Western Governors University (WGU) ITSW2120 D276 Practice Exam (Sample)

Study Guide
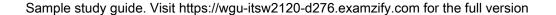

BY EXAMZIFY

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Questions

1. How will the following code be displayed in a browser? <p>Please subscribe to our fun <mark>Monthly Newsletter!</mark></p>

    A. A clickable link for subscription

    B. Text displayed in italics

    C. A table with highlighted text

    D. A paragraph with a clickable link and bold text

2. What programming construct allows for the execution of a block of code multiple times?

    A. If statement

    B. Loop

    C. Function

    D. Variable

3. Which element is crucial for successful service transition?

    A. Service cost analysis

    B. Service validation procedures

    C. Vendor training programs

    D. Employee satisfaction surveys

4. What is a list in Python?

    A. An unordered collection of items

    B. An ordered collection of items

    C. A collection of key-value pairs

    D. A type of function

5. Which CSS function can be used to make an element's size responsive to the viewport height?

    A. calc()

    B. min()

    C. vh()

    D. rem()

6. What is the purpose of comments in programming?

    A. To store data temporarily

    B. To annotate code for clarity

    C. To define data types

    D. To check for syntax errors

7. What does the term 'source code' refer to?

    A. The input data for a program

    B. The human-readable instructions written by a programmer

    C. The output generated by a program

    D. The compilation errors reported during code execution

8. What does a loop require to stop repeating?

    A. A user input

    B. A return statement

    C. A specific condition to be met

    D. A variable to change

9. Which of the following allows multiple classes to share a method in object-oriented programming?

    A. Encapsulation

    B. Abstraction

    C. Polymorphism

    D. Inheritance

10. Which Bootstrap installation option allows for using Bootstrap without bundling it with the website's source code?

    A. NPM

    B. CDN

    C. RubyGems

    D. NuGet

Answers

1. D
2. B
3. B
4. B
5. A
6. B
7. B
8. C
9. C
10. B

Explanations

1. How will the following code be displayed in a browser? <p>Please subscribe to our fun <mark>Monthly Newsletter!</mark></p>

   A. A clickable link for subscription

   B. Text displayed in italics

   C. A table with highlighted text

   D. A paragraph with a clickable link and bold text

The code provided is an HTML snippet that structures a paragraph containing various text elements. The use of the `<p>` tag designates that the content is a paragraph. Inside this paragraph, there are several components that influence how the text is displayed in a browser. The `<a>` tag creates a hyperlink, allowing users to click on the word "subscribe," which will redirect them to "subscribe.php." This means there is an interactive element in the paragraph that users can engage with. The `<strong>` tag indicates that the text within it, "fun Monthly Newsletter!", is emphasized, typically displaying this text in a bold font style, making it stand out within the paragraph. Additionally, the `<mark>` tag is used to highlight the text "Monthly Newsletter!" which often results in this text being rendered with a yellow background or other distinct styling, further emphasizing its importance. Thus, when viewed in a browser, the complete output will be a paragraph of text featuring a clickable link combined with bold formatting and highlighted text, making the correct interpretation of the code as a paragraph with a clickable link and bold text.

2. What programming construct allows for the execution of a block of code multiple times?

   A. If statement

   B. Loop

   C. Function

   D. Variable

The loop is the programming construct that enables the execution of a block of code multiple times. Loops are designed specifically for scenarios where a certain task needs to be repeated based on a condition or for a specified number of iterations. This capability allows developers to write more efficient code by avoiding repetition and reducing redundancy, as the same code can be run repeatedly without having to rewrite it for each occasion. In contrast, an if statement is used to execute a block of code only once, based on whether a specified condition is true or false. Functions can be called multiple times, but they do not inherently provide a mechanism for repeated execution based on a condition—rather, they encapsulate a piece of code that can be invoked whenever needed. Variables are simply containers for storing data values; they do not execute code. Thus, the loop is specialized for scenarios involving repetition, making it the correct answer for this question.

3. Which element is crucial for successful service transition?

    A. Service cost analysis

    B. Service validation procedures

    C. Vendor training programs

    D. Employee satisfaction surveys

Service validation procedures are essential for a successful service transition because they ensure that the services being provided meet the specified requirements and expectations of stakeholders. During a service transition, it is critical to confirm that all components and processes are working correctly and that the service delivers the intended value to the organization and its customers. This involves testing the service in a controlled environment, verifying that it meets design specifications, and ensuring that it performs effectively under load. By conducting service validation, organizations can identify any issues or defects early in the transition process, allowing for corrections before the service goes live. This proactive approach helps to minimize disruptions and enhances overall service quality, leading to a smoother transition and better acceptance of the new or changed service by its users. In contrast, while service cost analysis, vendor training programs, and employee satisfaction surveys are all important components of service management, they do not address the specific need for validation to ensure that a service is ready for deployment. Each of those elements plays a supportive role in the broader context of service management but does not focus directly on the verification and validation process that is critical during service transitions.

4. What is a list in Python?

    A. An unordered collection of items

    B. An ordered collection of items

    C. A collection of key-value pairs

    D. A type of function

A list in Python is defined as an ordered collection of items. This means that when you create a list, the items are stored in a specific sequence and maintain that order. Each item in a list can be accessed using its index, which starts at zero for the first item. The order is significant, allowing for data to be structured in a way that preserves the relationships and positions of items. For example, if you have a list of colors like `['red', 'blue', 'green']`, the position of each color is guaranteed to be consistent whenever the list is referenced. This ordered nature of lists makes them particularly useful for situations where the order of elements matters, such as maintaining a sequence of operations or representing a series of related items. In contrast, unordered collections, such as sets or dictionaries, do not guarantee the order of items, whereas lists explicitly do. Additionally, lists are versatile and can hold various data types, including integers, strings, and even other lists, enhancing their utility in Python programming.

