable and trustworthy you ll move quickly to more complicated subjects like mocks and stubs while learning to use isolation mocking frameworks like moq fakeiteasy and typemock isolator you ll explore test patterns and organization refactor code applications and learn how to test untestable code along the way you ll learn about integration testing and techniques for testing with databases the examples in the book use c but will benefit anyone using a statically typed language such as java or c purchase of the print book includes a free ebook in pdf kindle and epub formats

from manning publications what s inside create readable maintainable trustworthy tests fakes stubs mock objects and isolation mocking frameworks simple dependency injection techniques refactoring legacy code about the author roy osherove has been coding for over 15 years and he consults and trains teams worldwide on the gentle art of unit testing and test driven development his blog is at artofunittesting.com table of contents part 1 getting started the basics of unit testing a first unit test part 2 core techniques using stubs to break dependencies interaction testing using mock objects isolation mocking frameworks digging deeper into isolation frameworks part 3 the test code test hierarchies and organization the pillars of good unit tests part 4 design and process integrating unit testing into the organization working with legacy code design and testability

software testing is indispensable and is one of the most discussed topics in software development today many companies address this issue by assigning a dedicated software testing phase towards the end of their development cycle however quality cannot be tested into a buggy application early and continuous unit testing has been shown to be crucial for high quality software and low defect rates yet current books on testing ignore the developer s point of view and give little guidance on how to bring the overwhelming amount of testing theory into practice unit testing in java represents a practical introduction to unit testing for software developers it introduces the basic test first approach and then discusses a large number of special issues and problem cases the book instructs developers through each step and motivates them to explore further shows how the discovery and avoidance of software errors is a demanding and creative activity in its own right and can build confidence early in a project demonstrates how automated tests can detect the unwanted effects of small changes in code within the entire system discusses how testing works with persistency concurrency distribution and web applications includes a discussion of testing with c and smalltalk

this book is an indispensable resource greg wright kainos software ltd radically improve your testing practice and software quality with new testing styles good patterns and reliable automation key features a practical and results driven approach to unit testing refine your existing unit tests by implementing modern best practices learn the four pillars of a good unit test safely automate your testing process to save time and money spot which tests need refactoring and which need to be deleted entirely purchase of the print book includes a free ebook in pdf kindle and epub formats from manning publications about the book great testing practices maximize your project quality and delivery speed by identifying bad code early in the development process wrong tests will break your code multiply bugs and increase time and costs you owe it to yourself and your projects to learn how to do excellent unit testing unit testing principles patterns and practices teaches you to design and write tests that target key areas of your code including the domain model in this clearly written guide you learn to develop professional quality tests and test suites and integrate testing throughout the application life cycle as you adopt a testing mindset you ll be amazed at how better tests cause you to write better code what you will learn universal guidelines to assess any unit test testing to identify and avoid anti patterns refactoring tests along with the production code using integration tests to verify the whole system this book is written for for readers who know the basics of unit testing examples are written in c and can easily be applied to any language about the author vladimir khorikov is an author blogger and microsoft mvp he has mentored numerous teams on the ins and outs of unit testing table of contents part 1 the bigger picture 1 the goal of unit testing 2 what is a unit test 3 the anatomy of a unit test part 2 making your tests work for you 4 the four pillars of a good unit test 5 mocks and test fragility 6 styles of unit testing 7 refactoring toward valuable unit tests part 3 integration testing 8 why integration testing 9 mocking best practices 10 testing the database part 4 unit testing anti patterns 11 unit testing anti patterns

mastering moq practical mocking techniques and unit testing patterns for net developers is a hands on professional guide that equips net engineers and testers with the theory and practical skills needed to write robust maintainable unit tests grounded in core testing principles and test driven development the book explains the role of mocking frameworks and demystifies moq s expressive api and design philosophy to help readers isolate

