

Task: Newsletter Subscription Confirmation Page

Scenario:

1. You are designing a simple newsletter subscription popup flow for a blog website using JavaScript popup boxes.

2. Requirements:

Implement the following behavior on a single HTML page:

3. When the user clicks the "Subscribe" button:

- First, show an alert() saying:
 - "Subscribe to our newsletter to get the latest updates!"
 - Then, show a confirm() asking:
 - "Do you really want to subscribe?"
 - If the user clicks Cancel, show another alert():
 - "Subscription cancelled."
 - If the user clicks OK, show a prompt() asking:
 - "Please enter your email address:"
4. If the user enters a valid email (just check non-empty for now), display a message on the page: "Thank you for subscribing, [email]!"
 5. If they click Cancel or leave it empty, show an alert(): "Email not provided. Subscription failed."

Code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Newsletter Subscription</title>
  <style>
    body {
      font-family: 'Segoe UI', sans-serif;
      background: linear-gradient(to bottom right, #f3f3f3, #e0f7fa);
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
      margin: 0;
    }

    .container {
      background-color: white;
      padding: 30px 40px;
      border-radius: 10px;
      box-shadow: 0 4px 12px rgba(0,0,0,0.1);
      text-align: center;
    }

    h1 {
      color: #00796b;
    }

    p {
      font-size: 16px;
      margin-bottom: 25px;
      color: #444;
    }

    button {
      padding: 12px 25px;
      background-color: #00796b;
      color: white;
      border: none;
      border-radius: 5px;
      font-size: 16px;
      cursor: pointer;
      transition: background-color 0.3s;
    }

    button:hover {
      background-color: #004d40;
    }

    #message {
```

```
margin-top: 20px;
font-size: 18px;
font-weight: bold;
color: #2e7d32;
}
</style>
</head>
<body>

<div class="container">
  <h1>✉️ Subscribe to Our Newsletter</h1>
  <p>Stay updated with our latest articles, tutorials, and resources.</p>
  <button onclick="subscribe()">Subscribe</button>
  <div id="message"></div>
</div>

<script>
  function subscribe() {
    alert("Subscribe to our newsletter to get the latest updates!");

