

Stock Market Website – Project Report

1. Title Page

Project Title: Stock Market Website **Submitted By:**

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- **Course:** UI/UX Design Fundamentals
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- **Institution:** Christ University
- **Date of Submission:** 26/09/2025

2. Abstract

This project presents an interactive **Stock Market** website developed using HTML, CSS, JavaScript, Bootstrap, and jQuery and external APIs. The objective was to build a responsive, data-driven platform that enables users to explore, track, and analyze stock performance in real time. Key features include searchable stock listings, dynamic filtering by sector and market cap, and detailed stock pages with historical charts, company profiles, and financial metrics. Real-time updates ensure live price tracking, while Bootstrap ensures seamless usability across devices. The final product is a sleek, informative interface suitable for financial enthusiasts, investors, or educational use—emphasizing interactivity, clarity, and scalability.

3. Objectives

- Design a clean, intuitive interface that aligns with modern UI/UX principles for financial data presentation.
- Develop a fully responsive layout using HTML, CSS, Bootstrap, and JavaScript to ensure seamless performance across devices.
- Implement structured HTML5 semantic elements to enhance clarity, accessibility, and SEO.
- Integrate dynamic JavaScript components for real-time data updates and interactive charting.
- Apply CSS and Bootstrap for consistent branding, layout control, and responsive behaviour.

- Ensure accessibility, readability, and performance for users navigating stock data across various viewports.

4. Scope of the Project

- Focused primarily on front-end development with optional integration of APIs for real-time stock data.
- Designed to be fully responsive across desktop, tablet, and mobile viewports using Bootstrap and custom CSS.
- Built using open-source technologies including HTML, CSS, JavaScript, and Bootstrap, with optional use of jQuery.
- All visual assets and chart components are either locally hosted or fetched via API, ensuring performance and modularity.
- No server-side logic or database integration included—project scope is limited to client-side functionality and UI/UX design.

5. Tools & Technologies Used

Tool / Technology	Purpose
HTML5	Markup and content structure
CSS3	Styling, layout, transitions, and effects
JavaScript	Dynamic behavior, interactivity, and API integration
Bootstrap	Responsive grid system and UI components
jQuery	Simplified DOM manipulation and event handling

6. HTML Structure Overview

- Semantic sections used: <header>, <main>, <section>, <footer>, and optionally <nav> for navigation clarity.
- Page organized into Header (navigation bar), Stock Listings, Filter Controls, Stock Details, and Footer.
- Interactive elements like stock cards and detail views are structured using semantic containers and enhanced with Bootstrap components.

- Charts and financial metrics are embedded within `<section>` blocks for modular layout and accessibility.
- Images (e.g., company logos or chart thumbnails) include descriptive alt text and fixed dimensions to ensure layout stability.
- Real-time updates and interactivity are handled via JavaScript, with semantic HTML providing a clean foundation for dynamic content.
- Note: `<aside>` and `<article>` can be added to further segment financial insights or news feeds.

7. CSS Styling Strategy

- **External Stylesheet:** `style.css` organized into modular sections with clear comments for maintainability.
- **Layout:** Bootstrap's grid system combined with Flexbox for responsive alignment of stock cards, filters, and detail sections.
- **Interactivity:** Smooth hover transitions, button animations, and chart highlights using CSS transitions and keyframes.
- **Responsiveness:** Media queries and Bootstrap utilities ensure fluid layout across devices; images styled with `object-fit: cover` for visual consistency.
- **Typography:** Google Fonts imported for clean, professional type; fallback font stack ensures cross-browser consistency.
- **Aesthetics:** Use of soft shadows, rounded corners, high-contrast color schemes, and subtle gradients to enhance readability and visual appeal.

8. Key Features

Feature	Description
Stock Listings	Display a list of stocks with company names ,ticker symbols and current prices
Search and Filter Functionality	Allows users to search and filter stocks by sector, market cap or perfomance

Stock Details Page	Clicking on a stock should show detailed information such as price history, charts, company profile and key financial metrics
Real-Time Updates	Integrate live market data updates to reflect changing stock prices dynamically
Responsive Design	Ensure smooth navigation and viewing on both mobile and desktop devices using Bootstrap

9. Challenges Faced & Solutions

Challenge	Solution
Real-Time Data Integration	Handling live stock updates without performance lag was challenging; resolved using lightweight API calls and asynchronous JavaScript.
Responsive Chart Rendering	Charts distorted on smaller screens; addressed with media queries and container resizing using object-fit and max-width.
Complex Filter Logic	Filtering stocks by multiple criteria caused UI clutter; streamlined with collapsible filter panels and Bootstrap form controls.
Navigation Overlap on Mobile	Navbar elements overlapped content; fixed using Bootstrap's responsive navbar toggler and spacing utilities.

