

BuildMate: PC Assembly & Upgrade Experience

Build your dream PC with ease

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Course	UX Design in Web & Mobile App	CSIS-3375-004
Team Lead	Ruon Kitahara	

Introduction

Background

Building or updating a personal computer (PC) has always been thought of as a chore best left to enthusiasts and users with technical expertise. The demand for in-depth understanding of device compatibility, power requirements, and performance benchmarks makes the process daunting for many novices. Errors like selecting an inadequate power supply or an unsuitable motherboard may rapidly result in frustration and resource loss. The majority of current resources are still technical, text-heavy, and inaccessible to the typical user, despite the rising interest in custom PCs.

Purpose of BuildMate

BuildMate provides an interactive, visually-first environment for PC building and upgrades in order to address these issues. A virtual builder allows users to drag and drop components while getting real-time compatibility checks, performance information, and suggestions for upgrades. To improve decision-making even further, the application models results like system efficiency, rendering speeds, or predicted game performance. Users may sample how various PC cases might appear in their workstation with BuildMate's augmented reality (AR) features. The building process becomes an interesting, simple, and instructive experience thanks to this mix of characteristics.

Significance

BuildMate's importance comes from its capacity to make PC building more accessible. The application encourages curiosity and confidence in users while empowering them to make educated decisions by lowering the technological obstacles that deter novices. BuildMate offers a hands-on, interactive method similar to constructing with LEGO bricks, in contrast to conventional websites or applications that place an emphasis on particular requirements. This helps novice builders, but it also appeals to seasoned users who want performance-based decision-making, efficiency, and visibility. In the end, BuildMate reinvents PC construction as a life-changing activity centered on empowerment, knowledge, and accessibility.

Motto: Assemble. Learn. Upgrade.

Background Research

Market Competitors

1. PCPartPicker
 - Provides a large database of PC components with compatibility checks (PCPartPicker, n.d.).
 - However, it is text-heavy and lacks a visual, interactive building interface.
 - Focuses more on listing and pricing rather than providing a hands-on building experience.
2. NZXT BLD
 - An online PC building service where users choose parts and have a pre-built system (NZXT, n.d.).
 - While it reduces complexity, it removes the hands-on learning and building process.
 - As a result, it is less interactive and less educational than BuildMate.
3. MSI Mystic Light / ASUS Armoury Crate (ecosystem tools)
 - Apps that allow customization of RGB lighting and, in the case of Armoury Crate, hardware monitoring (MSI, n.d.; ASUS, n.d.).
 - Useful post-purchase personalization but not for planning or learning.
 - Unlike BuildMate, they focus only on customization after buying components.

Market Inspirations

1. LEGO Digital Designer
 - Provides a playful, drag-and-drop building experience for LEGO sets (LEGO Group, n.d.).
 - Its intuitive and creative approach inspires BuildMate's visual and interactive design philosophy.
2. IKEA Place (AR app)
 - Lets users preview furniture in their home using AR (IKEA, n.d.).
 - Inspires BuildMate's AR preview feature, allowing users to visualize PC cases in real-world contexts.
3. Canva
 - A design platform accessible for beginners while offering advanced tools for experts (Canva, n.d.).
 - BuildMate adopts a similar philosophy: simple for novices, valuable for enthusiasts.

Why BuildMate is Different

Unlike existing tools that are either text-heavy, oversimplified, or limited to post-purchase customization, BuildMate integrates visual drag-and-drop building, real-time compatibility checks, performance simulation, and AR previews into one unified platform. This combination creates not only a practical tool for decision-making but also an engaging, educational, and empowering experience for all levels of users.

PACT Framework

People

- Novices: Users with little to no technical knowledge who want to build their first PC without fear of making mistakes.
- Intermediate users: Hobbyists who have some knowledge but want a faster and more reliable way to check compatibility and performance.
- Experts/enthusiasts: Users who enjoy building PCs but want additional efficiency, visual simulations, and AR previews to optimize and experiment.

Activities

- Selecting and assembling PC components in a drag-and-drop virtual interface.
- Receiving real-time compatibility checks
- Exploring performance simulations
- Using AR previews to visualize physical appearance of the PC in a real environment.
- Comparing and upgrading existing PC builds with tailored suggestions.

Context

- At home: Users build and visualize PC setups from their personal devices.
- In retail stores: Customers use BuildMate to virtually assemble before purchasing parts.
- In learning environments: Students use the app to learn about hardware, compatibility, and system performance.
- Community spaces: Enthusiasts share builds, recommendations, and performance results.

Technology

- Cross-platform (planned)
- Augmented Reality (AR) integration for visualization of PC cases and setups.
- Drag-and-drop interface optimized for intuitive user interaction.