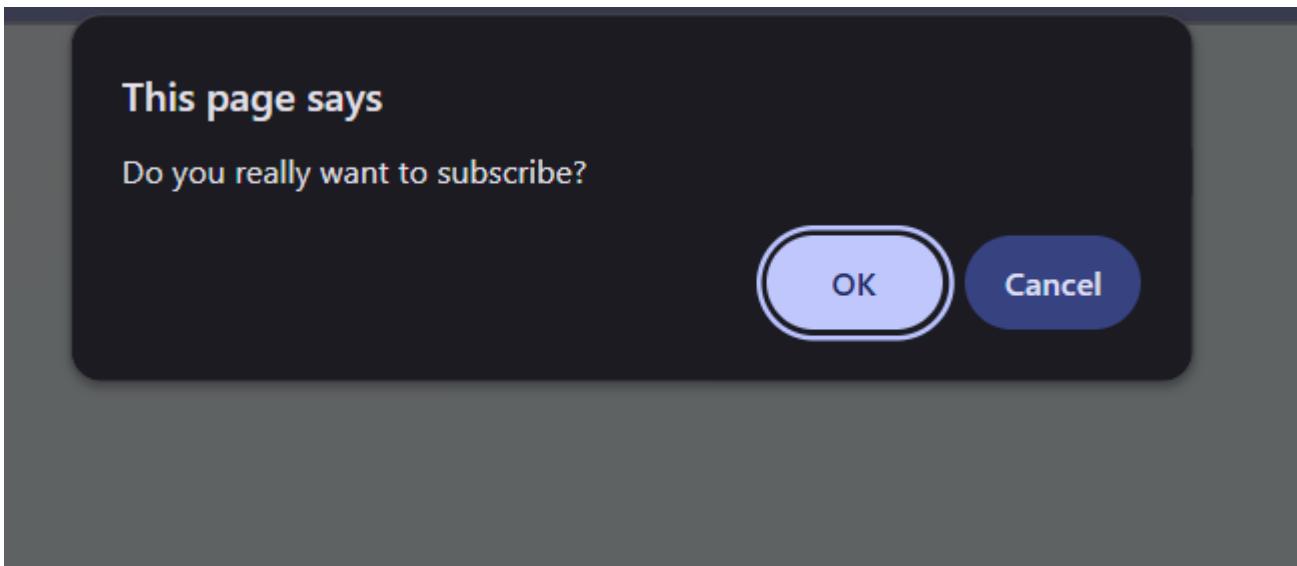
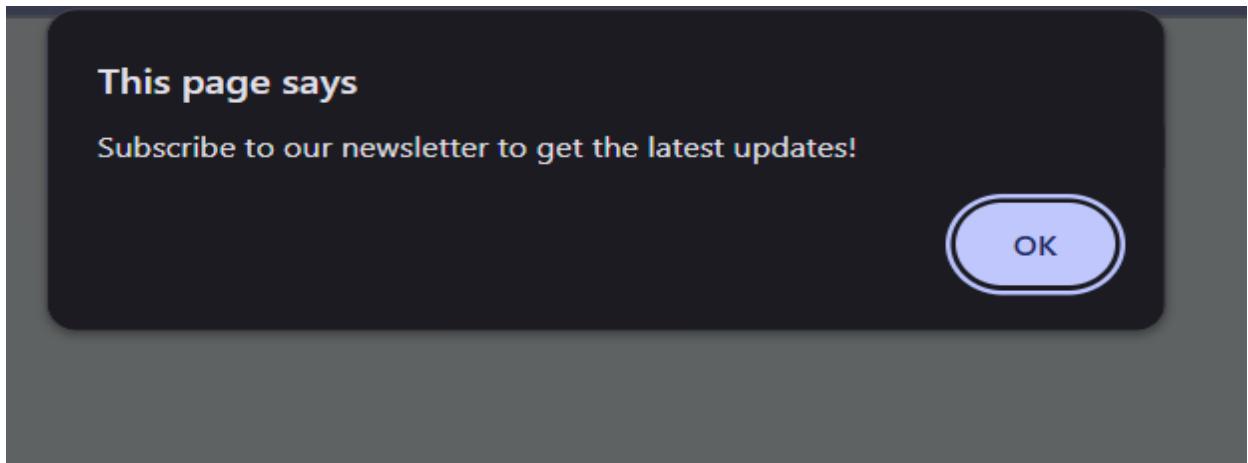
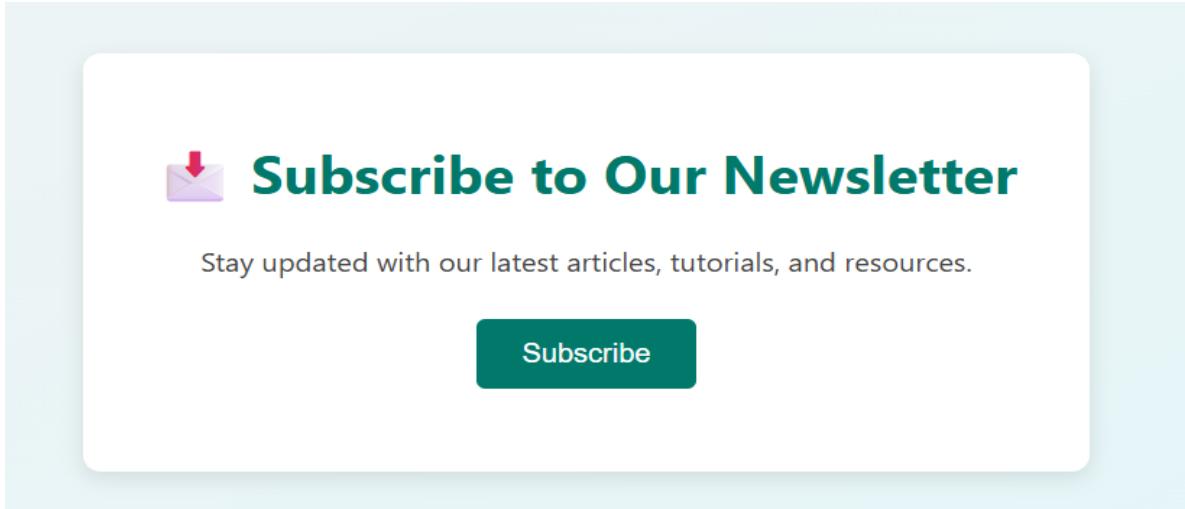
    let confirmSubscribe = confirm("Do you really want to subscribe?");
    if (!confirmSubscribe) {
      alert("Subscription cancelled.");
      return;
    }