10. Outcome

- Delivered a responsive, interactive front-end that presents real-time stock data in a clean and user-friendly format.
- Successfully implemented modular components including stock listings, filter tools, detail views, and dynamic charts using HTML, CSS, JavaScript, and Bootstrap.
- Strengthened proficiency in responsive design, semantic HTML structure, API integration, and UI/UX principles for financial applications.
- Achieved smooth cross-device performance and accessibility through thoughtful layout, styling, and interactivity.

11. Future Enhancements

- Add user authentication for personalized watchlists and saved preferences

- Integrate advanced charting libraries (e.g., Chart.js or D3.js) for interactive visualizations
- Enable dark mode toggle for improved accessibility and user comfort
- Implement server-side caching for faster data retrieval and reduced API load
- Include financial news feed and sentiment analysis alongside stock data

12. Sample Code

12.1 HTML code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>MarketPulse</title>
  <!-- Bootstrap CSS -->
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.m
in.css" rel="stylesheet">
  <!-- Custom Styles -->
  <link rel="stylesheet" href="style.css">
  <!-- Bootstrap Icons -->
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.11.3/font/bootstrap-icons.min.css">
  <!-- Chart.js -->
  <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
</head>
<body class="bg-light">

  <nav class="navbar navbar-expand-lg navbar-light bg-light shadow-sm
py-2">
    <div class="container-fluid">
      <a class="navbar-brand text-primary fw-bold" href="#">
        <i class="bi bi-graph-up-arrow me-2"></i>MarketPulse
      </a>
```

```

        <div class="d-flex ms-auto align-items-center">
            <input type="text" class="form-control form-control-sm
rounded-pill me-3" placeholder="Search" style="width: 150px;">
            <span class="text-dark me-3 fw-bold">AAPL</span>
            <span class="text-dark me-3">GOOG</span>
            <span class="text-dark me-3">TSLA</span>
            <span class="text-dark me-3">MSFT</span>
            <span class="text-dark me-3">AMZN</span>
        </div>
    </div>
</nav>

<div class="container-fluid mt-4">
    <!-- Main Dashboard Section -->
    <div class="card p-4 rounded-4 shadow-sm mb-4">
        <div class="row g-4">
            <div class="col-lg-8">
                <div class="d-flex justify-content-between align-
items-center mb-3">
                    <span class="text-secondary">Stock Chart</span>
                    <div class="btn-group" role="group">
                        <button type="button" class="btn btn-sm
btn-outline-secondary">1D</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">5D</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">1M</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">6M</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">1Y</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">5Y</button>
                        <button type="button" class="btn btn-sm
btn-outline-secondary">Max</button>
                    </div>
                </div>
                <!-- Chart Canvas -->
                <div class="chart-container text-center">

```

```

        <canvas id="priceChart"></canvas>
    </div>
</div>
<div class="col-lg-4">
    <div class="p-3">
        <div class="d-flex justify-content-between
align-items-center mb-2">
            <h5 class="card-title fw-bold mb-0">Apple
Inc. (AAPL)</h5>
            <button class="btn btn-sm btn-primary
rounded-pill">Select</button>
        </div>
        <h1 class="display-4 fw-bold mb-1">170.34</h1>
        <p class="text-success fw-bold">+1.24
(+0.73%)</p>

        <hr class="my-3">
        <div class="row g-2 text-dark">
            <div class="col-6">
                <small>Open</small>
                <p class="fw-semibold">170.00</p>
            </div>
            <div class="col-6">
                <small>High</small>
                <p class="fw-semibold">171.50</p>
            </div>
            <div class="col-6">
                <small>Low</small>
                <p class="fw-semibold">169.80</p>
            </div>
            <div class="col-6">
                <small>Avg. Vol.</small>
                <p class="fw-semibold">98.5M</p>
            </div>
            <div class="col-6">
                <small>Mkt Cap</small>
                <p class="fw-semibold">2.6T</p>
            </div>
            <div class="col-6">
                <small>P/E Ratio</small>

```