Value Proposition

BuildMate delivers a transformative PC-building experience by removing the steep learning curve that prevents many users from engaging with custom PC assembly. Unlike existing tools that are text-heavy or limited to static compatibility checkers, BuildMate combines visual interactivity, real-time performance simulation, and AR visualization into one unified platform.

- For novices, it transforms building a PC from a confusing technical task into a fun, guided, and educational experience.
- For enthusiasts, it streamlines research and provides data-driven optimization tools to maximize performance.
- For retailers and educators, it provides an engaging way to demonstrate hardware setups, encouraging exploration and confident purchasing decisions.

In essence, BuildMate empowers users to assemble, learn, and upgrade with confidence by transforming a once intimidating process into an accessible, enjoyable, and empowering journey.

Project Contract

We, the undersigned, agree to the following:

- Meetings: Twice a week (in person + online via Teams).
- Communication: WhatsApp for updates.
- Documentation: Shared Word Documents + GitHub Repo.
- Team Lead Role: Coordinates submissions, ensures deadlines, communicates with the instructor.

Team Members' Signatures:

Eranda Hettiarachchillage	Eranda
Ruon Kitahara	Ruon

Preliminary Features

The preliminary features of BuildMate outline the essential functionality envisioned for the prototype. These features focus on simplifying the PC building process, offering users both utility and creativity while providing opportunities for interactive engagement.

- **Drag-and-drop PC component builder:**
Enables users to assemble their custom PC virtually in an intuitive, visual way.
- **Real-time compatibility checker:**
Automatically identifies and alerts users of any mismatched or incompatible hardware components.
- **Performance simulation:**
Provides projections of gaming FPS, rendering speeds, and overall system performance.
- **Upgrade recommendation engine:**
Suggests optimal upgrades based on the user's current build and performance goals.
- **AR preview of PC case setup:**
Let users virtually place their chosen PC case on their desk using augmented reality for spatial awareness.
- **Community sharing:**
Allows users to share, showcase, and compare their builds with friends or a wider community.

AI Usage

This section outlines the AI tools used to support the development of the BuildMate prototype. It shows the specific purpose of each tool and highlights how the team added value beyond the AI outputs.

AI Tool Name	Version, Account Type	Specific feature for which the AI tool was used
ChatGPT	GPT-5 / Free	Brainstorming novel app ideas, Drafting key proposal sections, refining wording for grammar and clarity.

Value Addition

While AI tools assisted in brainstorming ideas, drafting text, and generating design suggestions, all outputs were carefully reviewed, refined, and customized by the team. The team ensured that all content aligned with course requirements, project objectives, and user needs. Additionally, technical details, research analysis, and contextual explanations were incorporated by the team to ensure accuracy, creativity, and educational value beyond the AI-generated suggestions.

Work Date/Hours

Student: Eranda

Date	Number of Hours	Description
Sep 25, 2025	0.5	Discuss project ideas with instructor
Sep 28, 2025	0.1	Select a project idea with team
Oct 03, 2025	2	Start writing project proposal
Oct 04, 2025	3	Continue with proposal and created Git repo
Oct 05, 2025	2	Complete proposal and compile all content and docs.

Student: Ruon

Date	Number of Hours	Description
Sep 25, 2025	0.5	Discuss project ideas with instructor
Sep 28, 2025	0.1	Select a project idea with team
Oct 03, 2025	2	Start writing project proposal
Oct 04, 2025	2	Write PACT Framework and Value Proposition
Oct 05, 2025	4	Write Background Research and review the entire Project Proposal to ensure completeness, accuracy, and readiness for submission.

References

- ASUS. (n.d.). Armoury Crate [Software page]. ASUS. Retrieved October 5, 2025, from <https://rog.asus.com/us/content/armoury-crate/>
- Canva. (n.d.). Canva [Design platform]. Canva. Retrieved October 5, 2025, from <https://www.canva.com/>
- IKEA. (n.d.). IKEA Place [Mobile application]. IKEA. Retrieved October 5, 2025, from <https://www.ikea.com/global/en/newsroom/innovation/ikea-launches-ikea-place-a-new-app-that-allows-people-to-virtually-place-furniture-in-their-home-170912/>
- LEGO Group. (n.d.). LEGO Digital Designer [Software application]. LEGO. Retrieved October 5, 2025, from <https://www.lego.com/en-us/service/help-topics/article/about-lego-digital-designer>
- MSI. (n.d.). Mystic Light [Software page]. MSI. Retrieved October 5, 2025, from <https://www.msi.com/Landing/mystic-light-rgb-gaming-pc>
- NZXT. (n.d.). NZXT BLD [Online service]. NZXT. Retrieved October 5, 2025, from <https://www.nzxt.com/bld>
- PCPartPicker. (n.d.). PCPartPicker [Database of PC components]. PCPartPicker. Retrieved October 5, 2025, from <https://pcpartpicker.com/>

Appendix

Prompt History

ChatGPT

Saved memory full

Share

Purpose of BuildMate

BuildMate is made to fix these problems by giving users a visual and easy way to build or upgrade their PCs. It lets users drag and drop parts and gives instant checks for compatibility, performance, and suggestions for upgrades. It can also show results like system efficiency or game performance based on parts. Another cool feature is the AR view, so users can see how the PC will look on their desk. All together BuildMate makes the building process simple, interesting, and fun to learn.