    let email = prompt("Please enter your email address:");

    if (email && email.trim() !== "") {
      document.getElementById("message").textContent =
        "Thank you for subscribing, " + email + "!";
    } else {
      alert("Email not provided. Subscription failed.");
    }
  }
</script>

</body>
</html>
```

Output



This page says

Please enter your email address:

abc@gmail.com

OK

Cancel



Subscribe to Our Newsletter

Stay updated with our latest articles, tutorials, and resources.

Subscribe

Thank you for subscribing, abc@gmail.com!

1.7.25 Practice Question

Q1. Click Event - Change Text

Create a button and a paragraph element. Write JavaScript code so that when the button is clicked, the paragraph text changes to "Hello, JavaScript!".

Q2. Mouseover Event - Change Color

Design a square <div> element with a red background. When the user hovers the mouse over the div, change its background color to blue using an event handler.

Q3. Keypress Counter

Create an input box and display how many keypresses the user has made inside it. Update the count in real-time below the input box.

Q4. Add List Item on Button Click

Create a form with an input field and a button. When the button is clicked, take the text from the input and add it as a new list item to an unordered list below.

Q5. Toggle Paragraph Visibility

Create a paragraph and a button. When the button is clicked, the paragraph should toggle between being visible and hidden.

Code:

```
<!DOCTYPE html>

<html>
<head>
  <title>JavaScript Events Demo</title>
  <style>
    body {
      font-family: 'Segoe UI', sans-serif;
      background: linear-gradient(to bottom right, #e0f7fa, #ffffff);
      margin: 0;
      padding: 40px;
    }
    h1 {
```

```
    text-align: center;  
    color: #00796b;  
    margin-bottom: 40px;  
}
```

```
.card {  
    background-color: #ffffff;  
    border-radius: 12px;  
    padding: 25px;  
    margin: 20px auto;  
    max-width: 600px;  
    box-shadow: 0 4px 15px rgba(0,0,0,0.1);  
}
```

```
h2 {  
    color: #00695c;  
    margin-bottom: 10px;  
}
```

```
#colorBox {  
    width: 100px;  
    height: 100px;  
    background-color: red;  
    border: 2px solid #aaa;  
    border-radius: 6px;  
    transition: background-color 0.3s;  
    margin-top: 10px;  
}
```

```
input, button {  
    padding: 10px;  
    margin-top: 10px;
```

```
    font-size: 16px;  
    border: 1px solid #ccc;  
    border-radius: 6px;  
}  
  
button {  
    background-color: #009688;  
    color: white;  
    border: none;  
    cursor: pointer;  
    transition: background-color 0.3s;  
}  
  
button:hover {  
    background-color: #00796b;  
}  
  
ul {  
    padding-left: 20px;  
    margin-top: 10px;  
}  
  
#keyCount {  
    font-weight: bold;  
    color: #388e3c;  
}  
  
#togglePara {  
    margin-top: 10px;  
    font-size: 17px;  
}  
</style>
```

```
</head>

<body>

<h1>JavaScript Events Demo</h1>

<!-- Click Event -->
<div class="card">
  <h2>Click to Change Text</h2>
  <p id="textPara">Click the button below.</p>
  <button onclick="document.getElementById('textPara').textContent = 'Hello, JavaScript!'">Change Text</button>
</div>