```

                <p class="fw-semibold">28.5</p>
            </div>
        </div>
        <div class="d-grid gap-2 mt-4">
            <button id="watchlistButton" class="btn
btn-success fw-bold">
                <i class="bi bi-check-lg me-
1"></i>Watchlist
            </button>
            <button class="btn btn-primary fw-
bold">Buy</button>
        </div>
    </div>
</div>
</div>
</div>
</div>
</div>
<!-- Market Movers Section -->
<div class="row g-4 mb-4">
    <div class="col-lg-6">
        <div class="card p-4 rounded-4 shadow-sm h-100">
            <h5 class="fw-bold text-success mb-3">Top
Gainers</h5>
            <ul class="list-unstyled mb-0" id="top-gainers">
                <!-- Top Gainers will be injected here -->
            </ul>
        </div>
    </div>
    <div class="col-lg-6">
        <div class="card p-4 rounded-4 shadow-sm h-100">
            <h5 class="fw-bold text-danger mb-3">Top
Losers</h5>
            <ul class="list-unstyled mb-0" id="top-losers">
                <!-- Top Losers will be injected here -->
            </ul>
        </div>
    </div>
</div>
</div>

```



```
<!-- My Watchlist Section -->
<div class="card p-4 rounded-4 shadow-sm mb-4">
  <h5 class="fw-bold mb-3">My Watchlist</h5>
  <div class="row g-3" id="watchlist">
    <!-- Watchlist items will be injected here -->
  </div>
</div>

<!-- Latest News Section -->
<div class="card p-4 rounded-4 shadow-sm">
  <h5 class="fw-bold mb-3">Latest News</h5>
  <div class="row g-3" id="news-feed">
    <!-- News items will be injected here -->
  </div>
</div>
</div>

<!-- jQuery and Bootstrap JS -->
<script src="https://code.jquery.com/jquery-3.7.1.min.js"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></script>
  <!-- Custom JavaScript -->
  <script src="stmark.js"></script>
</body>
</html>
```

```
        <a href="#popup4"></a>
        <a href="#popup5"></a>
        <a href="#popup6"></a>
    </section>
```

```
<div id="popup1" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
<div id="popup2" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
<div id="popup3" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
<div id="popup4" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
<div id="popup5" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
<div id="popup6" class="overlay">
    <a class="close" href="#">&times;</a>
    
</div>
```

```
<section class="contact">
    <h2>Contact Us</h2>
    <p>Email: fashion2025@email.com</p>
    <p>Phone: +91 98765 43210</p>
</section>
```

```
<footer class="footer">
  <p>&copy; 2025 Fashion Lookbook. All Rights Reserved.</p>
</footer>

</body>
</html>
```

12.2 CSS code:

```
_body {
  font-family: 'Inter', sans-serif;
  background-color: #f0f2f5;
}

.navbar {
  border-bottom: 2px solid #e0e0e0;
}

.card {
  border: none;
}

.text-primary {
  color: #0d6efd !important;
}

.bg-primary-subtle {
  background-color: #e9ecef !important;
}

.btn-outline-secondary {
  border-color: #ced4da;
  color: #6c757d;
}

.btn-outline-secondary:hover {
  background-color: #e9ecef;
}

.text-success {
  color: #28a745 !important;
}

.text-danger {
  color: #dc3545 !important;
}

.list-unstyled li {
  padding: 0.5rem 0;
}
```

```
border-bottom: 1px solid #e9ecef;
}

.list-unstyled li:last-child {
border-bottom: none;
}

.news-item {
border-left: 3px solid #0d6efd;
}
```

12.3 JavaScript code:

```
•  
  
$(document).ready(function() {  
  const topGainersData = [  
    { symbol: 'TSLA', price: 215.45, change: 4.51, changePercent: 2.14 },  
    { symbol: 'NVDA', price: 875.10, change: 15.20, changePercent: 1.76 },  
    { symbol: 'GOOG', price: 172.95, change: 1.50, changePercent: 0.88 },  
    { symbol: 'AMZN', price: 185.00, change: 1.05, changePercent: 0.57 }  
  ];  
  
  const topLosersData = [  
    { symbol: 'AAPL', price: 170.34, change: -1.24, changePercent: -0.73 },  
    { symbol: 'MSFT', price: 420.50, change: -2.30, changePercent: -0.54 },  
    { symbol: 'NFLX', price: 605.00, change: -1.50, changePercent: -0.25 },  
    { symbol: 'CRM', price: 235.00, change: -0.80, changePercent: -0.34 }  
  ];  
  
