**Project Proposal: Compfy *– PC Builder Web Application***

# Problem Statement

When purchasing a new personal computer, most users simply visit a local shop and explain their requirements in vague terms such as:

* *“I need it for office work”*
* *“I want to edit videos”*

*• “I need it for gaming”*

Due to the user’s limited technical knowledge and the shopkeeper’s personal judgment or stock availability, the suggested PC build often does not match the user’s actual needs.

This leads to several issues:

* **Wastage of money** on unnecessary high-end components.
* **Underpowered systems** that cannot handle the user’s tasks efficiently.
* **Bottlenecks** where certain components limit the performance of others.
* **Energy** **inefficiency** due to mismatched or overpowered hardware.
* **Lack of future compatibility** with modern operating systems and applications.

There is a need for a requirement-based PC builder system that ensures optimized, budget-friendly, and compatible PC builds for different categories of users.

# Proposed Solution

The *Compfy* will act as a requirement-driven PC configuration tool. It will gather details about the user’s intended usage and automatically generate the most suitable PC build.

The system will ensure:

* Minimum bottlenecks between components.
* Avoidance of unnecessary overspending.
* Compatibility with the latest operating systems and applications.
* Balance between performance, price, and efficiency.

# User Categories & Requirements

The application will support three categories of users, each with two intensity levels: Casual and Heavy Usage.

## Study / Office Work

**Casual Usage:**

* Word processing, spreadsheets, billing software, browsing, social media.
* Suggested Build: Budget-friendly PC with integrated graphics (iGPU) or a basic display card.

**Heavy Usage:**

* Programming, SEO, system administration, multitasking with office tools.
* Suggested Build: Mid-range PC with a more powerful CPU, increased RAM & storage, iGPU or basic display card.

## Professional Editing / AI-ML

**Casual Usage:**

* Graphic designing, basic video editing, entry-level AI/ML tasks.
* Suggested Build: Mid-range workstation (AMD FirePro / Nvidia Quadro GPU, Intel Xeon or AMD Ryzen, adequate RAM & storage)

**Heavy Usage:**

* 3D animation, heavy video rendering, complex AI/ML workloads.
* Suggested Build: High-end workstation (professional GPU, powerful Xeon/Ryzen CPUs, large RAM & storage)

## Gaming & Streaming

**Casual Usage:**

* Low-end gaming (FPS, arcade, older AAA titles)
* Suggested Build: Mid-range gaming PC (dedicated GPU, decent CPU, balanced RAM & storage)

**Heavy Usage:**

* High-end gaming (latest open-world, RPG, AAA titles) and live streaming.
* Suggested Build: High-end gaming rig (powerful GPU, CPU, large RAM & storage, optimized cooling)

# System Features

## Requirement-Based PC Build Generation

* User selects category and usage level.
* System generates a component list (CPU, GPU, RAM, Storage, PSU, Motherboard, Cooling).

## Compatibility Check

* Ensures components work together without bottlenecks.
* Prevents mismatches (e.g., weak CPU with powerful GPU)

## Budget Optimization

* Suggests the most cost-effective build for the required performance.
* Avoids overspending on unnecessary hardware.

## Market Price Estimation (Pakistan Specific)

* Provides a rough estimate of total build price based on Pakistani market.
* Keeps users informed about approximate costs before purchasing.

## Estimated Power Consumption

* Calculates approximate power consumption by summing wattage of GPU, CPU, RAM, storage, motherboard, and fans.
* Provides UI section showing monthly electricity usage for 1, 4, and 8 hours per day.

**Marketplace Price & Availability Search**

* After generating a suggested PC build, the system will automatically search online marketplaces (Daraz, AliExpress, OLX, etc.) using pre-specified keywords.
* This helps users quickly check live availability and compare prices without manually searching multiple websites.

## Component Summary in Builds

• Displays a small section under each build showing specifications of major components (CPU, GPU, RAM, SSD, HDD)

## Export & Share Build

* Users can export the build summary (PDF or print)
* Build summaries can be shown directly to shopkeepers for easy assembly.

# Benefits

* **For Users**  
  Avoids confusion and overspending.  
  Ensures optimized, compatible builds.  
  Quick price/availability search on Daraz, AliExpress, OLX.  
  Saves time with ready build summaries.
* **For Vendors**  
  Clearer communication with customers.  
  Fewer mismatches and complaints.  
  Increased sales through sponsored builds.
* **For the Industry**  
  Encourages informed, standardized builds.  
  Boosts e-commerce via marketplace integration.

# Scope

* Initially covers desktop PCs only.
* Focuses on three categories: Office, Editing/AI, and Gaming.
* Provides component lists with price estimates.
* Includes marketplace search links (Daraz, AliExpress, OLX) for suggested builds.
* Database and AI modules can be expanded for advanced configurations in future.

# Business Model & Revenue Potential

To ensure sustainability and monetization, Compfy will introduce a vendor sponsorship model:

## Vendor Partnerships

* Partner with PC vendors and component retailers in Pakistan.
* Vendors can register on the platform to showcase their components in recommended builds.

## Revenue Model

* Charge vendors a 1% commission fee per successful build purchased through Compfy.
* This model ensures that Compfy earns a small but consistent revenue stream without overburdening customers.

## Revenue Estimation (Pakistan Market)

Average PC build cost: PKR 200,000 (approx. 2 lakh).

* Commission per build: PKR 2,000.
* Monthly builds: 100 (targeted).
* Monthly revenue: PKR 200,000.
* Annual revenue: PKR 2.4 million (~24 lakh).

This demonstrates clear financial scalability. With increased partnerships and higher sales volume, Compfy can grow into a profitable platform for both customers and vendors.

# Future Planned Features

## Build Upgrade Suggestions

Analyzes user’s existing build.

Identifies limiting factors (weak GPU, low RAM, etc.)

## Suggests compatible upgrades.

## Performance Comparison

Compares current build vs recommended build.

Displays performance differences in a clear comparison table.