<!-- Mouseover Event -->
<div class="card">
  <h2>Hover to Change Box Color</h2>
  <div id="colorBox"></div>
</div>

<!-- Keypress Counter -->
<div class="card">
  <h2>Live Keypress Counter</h2>
  <input type="text" id="inputBox" placeholder="Start typing..." />
  <p>You've typed <span id="keyCount">0</span> key(s).</p>
</div>

<!-- Add List Item -->
<div class="card">
  <h2>Add Items to List</h2>
  <input type="text" id="itemInput" placeholder="Enter an item" />
  <button onclick="addItem()">Add to List</button>
  <ul id="itemList"></ul>
```

```
</div>

<!-- Toggle Visibility -->
<div class="card">
  <h2>Show / Hide Paragraph</h2>
  <p id="togglePara">This paragraph can be shown or hidden using the button.</p>
  <button onclick="toggleParagraph()">Toggle Paragraph</button>
</div>

<script>
  // Mouseover effect
  const box = document.getElementById("colorBox");
  box.addEventListener("mouseover", () => box.style.backgroundColor = "blue");
  box.addEventListener("mouseout", () => box.style.backgroundColor = "red");

  // Keypress counter
  let count = 0;
  const inputBox = document.getElementById("inputBox");
  const keyCount = document.getElementById("keyCount");
  inputBox.addEventListener("keypress", () => {
    count++;
    keyCount.textContent = count;
  });

  // Add list item
  function addItem() {
    const input = document.getElementById("itemInput");
    const text = input.value.trim();
    if (text !== "") {
      const li = document.createElement("li");
      li.textContent = text;
      document.getElementById("itemList").appendChild(li);
    }
  }
</script>
```

```

        input.value = "";
    }
}

// Toggle paragraph

function toggleParagraph() {
    const para = document.getElementById("togglePara");
    para.style.display = (para.style.display === "none") ? "block" : "none";
}