dependencies reason about behavior and confidently drive design through tests through clear real world examples the book walks readers from fundamental test doubles to advanced mocking scenarios configuring strict loose and partial mocks handling asynchronous code and event simulation composing complex object graphs and leveraging linq based setup patterns it also addresses common technical challenges testing static sealed or non virtual members while showing how moq integrates into ci cd pipelines and scales across asp net core applications microservices and distributed systems with practical guidance for xunit mstest and nunit users beyond mechanics mastering moq teaches sustainable testing practices and patterns for building stable suites test organization fixture management reusable setup helpers and anti pattern avoidance performance considerations for large codebases techniques for parallel test execution troubleshooting strategies and extensibility options round out the coverage leaving readers prepared for current enterprise needs and future evolutions in net mocking

this is the only book to explore unit testing as a language independent standalone development methodology it covers the theory and methodology of unit test frameworks offers instruction in unit test development provides useful code examples in both java and c and details the most commonly used frameworks from the xunit family including junit for java cppunit for c and nunit for net it also includes the complete source code for cppunit for c and nunit for net

unit testing is more than just a collection of tools and practices it s a state of mind this bestseller reveals the master s secrets for delivering robust maintainable and trustworthy code thousands of developers have learned to hone their code quality under the tutelage of the art of unit testing this revised third edition updates an international bestseller to reflect modern development tools and practices as well as to cover javascript inside the art of unit testing third edition you will learn how to create readable maintainable and trustworthy tests work with fakes stubs mock objects and isolation frameworks apply simple dependency injection techniques refactor legacy code with confidence test both frontend and backend code effective unit tests streamline your software development process and ensure you deliver consistent high quality code every time with practical examples in javascript and node this hands on guide takes you from your very first unit tests all the way to comprehensive test suites naming standards and refactoring techniques you ll explore test patterns and organization working with legacy code and even untestable code the many tool agnostic examples are presented in javascript and carefully designed so that they apply to code written in any language about the technology the art of unit testing is more than just learning the right collection of tools and practices it s about understanding what makes great tests tick finding the right strategy for each unique situation and knowing what to do when the testing process gets messy this book delivers insights and advice that will transform the way you test your software about the book the art of unit testing third edition shows you how to create readable and maintainable tests it goes well beyond basic test creation into organization wide test strategies troubleshooting working with legacy code and merciless refactoring you ll love the practical examples and familiar scenarios that make testing come alive as you read this third edition has been updated with techniques specific to object oriented functional and modular coding styles the examples use javascript what s inside deciding on test types and strategies test entry exit points refactoring legacy code fakes stubs mock objects and isolation frameworks object oriented functional and modular testing styles about the reader examples use javascript typescript and node js about the author roy oshero is an internationally recognized expert in unit testing and agile software methodology vladimir khorikov is the author of manning s unit testing principles practices and patterns a pluralsight author and a microsoft mvp table of contents part 1 1 the basics of unit testing 2 a first unit test part 2 3 breaking dependencies with stubs 4 interaction testing using mock objects 5 isolation frameworks 6 unit testing asynchronous code part 3 7 trustworthy tests 8 maintainability part 4 9 readability 10 developing a testing strategy 11 integrating unit testing into the organization 12 working with legacy code appendix monkey patching functions and modules

mockito techniques for effective unit testing unlock the full potential of unit testing in java

with mockito techniques for effective unit testing this comprehensive guide offers a deep dive into the essential and advanced capabilities of mockito the industry standard mocking framework providing software engineers and test architects with a practical roadmap for designing robust maintainable and scalable test suites beginning with a thorough exploration of mocking fundamentals the book details mockito s architecture configuration best practices for modern build environments and seamless integration with leading testing frameworks such as junit and testng with emphasis on solid principles and sound test design readers gain a toolkit to efficiently isolate code under test while ensuring high code quality and confidence in every release progressing into sophisticated test scenarios the book addresses the nuances of advanced mock and spy strategies from dynamic mock creation and deep stubbing of complex object graphs to the challenges of mocking static final and private methods it navigates verification modes partial implementation patterns and best practices for argument capturing and bdd workflows special attention is given to the intricacies of testing distributed systems microservices asynchronous code and event driven architectures providing actionable strategies for handling concurrency time based logic and integration points across various layers and paradigms of modern java applications beyond technical prowess mockito techniques for effective unit testing covers the organizational and ecosystem dimensions vital for sustained testing excellence readers will discover expert techniques for structuring large scale test suites refactoring legacy code ensuring compliance and security in test environments and extending mockito for bespoke needs detailed guidance on optimizing performance leveraging code coverage and static analysis tools and integrating with ci cd pipelines empowers teams to deliver resilient well tested software in fast paced evolving environments this book is an invaluable resource for anyone seeking to elevate their test automation strategy and master mockito as a cornerstone of professional java development