  const watchlistData = [  
    { symbol: 'AAPL', name: 'Apple Inc.', price: 170.34, change: 1.24, changePercent: 0.73  
  },  
    { symbol: 'GOOG', name: 'Alphabet Inc.', price: 172.95, change: -1.50,  
changePercent: -0.88 },  
    { symbol: 'TSLA', name: 'Tesla Inc.', price: 215.45, change: 4.51, changePercent: 2.14  
  },  
  ];  
  
  const newsData = [  
    { title: 'Tech Stocks Rebound as Inflation Fears Ease', source: 'MarketWire', date: '2  
hours ago' },  
    { title: 'Tesla Announces New Battery Technology', source: 'Tech News', date: '5 hours  
ago' },  
    { title: 'Apple Q2 Earnings Beat Expectations', source: 'Financial Times', date: '1 day  
ago' },  
  ];  
  
  function renderMarketMovers(containerId, data, isGainer) {  
    const $container = $('#${containerId}');  
    $container.empty();  
    data.forEach(item => {  
      const changeClass = isGainer ? 'text-success' : 'text-danger';
```

```

const changeSign = isGainer ? '+' : '';
const listItem = `
  <li class="d-flex justify-content-between align-items-center">
    <div>
      <p class="fw-semibold mb-0">${item.symbol}</p>
      <small class="text-secondary">${item.name} | "</small>
    </div>
    <div class="text-end">
      <p class="mb-0">${item.price.toFixed(2)}</p>
      <small class="${changeClass}">${changeSign}${item.change.toFixed(2)}
($ {changeSign} ${item.changePercent.toFixed(2)}%)</small>
    </div>
  </li>
`;
$container.append(listItem);
});
}

function renderWatchlist() {
  const $watchlistContainer = $('#watchlist');
  $watchlistContainer.empty();
  watchlistData.forEach(item => {
    const changeClass = item.change >= 0 ? 'text-success' : 'text-danger';
    const changeSign = item.change >= 0 ? '+' : '';
    const cardItem = `
      <div class="col-lg-4 col-md-6">
        <div class="card rounded-3 shadow-sm p-3">
          <h6 class="fw-bold mb-0">${item.symbol}</h6>
          <small class="text-secondary mb-2">${item.name}</small>
          <p class="fs-5 mb-0">${item.price.toFixed(2)}</p>
          <small class="${changeClass}">${changeSign}${item.change.toFixed(2)}
($ {changeSign} ${item.changePercent.toFixed(2)}%)</small>
        </div>
      </div>
    `;
    $watchlistContainer.append(cardItem);
  });
}

function renderNewsFeed() {

```

```

const $newsContainer = $('#news-feed');
$newsContainer.empty();
newsData.forEach(item => {
  const newsItem = `
    <div class="col-lg-4">
      <div class="card p-3 news-item rounded-3 shadow-sm">
        <p class="fw-semibold mb-1">${item.title}</p>
        <small class="text-secondary">${item.source} - ${item.date}</small>
      </div>
    </div>
  `;
  $newsContainer.append(newsItem);
});
}

function renderChart() {
  const ctx = document.getElementById('priceChart').getContext('2d');
  const labels = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep'];
  const data = [170.34, 172.50, 168.90, 175.20, 173.40, 176.10, 174.50, 178.90,
180.20];