</script>

</body>
</html>

```

Output

JavaScript Events Demo

Click to Change Text

Click the button below.

Change Text

JavaScript Events Demo

Click to Change Text

Hello, JavaScript!

Change Text

Click Event - Change Text

Hover to Change Box Color

Hover to Change Box Color

Mouseover Event - Change Color

Live Keypress Counter

Start typing...

You've typed **0** key(s).

Live Keypress Counter

012365

You've typed **6** key(s).

Keypress Counter

Add Items to List

Enter an item

Add to List

Add Items to List

Enter an item

Add to List

- ice cream

Add List Item on Button

Show / Hide Paragraph

This paragraph can be shown or hidden using the button.

Toggle Paragraph

Show / Hide Paragraph

Toggle Paragraph

Toggle Paragraph Visibility

02/7/25 MCQ

1. What is the main goal of a greedy algorithm?
 - A. Explore all possibilities
 - B. Divide and merge solutions
 - C. Make the best local choice
 - D. Backtrack when needed

2. In dynamic programming, which concept is essential?
 - A. Recursion without memory
 - B. Memoization
 - C. Local decision making
 - D. Exhaustive search

3. Which algorithm breaks a problem into subproblems and combines solutions?
 - A. Greedy
 - B. Brute Force
 - C. Divide and Conquer
 - D. Hill Climbing

4. Which algorithm checks all possible solutions to find the best?
 - A. Brute Force
 - B. Greedy
 - C. Dynamic Programming
 - D. Backtracking

5. What data structure follows the LIFO principle?
 - A. Queue
 - B. Array
 - C. Stack
 - D. Tree

6. Which of the following is not a linear data structure?
 - A. Stack
 - B. Queue

C. Linked List

D. Tree

7. Which of these supports FIFO order?

A. Stack

B. Queue

C. Graph

D. Heap

8. Which data structure is used for recursion?

A. Queue

B. Tree

C. Stack

D. Graph

9. What is the time complexity of Bubble Sort in the worst case?

A. $O(n \log n)$

B. $O(n)$

C. $O(n^2)$

D. $O(\log n)$

10. Which sorting algorithm is based on divide and conquer?

A. Selection Sort

B. Merge Sort

C. Insertion Sort

D. Bubble Sort

11. Which sorting technique selects the minimum and places it at the beginning?

A. Merge Sort

B. Insertion Sort

C. Selection Sort

D. Quick Sort

12. Which of the following sorting algorithms is not stable?

A. Bubble Sort

B. Insertion Sort

C. Merge Sort

D. Quick Sort

13.Which search algorithm checks every element one by one?

A. Binary Search

B. Linear Search

C. Depth First Search

D. Jump Search

14.Which search algorithm requires a sorted array?

A. Linear Search

B. Binary Search

C. BFS

D. DFS

15.What is the time complexity of Binary Search?

A. $O(n)$

B. $O(n \log n)$

C. $O(\log n)$

D. $O(1)$

16.What kind of tree keeps itself balanced with rotations?

A. Binary Tree

B. AVL Tree

C. Trie

D. B-Tree

17.In a binary tree, each node can have at most:

A. One child

B. Two children

C. Three children

D. Any number of children

18.What is the traversal order of Inorder traversal?

A. Root → Left → Right

B. Left → Right → Root

C. Left → Root → Right

D. Right → Root → Left

19.Which tree traversal visits nodes level by level?

A. Preorder

B. Inorder

C. Postorder

D. Level Order

20.What is the worst-case height of an AVL tree?

A. $O(n)$

B. $O(\log n)$

C. $O(1)$

D. $O(n \log n)$

21.What is the main goal of Agile methodology?

A. Create detailed documentation

B. Deliver working software quickly

C. Avoid customer interaction

D. Use waterfall model

22.Which of the following is not a value of Agile?

A. Working software over documentation

B. Customer collaboration over contract negotiation

C. Following a strict plan

D. Responding to change over following a plan

23.In Agile, how often should teams deliver working software?

A. Yearly

B. Monthly

C. Frequently, from a couple of weeks to a couple of months

D. Only at project end

24.What does SDLC stand for?

A. Software Defined Lifecycle

B. Software Development Life Cycle

- C. System Design Logic Code
- D. Systematic Development Life Cycle

25.Which of these is not a phase of the traditional SDLC?

- A. Requirement Gathering
- B. Design
- C. Sprint Planning
- D. Maintenance

26.Which SDLC model is also known as the linear sequential model?

- A. Spiral
- B. Agile
- C. Waterfall
- D. RAD

27.In Waterfall model, testing is done:

- A. After coding
- B. Before planning
- C. Simultaneously with coding
- D. During requirement gathering

28.The RAD model is best suited for:

- A. Long-term projects
- B. Mission-critical systems
- C. Small and quick projects
- D. Systems requiring high security

29.What is the core unit of work in Scrum?

- A. Epic
- B. Task
- C. User Story
- D. Sprint

30.What is a Sprint in Scrum?

- A. A planning phase
- B. A review meeting

C. A fixed period to deliver working product

D. A list of bugs to fix

31.What is the maximum duration of a Scrum Sprint?

A. 2 months

B. 1 month