in computer programming unit testing is a software testing method by which individual units of source code sets of one or more computer program modules together with associated control data usage procedures and operating procedures are tested to determine whether they are fit for use intuitively one can view a unit as the smallest testable part of an application in procedural programming a unit could be an entire module but it is more commonly an individual function or procedure in object oriented programming a unit is often an entire interface such as a class but could be an individual method unit tests are short code fragments created by programmers or occasionally by white box testers during the development process it forms the basis for component testing ideally each test case is independent from the others substitutes such as method stubs mock objects fakes and test harnesses can be used to assist testing a module in isolation unit tests are typically written and run by software developers to ensure that code meets its design and behaves as intended this updated and expanded second edition of book provides a user friendly introduction to the subject taking a clear structural framework it guides the reader through the subject s core elements a flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts this succinct and enlightening overview is a required reading for all those interested in the subject we hope you find this book useful in shaping your future career business

unit testing allows the automation of the testing process and helps you discover errors contained in more complex pieces of the application it enhances test coverage because attention is given to each unit writing unit tests will help you improve your javascript code before you even start writing it this course will teach you to use unit testing in your javascript applications and covers tools and techniques you ll need to write unit tests for your code you will learn how to test applications using jasmine mocha ava tape and intern by the end of the course you will be able to perform unit testing using javascript to deliver better code resource description page

test driven development the unit testing advantage offers a comprehensive exploration of the principles and practices behind test driven development tdd with a specific focus on the benefits and techniques of unit testing the book serves as a practical guide for software

developers looking to adopt tdd methodologies and harness the power of unit testing to improve code quality and development efficiency at its core the book advocates for a paradigm shift in the software development process advocating for writing tests before writing code it explains the fundamental principles of tdd emphasizing the importance of incremental development and continuous testing throughout the development lifecycle by following the tdd approach developers can ensure that their code meets the desired specifications and remains resilient to changes and refactoring one of the key strengths of test driven development the unit testing advantage lies in its focus on unit testing as a cornerstone of tdd it provides practical insights into writing effective unit tests covering topics such as test case design test coverage and test automation through real world examples and case studies the book demonstrates how unit testing can drive the design of modular maintainable and loosely coupled code moreover the book explores the integration of unit testing into the broader software development workflow highlighting its role in promoting collaboration between developers testers and stakeholders it discusses strategies for incorporating unit testing into continuous integration and deployment pipelines enabling developers to deliver high quality software with confidence and agility overall test driven development the unit testing advantage serves as a valuable resource for developers seeking to elevate their software development practices through tdd and unit testing by embracing tdd principles and harnessing the power of unit testing developers can not only improve the quality of their code but also enhance their productivity and effectiveness in delivering reliable software solutions

whether you are inheriting a test team or starting one up manage software testing is a must have resource that covers all aspects of test management it guides you through the business and organizational issues that you are confronted with on a daily basis explaining what you need to focus on strategically tactically and operationally using a

summary effective unit testing is written to show how to write good tests tests that are concise and to the point expressive useful and maintainable inspired by roy osherove s bestselling the art of unit testing this book focuses on tools and practices specific to the java world it introduces you to emerging techniques like behavior driven development and specification by example and shows you how to add robust practices into your toolkit about testing test the components before you assemble them into a full application and you ll get better software for java developers there s now a decade of experience with well crafted tests that anticipate problems identify known and unknown dependencies in the code and allow you to test components both in isolation and in the context of a full application about this book effective unit testing teaches java developers how to write unit tests that are concise expressive useful and maintainable offering crisp explanations and easy to absorb examples it introduces emerging techniques like behavior driven development and specification by example programmers who are already unit testing will learn the current state of the art those who are new to the game will learn practices that will serve them well for the rest of their career purchase of the print book comes with an offer of a free pdf epub and kindle ebook from manning also available is all code from the book about the author lasse koskela is a coach trainer consultant and programmer he hacks on open source projects helps companies improve their productivity and speaks frequently at conferences around the world lasse is the author of test driven also published by manning what s inside a thorough introduction to unit testing choosing best of breed tools writing tests using dynamic languages efficient test automation table of contents part 1 foundations the promise of good tests in search of good test doubles part 2 catalog readability maintainability trustworthiness part 3 diversions testable design writing tests in other jvm languages speeding up test execution