5. Which CSS function can be used to make an element's size responsive to the viewport height?

A. calc()

B. min()

C. vh()

D. rem()

The function that allows an element's size to be responsive to the viewport height is the "vh()" function. This function is designed to work specifically with viewport dimensions, where 1vh represents 1% of the viewport height. As the height of the user's browser window changes, an element styled with a size defined in vh units will adjust to maintain a relative size based on the new height, ensuring that the layout remains flexible and visually appealing across different screen sizes and orientations. Using "calc()" is intended for performing calculations when you need to combine different units or values, but it does not inherently define responsiveness to viewport height. "min()" is used to return the smallest value among its parameters, which may not relate directly to viewport height. "rem()" relates to the root element's font size and is used for font sizing and spacing rather than adapting to viewport dimensions.

6. What is the purpose of comments in programming?

A. To store data temporarily

B. To annotate code for clarity

C. To define data types

D. To check for syntax errors

The purpose of comments in programming is to annotate code for clarity. This means that comments are used to provide explanations, context, or additional information about what specific sections of code are doing. They help other programmers understand the thought process behind the code as well as the functionality, which is especially valuable in collaborative environments or when revisiting code after a period of time. Comments can explain complex logic, outline the purpose of a function, or note any important considerations that a future developer should keep in mind. They are not executed by the compiler or interpreter, allowing developers to include helpful notes without affecting the program's performance or behavior. This practice enhances code readability, making it easier for others (or even the original author at a later date) to understand the intention behind the code, which ultimately contributes to better maintenance and fewer errors in the long run.
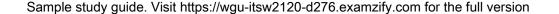
7. What does the term 'source code' refer to?

A. The input data for a program

B. The human-readable instructions written by a programmer

C. The output generated by a program

D. The compilation errors reported during code execution

The term 'source code' specifically refers to the human-readable instructions written by a programmer. This code is typically written in a programming language, such as Python, Java, or C++, and serves as the foundational text that developers create and modify in order to build software applications. Source code is crafted with the intent that it can be read and understood by humans, allowing for debugging, collaboration, and iterative development. When the source code is complete, it can be compiled or interpreted to create executable programs, which are then able to run on computers. Understanding that source code is the raw set of instructions is fundamental in programming, as it differentiates the underlying logic and functionality of software from the output or data it processes. Additionally, source code is distinct from input data, which refers to the data that a program receives to operate, and from output, which is the result produced by executing the program. Compilation errors occur when the code is processed and indicate issues within the source code, but they do not define what source code itself is.

8. What does a loop require to stop repeating?

A. A user input

B. A return statement

C. A specific condition to be met

D. A variable to change

A loop requires a specific condition to be met in order to stop repeating. This condition, often referred to as a loop termination condition, is a fundamental aspect of loop control structures in programming. When the loop is executed, it continues to iterate until this condition evaluates to false.   For example, in a `while` loop, the loop continues as long as the specified condition is true. Once that condition becomes false, the loop terminates, and control is transferred to the next statement following the loop. Similarly, in a `for` loop, the loop runs for a predetermined number of iterations based on the initialization, condition, and increment or decrement expressions. The condition associated with the loop acts as a critical check that determines when the loop should finish executing. While user input, return statements, or variable changes can influence the behavior of a loop, they are not the essential requirement that explicitly defines the stopping criterion of a loop. The specific condition serves as the definitive trigger that dictates whether the loop will continue or stop, thereby making it the correct answer.

9. Which of the following allows multiple classes to share a method in object-oriented programming?

    A. Encapsulation

    B. Abstraction

    C. Polymorphism

    D. Inheritance

The correct answer is related to how multiple classes can utilize a shared method, showcasing a fundamental principle of object-oriented programming. Polymorphism allows methods to be used via interfaces or base classes, thereby enabling different classes to implement those methods in their specific ways. This means that you can have a single method call that can operate on objects of different classes as if they are instances of a common superclass or interface. In this context, polymorphism is particularly evident in method overriding, where a subclass provides a specific implementation of a method that is already defined in its superclass. This promotes code flexibility and reusability, as the same method name can perform different functions depending on the object type that invokes it. The other concepts, while important in object-oriented programming, serve different purposes. Encapsulation focuses on restricting access to certain components and ensuring that objects manage their own state. Abstraction deals with hiding complex implementation details and exposing only the necessary parts through an interface. Inheritance allows one class to inherit properties and methods from another, which can seem related but does not inherently facilitate shared method access across multiple classes in the same way that polymorphism does.

10. Which Bootstrap installation option allows for using Bootstrap without bundling it with the website's source code?

    A. NPM

    B. CDN

    C. RubyGems

    D. NuGet

Using a Content Delivery Network (CDN) to install Bootstrap is a straightforward way to incorporate Bootstrap into a website without bundling the framework with your source code. A CDN hosts the Bootstrap files on a distributed network of servers, allowing you to link to them directly from your website. This approach offers several advantages, such as improved loading times due to caching and reduced load on your own server since the resources are hosted externally. When you use a CDN, you simply add a link to the Bootstrap CSS and JavaScript files in your HTML document. This way, you can utilize Bootstrap's features without the need to download or manage the framework as part of your project's files. Moreover, since CDNs are typically optimized for performance and serve files from locations closer to the user's geographical location, it enhances the overall user experience. Other installation options, such as NPM, RubyGems, or NuGet, involve downloading and managing Bootstrap as part of your project's codebase, which may not be necessary if all you want is to leverage Bootstrap's styling and components efficiently.