C. 6 weeks

D. 3 months

32.Who is responsible for removing impediments in Scrum?

A. Product Owner

B. Scrum Master

C. Team Lead

D. Project Manager

33.Which of the following is not a Scrum role?

A. Product Owner

B. Scrum Master

C. Sprint Coach

D. Development Team

34.What is the outcome of a Sprint?

A. A documented report

B. A product backlog

C. A potentially shippable product increment

D. A codebase without bugs

35.What tool is commonly used for managing tasks in Agile projects?

A. Gantt Chart

B. MS Paint

C. TRELLO

D. Task Manager

36.In Scrum, the Product Backlog is owned by:

A. Scrum Master

B. Development Team

C. Product Owner

D. Stakeholder

37.What meeting helps the team reflect on their process after a Sprint?

- A. Daily Standup
- B. Sprint Planning
- C. Sprint Review
- D. Sprint Retrospective**

38.What is the main purpose of the Daily Scrum?

- A. Review design
- B. Create product backlog
- C. Plan for the next sprint
- D. Share daily updates and identify blockers**

39.Which Scrum artifact provides a list of all features, functions, and fixes?

- A. Sprint Backlog
- B. Product Backlog**
- C. Burn-down Chart
- D. Impediment Log

40.In Agile, working software is the:

- A. Final delivery only
- B. Primary measure of progress**
- C. Last priority
- D. Test report output

41.What does SQL stand for?

- A. Structured Query Language**
- B. Simple Query Language
- C. Secure Query List
- D. Standard Queue Language

42.Which of the following is a NoSQL database?

- A. Oracle**

B. MongoDB

C. MySQL

D. SQL Server

43.What is the purpose of normalization in databases?

A. Increase redundancy

B. Speed up queries

C. Eliminate data redundancy and improve integrity

D. Increase data storage

44.Which normal form removes partial dependencies?

A. 1NF

B. 2NF

C. 3NF

D. BCNF

45.A table is in 1NF if:

A. It has composite keys

B. All entries are atomic

C. It has transitive dependencies

D. Foreign keys are removed

46.Which normal form addresses transitive dependencies?

A. 1NF

B. 2NF

C. 3NF

D. 4NF

47.In SQL Server, which system database stores all login information?

A. model

B. tempdb

C. master

D. msdb

48.Which of the following is used to create a new table?

A. INSERT

B. CREATE

C. SELECT

D. ALTER

49.Which command is used to remove a table permanently?

A. DELETE

B. REMOVE

C. DROP

D. TRUNCATE

50.Which of these is a DML statement?

A. CREATE

B. DROP

C. SELECT

D. ALTER

51.Which command is used to update a value in a table?

A. MODIFY

B. UPDATE

C. INSERT

D. CHANGE

52.To retrieve records where a column starts with "A", which clause is used?

A. WHERE name = 'A'

B. WHERE name LIKE 'A%'

C. WHERE name IN 'A'

D. WHERE name STARTS 'A'

53.What does the DISTINCT keyword do?

A. Removes columns

B. Filters nulls

C. Removes duplicate values

D. Renames columns

54.Which function is used to find the total number of rows?

A. SUM()

B. COUNT()

- C. MAX()
- D. LENGTH()

55.What is the use of the BETWEEN operator?

- A. Check for duplicates
- B. Specify a range
- C. Join tables
- D. Split values

56.Which clause groups rows that have the same values?

- A. ORDER BY
- B. GROUP BY
- C. WHERE
- D. LIMIT

57.Which aggregate function gives the largest value?

- A. COUNT()
- B. MIN()
- C. MAX()
- D. SUM()

58.What kind of JOIN returns only matching rows from both tables?

- A. LEFT JOIN
- B. RIGHT JOIN
- C. INNER JOIN
- D. FULL OUTER JOIN

59.Which type of JOIN includes all rows from both tables?

- A. INNER JOIN
- B. LEFT JOIN
- C. FULL OUTER JOIN
- D. RIGHT JOIN

60.What does a self join do?

- A. Joins two tables
- B. Joins a table with itself

- C. Joins two unrelated tables
- D. Joins with a backup table

61.What is the correct file extension for Python files?

- A. .pyth
- B. .pt
- C. .py
- D. .python

62.Which of the following is a valid variable name in Python?

- A. 2value
- B. value_2
- C. value-2
- D. value 2

63.What is the output of: type(3.5)?

- A. <class 'int'>
- B. <class 'float'>
- C. <class 'str'>
- D. <class 'complex'>

64.Which of these is a keyword in Python?

- A. function
- B. define
- C. def
- D. fun

65.What will print(2 ** 3) output?

- A. 6
- B. 8
- C. 9
- D. 5

66.Which Python operator is used for floor division?

- A. /
- B. //

- C. %
- D. **

67.What does the input() function do in Python?

- A. Outputs text
- B. Reads user input as a number
- C. Reads user input as a string
- D. Terminates program

68.Which loop runs at least once, even if the condition is false?

- A. while
- B. for
- C. do-while (not in Python)
- D. None of these

69.How do you write a single-line comment in Python?

- A. <!-- comment -->
- B. /* comment */
- C. # comment
- D. -- comment

70.Which statement is used to exit a loop prematurely?

- A. continue
- B. stop
- C. exit
- D. break

71.What will the following code print?

python