the art of unit testing is more than just learning the right collection of tools and practices it s about understanding what makes great tests tick finding the right strategy for each unique situation and knowing what to do when the testing process gets messy this book delivers insights and advice that will transform the way you test your software the art of unit testing third edition shows you how to create readable and maintainable tests it goes well beyond basic test creation into organization wide test strategies troubleshooting working with

legacy code and merciless refactoring you'll love the practical examples and familiar scenarios that make testing come alive as you read this third edition has been updated with techniques specific to object oriented functional and modular coding styles the examples use javascript

master high quality software development driven by unit tests about this book design and implement robust system components by means of the de facto unit testing standard in java reduce defect rate and maintenance effort plus simultaneously increase code quality and development pace follow a step by step tutorial imparting the essential techniques based on real world scenarios and code walkthroughs who this book is for no matter what your specific background as a java developer whether you're simply interested in building up a safety net to reduce regressions of your desktop application or in improving your server side reliability based on robust and reusable components unit testing is the way to go this book provides you with a comprehensive but concise entrance advancing your knowledge step wise to a professional level what you will learn organize your test infrastructure and resources reasonably understand and write well structured tests decompose your requirements into small and independently testable units increase your testing efficiency with on the fly generated stand in components and deal with the particularities of exceptional flow employ runners to adjust to specific test demands use rules to increase testing safety and reduce boilerplate use third party supplements to improve the expressiveness of your verification statements in detail junit has matured to become the most important tool when it comes to automated developer tests in java supported by all ide's and build systems it empowers programmers to deliver software features reliably and efficiently however writing good unit tests is a skill that needs to be learned otherwise it's all too easy to end up in gridlocked development due to messed up production and testing code acquiring the best practices for unit testing will help you to prevent such problems and lead your projects to success with respect to quality and costs this book explains junit concepts and best practices applied to the test first approach a foundation for high quality java components delivered in time and budget from the beginning you'll be guided continuously through a practically relevant example and pick up background knowledge and development techniques step by step starting with the basics of tests organization you'll soon comprehend the necessity of well structured tests and delve into the relationship of requirement decomposition and the many faceted world of test double usage in conjunction with third party tools you'll be trained in writing your tests efficiently adapt your test case environment to particular demands and increase the expressiveness of your verification statements finally you'll experience continuous integration as the perfect complement to support short feedback cycles and quality related reports for your whole team the tutorial gives a profound entry point in the essentials of unit testing with junit and prepares you for test related daily work challenges style and approach this is an intelligible tutorial based on an ongoing and non trivial development example profound introductions of concepts and techniques are provided stepwise as the programming challenges evolve this allows you to reproduce and practice the individual skills thoroughly

with the advent of agile methodologies testing is becoming the responsibility of more and more team members in this new book noted testing expert dustin imparts the best of her collected wisdom she presents 50 specific tips for a better testing program these 50 tips are divided into ten sections and presented so as to mirror the chronology of a software project

a practical and easy to follow yet comprehensive guide to learning advanced junit testing each topic is explained and placed in context and for the more inquisitive there are more details of the concepts used this book is for you if you are a developer with some experience in java application development as well as a basic knowledge of junit testing but for those whose skill set is void of any prior experience with junit testing the book also covers basic fundamentals to get you acquainted with the concepts before putting them into practise

this book is a practical guide for new agile practitioners and contains everything a new project manager needs to know to get up to speed with agile practices quickly and sort out the hype and dogma of pseudo agile practices the author lays out the general guidelines for running an agile project with the assumption that the project team may be working in a

