

# PC Configurator & Analyzer - Software Analysis

## 1 Introduction

The **PC Configurator & Analyzer** is a comprehensive software solution designed to assist users in building, optimizing, and purchasing custom PC setups. The application provides powerful tools for selecting core components and peripherals, finding the best prices across multiple vendors, and ensuring compatibility. It offers features such as price comparisons, user-generated build guides, AI-based configuration recommendations, and a unique "My Bundle" option that provides a complete PC setup at a competitive price. Users can also receive advice, benchmark analysis, and tailored recommendations for specific use cases such as gaming, video editing, or streaming.

## 2 Project Goals

The main goals of the **PC Configurator & Analyzer** application are as follows:

- Help users build optimized custom PC setups based on their budget and requirements.
- Provide a comprehensive price comparison tool to find the best deals across multiple vendors.
- Ensure component compatibility and suggest optimizations for better performance.
- Offer tailored recommendations for different use cases like gaming, video editing, and streaming.
- Implement AI-based features to enhance user experience with smart suggestions and predictions.

## 3 Target Audience

The target audience for this application includes:

- Gamers looking to build high-performance gaming rigs.
- Content creators (video editors, streamers, designers) need powerful workstations.
- Tech enthusiasts who enjoy customizing and optimizing PC builds.
- First-time PC builders seeking guidance on compatibility and pricing.
- Budget-conscious users looking for the best deals and optimized configurations.

## 4 Features Overview

Key features of the **PC Configurator & Analyzer** include:

- **Component Selection:** Choose from various components with compatibility checks.
- **Price Comparison:** Compare prices across multiple vendors to find the best deals.
- **AI-Based Recommendations:** Get suggestions based on performance and budget.
- **”My Bundle” Option:** A complete PC setup at a competitive price, including peripherals.
- **Benchmark Analysis:** Performance predictions for gaming, video editing, etc.
- **User-Generated Build Guides:** Explore and share build guides.
- **Advanced Search & Filtering:** Apply filters based on brand, performance, and price range.
- **Real-Time Price Alerts:** Notifications for price drops and special deals.
- **Purchase Integration:** Add components to cart and view a summary before checkout.

## 5 AI and Data Science Implementations

The application will utilize various AI and data science techniques:

- **AI-Based Recommendations:** Suggest optimal configurations based on user preferences and use cases.
- **Compatibility Prediction Model:** Use machine learning to predict component compatibility based on historical data.

- **Price Prediction:** Analyze historical price trends to predict future price drops.
- **Performance Prediction:** Use regression analysis for predicting FPS and benchmark scores.
- **Recommendation System:** Offer component recommendations based on user behavior and preferences.
- **Data Analysis for Trends:** Identify popular configurations and trends in the market using data analysis.

## 6 User Stories

Here are the primary user stories for the application:

- **Core Component Selection:**
  - As a user, I want to select various PC components from a list of available options.
- **Price Comparison:**
  - As a user, I want to compare prices for selected components across different vendors.
- **AI-Based Recommendations:**
  - As a new user, I want the application to suggest a starting configuration based on my use case.
- **"My Bundle" Option:**
  - As a user, I want to choose the "My Bundle" option for a complete setup at a competitive price.
- **Peripheral Search:**
  - As a user, I want to search for additional parts like monitors and keyboards based on my budget.
- **Benchmark Analysis:**
  - As a user, I want to see performance benchmarks for my selected components.
- **User-Generated Build Guides:**
  - As a user, I want to create and share my own build guides.
- **Real-Time Price Alerts:**

- As a user, I want to receive notifications about price drops on my selected components.
- **Advanced Search & Filtering:**
  - As a user, I want to apply advanced filters to find specific components quickly.
- **Purchase and Checkout Integration:**
  - As a user, I want to add selected components directly to the shopping carts of vendors.

## 7 Conclusion

The **PC Configurator & Analyzer** application aims to provide a seamless and efficient experience for users looking to build custom PCs. By integrating advanced AI features and a comprehensive set of tools, the platform helps users make informed decisions, find the best deals, and optimize their PC builds for various use cases. The inclusion of a "My Bundle" option, price comparisons, real-time alerts, and tailored recommendations will enhance user satisfaction, making this application a go-to solution for PC enthusiasts and beginners alike.