```
x = [1, 2, 3]
```

```
print(x[1])
```

- A. 1
- B. 2

C. 3

D. Error

72. How do you define a function in Python?

- A. `function myFunc():`
- B. `def myFunc():`
- C. `define myFunc():`
- D. `func myFunc():`

73. Which keyword is used to return a value from a function?

- A. `output`
- B. `yield`
- C. `return`
- D. `end`

74. What is a lambda function?

- A. A recursive function
- B. A named function
- C. An anonymous function
- D. A nested loop

75. What is the correct way to create an object in Python?

- A. `obj = ClassName()`
- B. `obj = new ClassName()`
- C. `ClassName obj = new ClassName()`
- D. `obj(ClassName)`

76. What does the `__init__` method do in Python classes?

- A. Deletes an object
- B. Initializes the object
- C. Calls a method
- D. Creates a loop

77. What type of method is not bound to class or instance?

- A. instance method
- B. static method

- C. class method
- D. magic method

78.What is inheritance in Python?

- A. Repeating a function
- B. Passing variables
- C. Deriving a new class from an existing one
- D. Looping through data

79.Which concept allows same function name with different functionality in different classes?

- A. Abstraction
- B. Inheritance
- C. Encapsulation
- D. Polymorphism

80.What is method overriding?

- A. Writing methods outside the class
- B. Redefining a method in the parent class
- C. Defining two methods with the same name in a class
- D. Changing the name of a method

81.Which function is used to open a file in Python?

- A. read()
- B. write()
- C. open()
- D. file()

82.What is the default mode for the open() function in Python?

- A. 'w'
- B. 'a'
- C. 'r'
- D. 'x'

83.Which mode is used to write to a binary file?

- A. 'wb'
- B. 'rb'

C. 'br'

D. 'bw'

84. How can you read an entire file content in Python?

A. readall()

B. get()

C. read()

D. readline()

85. What keyword is used to handle exceptions in Python?

A. throw

B. catch

C. except

D. fail

86. Which keyword is used to raise an exception manually?

A. throw

B. raise

C. fail

D. exit

87. What is a module in Python?

A. A type of loop

B. A set of related variables

C. A file containing Python code

D. A function with parameters

88. Which keyword is used to import a module?

A. import

B. use

C. load

D. include

89. What does PEP 8 relate to?

A. Database structure

B. Web development

- C. Python code style**
- D. JavaScript optimization**

90.Which command initializes a Git repository?

- A. git create**
- B. git start**
- C. git init**
- D. git open**

91.Which command stages files for a commit in Git?

- A. git stage**
- B. git add**
- C. git commit**
- D. git save**

92.What is a test suite in PyUnit?

- A. A GUI framework**
- B. A collection of test cases**
- C. A type of Python package**
- D. An exception class**

93.Which statement is used to assert equality in PyUnit?

- A. assert.equal()**
- B. assertSame()**
- C. assertEquals()**
- D. assertCheck()**

94.What is the use of fixtures in PyUnit?

- A. Create databases**
- B. Execute only one test**
- C. Set up preconditions for tests**
- D. Handle exceptions**

95.Which one is a valid JavaScript variable name?

- A. var-1**
- B. 1var**

C. `_var`

D. `var@name`

96. How do you define a function in JavaScript?

A. `function myFunc() {}`

B. `def myFunc():`

C. `func myFunc() {}`

D. `function:myFunc {}`

97. Which operator is used for strict equality in JavaScript?

A. `=`

B. `==`

C. `====`

D. `=>`

98. What does `alert()` do in JavaScript?

A. Sends an email

B. Logs to console

C. Displays a popup box

D. Adds a delay

99. Which of the following is *not* a type of cloud model?

A. Public

B. Private

C. Local

D. Hybrid

100. Which AWS service provides virtual servers?

A. S3

B. EC2

C. Lambda

D. CloudFront