traditional environment using the waterfall model or something similar agile development in the real world conveys valuable insights to multiple audiences for new to agile project managers this book provides a distinctive approach that alan cline has used with great success while showing the decision points and perspectives as the agile project moves forward from one step to the next this allows new agile project managers or agile coaches to choose between the benefits of agile and the benefits of other methods for the agile technical team member this book contains templates and sample project artifacts to assist in learning agile techniques and to be used as exemplars for the new practitioner s own project for the project management office pmo the first three chapters focus on portfolio management they explain for the agilists benefit how projects are selected and approved and why projects have an inherent shelf life that results in hard deadlines that may seem arbitrary to traditional technical teams what you will learn how and why the evolution of project management from pm 1 prescriptive to pm 2 adaptive affects modern 21st century project management how sociology stakeholder management psychology team dynamics and anthropology organizational culture affect the way software is developed today and why it is far more effective a clear delineation of what must to be accomplished by all the roles pm ba apm developer and tester why those roles are needed and what they must do step by step guide for a successful project based on studies and the author s own experiences specific techniques for each role on the development team both in the pre iteration and iteration cycles of product development the appendices contain templates that the team could use or modify to tailor their own agile processes specific to the team project and organization

this book explains in detail how to implement unit tests using two very popular open source java technologies junit and mockito it presents a range of techniques necessary to write high quality unit tests e g mocks parametrized tests and matchers it also discusses trade offs related to the choices we have to make when dealing with some real life code issues the book stresses the importance of writing readable and maintainable unit tests and puts a lot of stress on code quality it shows how to achieve testable code and to eliminate common mistakes by following the test driven development approach every topic discussed in the book is illustrated with code examples and each chapter is accompanied by some exercises by reading this book you will grasp the role and purpose of unit tests write high quality readable and maintainable unit tests learn how to use junit and mockito but also other useful tools avoid common pitfalls when writing unit tests recognize bad unit tests and fix them in no time develop code following the test driven development tdd approach use mocks stubs and test spies intelligently measure the quality of your tests using code coverage and mutation testing learn how to improve your tests code so it is an asset and not a burden test collections expected exceptions time dependent methods and much more customize test reports so that they show you what you really need to know master tools and techniques your team members have never even heard of priceless nowadays every developer is expected to write unit tests while simple in theory in practice writing high quality unit tests can turn out to be a real challenge this book will help

fearlessly change the design of your ios code with solid unit tests use xcode s built in test framework xctest and swift to get rapid feedback on all your code including legacy code learn the tricks and techniques of testing all ios code especially view controllers uiviewcontrollers which are critical to ios apps learn to isolate and replace dependencies in legacy code written without tests practice safe refactoring that makes these tests possible and watch all your changes get verified quickly and automatically make even the boldest code changes with complete confidence manual code and ui testing get slower the deeper your navigation hierarchy goes it can take several taps just to reach a particular screen never mind the actual workflow tests automatic unit testing offers such rapid feedback that it can change the rules of development bring testing to ios development even for legacy code use xctest to write unit tests in swift for all your code ios developers typically reserve unit tests for their model classes alone but that approach skips most of the code common to ios apps especially with uiviewcontrollers learn how to unit test these view controllers to expand your unit testing possibilities since good unit tests form the bedrock for safe refactoring you re empowered to make bold changes learn how to avoid the most common mistakes swift programmers make with the xctest framework use code coverage to find holes in your test

suites learn how to identify hard dependencies reshape the design of your code quickly with less risk and less fear

modern software development process calls upon us to unit test software and to do it systematically as part of formal comprehensive software testing this monograph is a critique of unit testing it demonstrates that unit testing especially of object oriented and multithreaded code does not repay the effort unit testing properly done is a great deal of work and much object oriented code is not amenable to unit testing does not repay the effort means mostly that it is not cost effective but it also means that it is not always effective the book analyzes the daunting amount of effort required to do unit testing for credit it presents actual code to further demonstrate the difficulty in fashioning unit tests the same code illustrates how bugs can escape detection even by a sincere and competent effort to reveal them through unit testing

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Introduction

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