

# PC PART PICKER

## *Software Test Description*

Document Change History

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# 1 Introduction

This test approach document describes the appropriate strategies, process, workflows and methodologies used to plan, organize, execute and manage testing of PC Part Picker website.

## 1.1 Overview

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PC Part Picker is a comprehensive online platform designed to assist users in building custom desktop computers tailored to their specific needs and preferences. It serves as a one-stop destination for both novice and experienced PC enthusiasts, offering a plethora of tools and resources to simplify the process of selecting compatible hardware components and assembling them into a cohesive system.

Key Functionalities:

- **Component Catalog:** Browse through a vast catalog of computer parts from various manufacturers, including CPUs, GPUs, motherboards, RAM, storage drives, power supplies, cases, and more.
- **Comparison Tools:** Compare specifications, prices, and user reviews to make informed decisions about which components best suit your requirements.
- **Compatibility Checking:** Automatically verify that selected components are compatible with each other, helping users avoid potential pitfalls such as mismatched socket types, incompatible form factors, or insufficient power supply wattage.
- **Estimation Tools:** Estimate power consumption, generate part lists, and share build configurations with others for feedback and advice.
- **Community Engagement:** Engage with an active community of users and contributors, sharing build ideas, troubleshooting issues, and providing guidance to fellow PC builders.

With its intuitive interface, robust feature set, and active community of users and contributors, PC Part Picker has become an invaluable resource for PC builders worldwide.

## 2 Test Enviroments

During the testing phase of the PC Part Picker website, multiple test environments are utilized to facilitate thorough evaluation of the system across various configurations. These environments are meticulously set up to mimic the production environment as closely as possible while providing the necessary flexibility for testing activities. The following test environments are utilized:

- Operating System: Windows 11 OS Build 22H2.3085
- Browser 1: Google Chrome Version 121.0.6167.140
  - All Extension are disabled
  - Cookies are allowed
- Browser 2: Firefox Version V 122.0
  - All Extension are disabled
  - Cookies are allowed
- Browser 3: Microsoft Edge Version 121.0.2277.98
  - All Extension are disabled
  - Cookies are allowed
- Python 3.12
- Selenium 4.18.1

- Selenium server 4.17.0

## 3 Test Tree

### 3.1 Functional Tests

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Functional tests validate the behavior of the PC Part Picker website's features and functionalities. These tests cover various aspects on different components such as:

#### 3.1.1 Login Page

##### 3.1.1.1 Valid Login

- Login with valid username and password
- Login using third-party integration

##### 3.1.1.2 Invalid Login

- Login using nonexistent email
- Login using existing email and wrong password

##### 3.1.1.3 Restore password

#### 3.1.2 Registration Page

##### 3.1.2.1 Valid Registration

##### 3.1.2.2 Invalid Registration:

- Registration with already registered email
- Registration with already registered username
- Registration with invalid email
- Registration with invalid password
- Registration with invalid username
- Registration without checking TOS
- Registration without checking UCOC
- Registration with not matching email
- Registration with not matching password

#### 3.1.3 Search Functionality:

- Search using valid keywords
- Search using a valid product name
- Search using a valid product ID
- Search using a valid category name
- Search using invalid keywords
- Search empty space

#### 3.1.4 Sorting Functionality

- Sorting by price descending order
- Sorting by price increasing order

#### 3.1.5 Filters Functionality

- Filter using price Slider
- Filter by manufacturer
- Filter by Rating

- Filter by using product page specific filters.

### 3.1.6 Building Pc Section

- Choosing, changing, and removing CPU
- Choosing, changing, and removing GPU
- Choosing, changing, and removing RAM
- Choosing, changing, and removing Power Supply
- Choosing, changing, and removing SSD & HDD
- Choosing, changing, and removing CPU FANS
- Choosing, changing, and removing Case
- Changing parts of a pre-built PC

### 3.1.7 End to End

- Build a Pc and save the build using the Permalink

## 3.2 Non-Functional Tests

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Non-functional tests focus on aspects such as performance, compatibility, localization, globalization, and recovery.

### 3.2.1 Check compatibility in PC Building Section

- Check the compatibility of the built PC Parts
- Check the compatibility between CPU & motherboard
- Check the compatibility between GPU & power supply
- Check the compatibility between GPU & Case
- Check the compatibility between RAM & motherboard

### 3.2.2 Compatibility Different browsers

- compatible with Google Chrome
- compatible with Microsoft Edge
- compatible with Safari
- compatible with Mozilla Firefox

### 3.2.3 Performance testing

- testing the system with 10000 users
- testing the system with more than 10000 users
- testing the system with overloaded database

### 3.2.4 Localization and Globalization

- changing the Website's Language

### 3.2.5 Recovery Testing

- Reload the page and check user is still connected

- Reload the page and selected part in pc section are saved

## **4 Test Cases**

Test cases are attached in Test\_Cases.csv and were loaded to TestRail.