

## Chapter 4 - Outputs & Reports Testing

### 4.1 Test Plan

#### Testing Objectives

The main objective of testing is to ensure that the Text-to-Image Generator AI SaaS App functions correctly, meets performance expectations, and provides a seamless user experience. The testing process will identify and rectify errors, ensuring system reliability and efficiency.

#### Scope of Testing

- Functional testing of text-to-image conversion.
- UI testing to validate responsiveness and user interactions.
- Security testing for authentication and data protection.
- Performance testing to ensure quick and scalable image generation.

#### Testing Methodologies

- Black-box Testing: Focuses on validating user inputs and outputs.
- White-box Testing: Ensures proper code execution and logic validation.

#### Testing Tools

- Postman - API testing and request validation.
- Jest - Unit testing for React components.
- Cypress - End-to-end testing for UI interactions.

#### Test Environment

Hardware Requirements:

- Minimum: Intel Core i3, 2GB RAM, 256GB SSD
- Recommended: Intel Core i5, 8GB RAM, 512GB SSD

Software Requirements:

- VS Code for development
- MongoDB for database management
- Node.js and Express.js for backend functionality
- React.js for frontend development

4.2 Black-box Testing or Data Validation Test Cases

Test Case Id	Test Scenario	Expected Output	Result
TC - 01	Enter a valid prompt	Image is generated successfully	Pass
TC - 02	Enter an empty prompt	Generate button won't respond	Pass
TC - 03	Test login with invalid/incorrect credentials	Authentication fails, error displayed	Pass
TC - 04	Download generated image	Image downloaded successfully	Pass

4.3 White-box Testing or Functional Validation Test Cases & Results

Test Case Id	Test Scenario	Expected Output	Result
WT - 01	Check API response for image generation request	Proper image response is received	Pass
WT - 02	Verify database entries after user registration	Data is stored securely in MongoDB	Pass
WT - 03	Test authentication with encrypted passwords	Secure login is ensured	Pass
WT - 04	Validate performance under high traffic	Response time remains within acceptable limits	Pass/Fail