

# Password Generator - Complete Project Prompt

## Project Overview

Create a modern password generator application with length slider, character options, and copy to clipboard functionality. Build using three separate files: HTML, CSS, and JavaScript.

## Project Structure

password-generator/

├── index.html

├── style.css

└── script.js

## HTML File (index.html)

Required elements:

- Proper DOCTYPE and responsive meta tags
- Link to external CSS and JavaScript files
- Main container with modern card design
- Header with title
- Password display area (read-only input)
- Length slider with value display (8-50 range)
- Checkboxes for character types:
  - Uppercase letters (A-Z)
  - Lowercase letters (a-z)
  - Numbers (0-9)
  - Symbols (!@#\$%^&\*)
- Generate button
- Copy to clipboard button
- Password strength indicator

## CSS File (style.css)

Design requirements:

- **Modern card layout** with center alignment
- **Gradient background** for visual appeal
- **Styled form controls** - custom slider and checkboxes
- **Responsive design** for mobile and desktop
- **Button animations** - hover and active states
- **Password display** - monospace font, proper styling
- **Strength indicator** - color-coded (weak/medium/strong)
- **Copy feedback** - visual confirmation when copied

### JavaScript File (script.js)

Core functionality:

- **Character sets** - define uppercase, lowercase, numbers, symbols
- **Password generation** - based on selected options and length
- **Slider functionality** - update length value in real-time
- **Copy to clipboard** - using navigator.clipboard API
- **Password strength** - calculate and display strength level
- **Input validation** - ensure at least one character type selected
- **Event listeners** - for generate button, copy button, slider, checkboxes

### Key Features to Implement

#### 1. Password Generation Logic

javascript

```
const characterSets = {
  uppercase: 'ABCDEFGHIJKLMNOPQRSTUVWXYZ',
  lowercase: 'abcdefghijklmnopqrstuvwxyz',
  numbers: '0123456789',
  symbols: '!@#$%^&*()_+-=[]{}|;:,.<?>'
}
```

#### 2. Length Slider

- Range: 8 to 50 characters

- Display current value next to slider
- Update password when slider changes

### 3. Character Options

- 4 checkboxes for different character types
- At least one must be selected
- Visual feedback for selection

### 4. Copy to Clipboard

- One-click copy functionality
- Success message/animation
- Handle copy errors gracefully

### 5. Password Strength Indicator

- **Weak:** < 8 characters or limited character types
- **Medium:** 8-12 characters with 2-3 character types
- **Strong:** 13+ characters with all character types

### Color Scheme

CSS

```
:root {  
  
  --primary: #667eea;  
  --secondary: #764ba2;  
  --success: #4caf50;  
  --warning: #ff9800;  
  --danger: #f44336;  
  --bg: #f5f7fa;  
  --card-bg: #ffffff;  
  --text: #333333;  
  --border: #e0e0e0;  
}
```

### Responsive Breakpoints

- **Mobile:** 320px+ (single column)
- **Desktop:** 768px+ (optimal layout)

### Essential Functions

1. generatePassword() - Create password based on settings
2. copyToClipboard() - Copy password to clipboard
3. calculateStrength() - Determine password strength
4. updateLength() - Update slider value display
5. validateOptions() - Ensure at least one option selected

### File Organization

Provide complete code for all three files:

1. **index.html** - Complete structure with all form elements
2. **style.css** - Modern styling with animations
3. **script.js** - Full functionality with error handling

### Expected Output

A fully functional password generator that:

- Generates secure passwords with customizable options
- Works on all devices with responsive design
- Provides instant copy to clipboard functionality
- Shows password strength indication
- Has smooth animations and modern UI

### Default Settings

- Length: 16 characters
- All character types: enabled
- Auto-generate on page load

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*Note: Uses modern clipboard API for copy functionality with fallback for older browsers.*