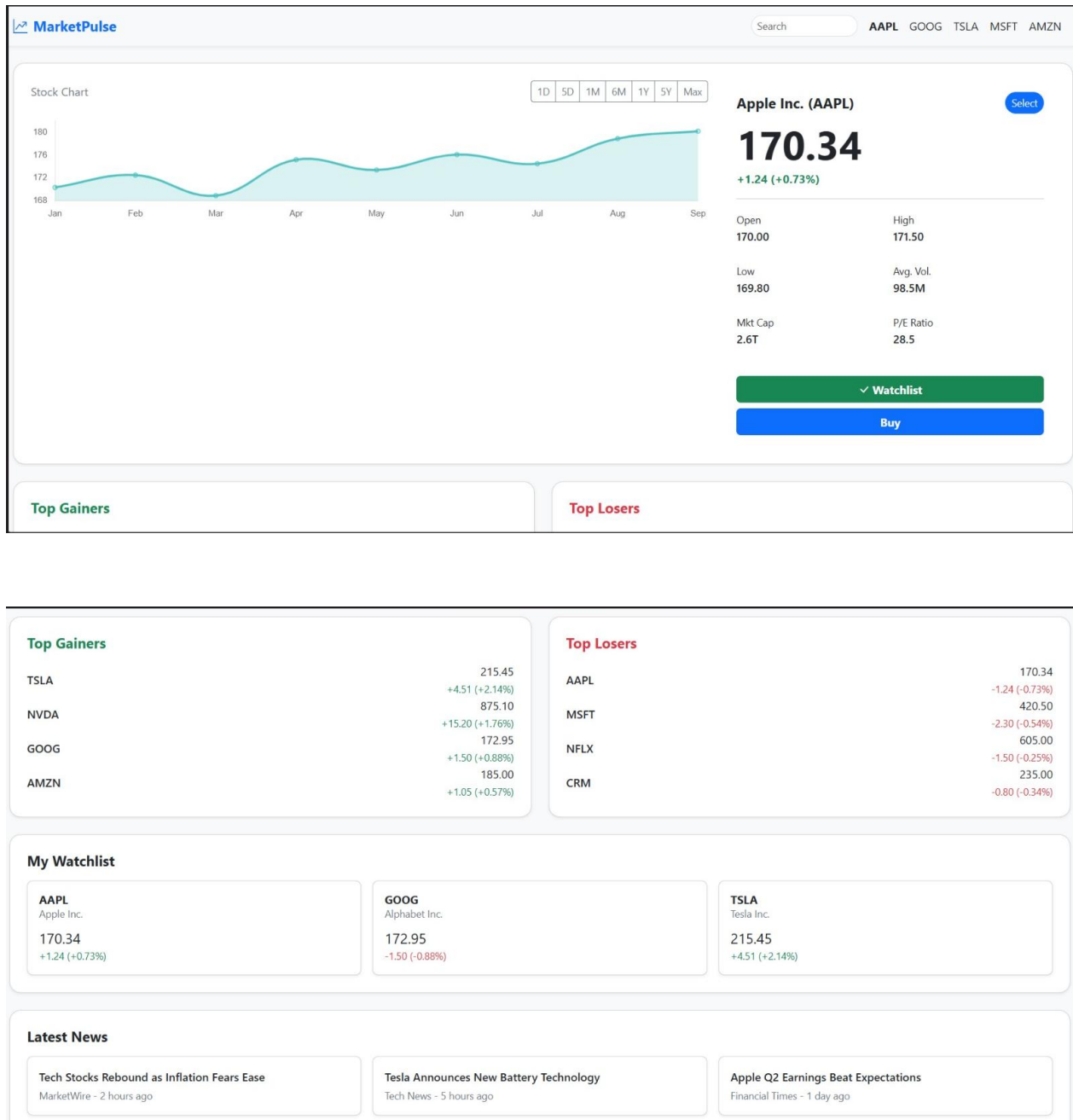
  new Chart(ctx, {
    type: 'line',
    data: {
      labels: labels,
      datasets: [{
        label: 'Price',
        data: data,
        borderColor: 'rgba(75, 192, 192, 1)',
        backgroundColor: 'rgba(75, 192, 192, 0.2)',
        fill: true,
        tension: 0.4
      }]
    },
    options: {
      responsive: true,
      maintainAspectRatio: false,
      plugins: {
        legend: {
          display: false

```



```
    }  
  },  
  scales: {  
    x: {  
      grid: {  
        display: false  
      }  
    },  
    y: {  
      grid: {  
        display: false  
      }  
    }  
  }  
}  
});  
}  
  
renderMarketMovers('top-gainers', topGainersData, true);  
renderMarketMovers('top-losers', topLosersData, false);  
renderWatchlist();  
renderNewsFeed();  
renderChart();  
});
```

13. Screenshots of Final Output



14. Conclusion

The Stock Market Website showcases how a dynamic, data-driven interface can be built using core front-end technologies. Developing real-time stock listings, interactive filters, and responsive charts reinforced essential concepts such as semantic HTML structure, modular CSS styling, and asynchronous JavaScript integration. This project strengthened practical skills in responsive design, API handling, and accessibility-focused development—laying a solid foundation for more complex financial platforms and scalable web applications.

15. References

- L&T LMS: <https://learn.Intedutech.com/Landing/MyCours>
- MDN Web Docs – HTML, CSS, JavaScript, Bootstrap &jQuery References
- Google Fonts – Web Typography Guidelines