Significance

BuildMate is important because it helps people who are not very technical to learn and build their own PCs. It gives confidence to beginners and also helps experienced users who want better performance and information when building. Instead of just reading specs like other websites, users can build like playing with LEGO blocks and see the results. This makes the whole PC building process more creative, educational, and open for everyone.

please fix grammar and make this well

Background

Building or upgrading a personal computer (PC) has traditionally been something only tech enthusiasts or experienced users enjoy doing. It requires a deep understanding of component compatibility, power requirements, and performance metrics, which can be confusing for beginners. Choosing the wrong power supply or motherboard can quickly lead to frustration, wasted time, and unnecessary costs. Most of the resources available today are overly technical and text-heavy, making it difficult for average users to follow, even though interest in building custom PCs is growing.

Purpose of BuildMate

BuildMate is designed to address these challenges by providing users with a visual and intuitive way to build or upgrade their PCs. It allows users to drag and drop components while offering instant compatibility checks, performance insights, and upgrade suggestions. The system can also simulate outcomes such as overall efficiency or expected gaming performance based on selected parts. Additionally, the AR view feature lets users visualize how their PC setup would look on their desk. Altogether, BuildMate makes the PC building process simple, engaging, and educational.

Significance

BuildMate is significant because it empowers people without technical backgrounds to confidently learn and build their own PCs. It fosters both creativity and understanding for beginners while also providing experienced users with valuable performance-based insights. Unlike traditional websites that focus only on specifications, BuildMate offers a hands-on, interactive experience—much like building with LEGO blocks. This makes the entire PC building journey more enjoyable, informative, and accessible to everyone.

I want to create a git repo for this project to share files and other stuff. I need a description to add to the repor. CSIS 3375 – UX Design in Web and Mobile Applications this is the course.

Here's a clean and professional **GitHub repository description** you can use for your project:

BuildMate – CSIS 3375: UX Design in Web and Mobile Applications

A prototype design project focused on creating an interactive and educational PC assembly experience. BuildMate allows users to virtually build, upgrade, and visualize custom PCs through an intuitive and engaging interface. This repository contains project files, research documents, and design assets developed for the UX Design in Web and Mobile Applications course at Douglas College.

Would you like me to also give you a **README.md** layout for this repo (with sections like overview, features, tools used, and contributors)? It'll make your repo look polished and professional.



README File – Oct 5, 11:59 PM: Readme file is created in the repo. It outlines the course, section number, group number, app name, student names, student ids and email ids for the project. This must be created at the time the GitHub Repo is created, and must be updated periodically as needed.

Here's a clean and professional **README.md** template you can use for your GitHub repo to meet that requirement:

CSIS 3375 – UX Design in Web and Mobile Applications

Section: [Enter Section Number]

Group Number: [Enter Group Number]

Project Title

App Name: BuildMate

Project Description

BuildMate is a UX prototype project focused on designing an interactive PC assembly and upgrade experience. The project aims to simplify PC building for users through intuitive design and engaging user interaction.

Team Members

Name	Student ID	Email
Eranda Jayawardena	[Enter ID]	[Enter Email]
[Member 2 Name]	[Enter ID]	[Enter Email]
[Member 3 Name]	[Enter ID]	[Enter Email]

Repository Overview

This repository includes:

- Project proposal and research documents
- UI/UX design files and prototypes
- Meeting notes and progress updates

Last Updated

October 5, 2025

BuildMate.

3. MSI Mystic Light / ASUS Armoury Crate (ecosystem tools)

- Apps that allow customization of RGB lighting and, in the case of Armoury Crate, hardware monitoring.
- Useful post-purchase personalization but not for planning or learning.
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Market Inspirations

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3. Canva

- A design platform accessible for beginners while offering advanced tools for experts.
- BuildMate adopts a similar philosophy: simple for novices, valuable for enthusiasts.

please give me references to these sites with APA

Here are sample APA-style references for those apps/websites you listed. You might need to adjust based on exact versions or publication dates you have.

References

PCPartPicker. (n.d.). *PCPartPicker — Pick parts. Build your PC. Compare and share.*

Retrieved October 5, 2025, from <https://pcpartpicker.com/> ↗ PCPartPicker

ASUS. (n.d.). *Armoury Crate* [Software page]. Retrieved October 5, 2025, from

<https://rog.asus.com/us/content/armoury-crate/> ↗ @ROG

ASUS. (n.d.). *Armoury Crate compatible devices* [FAQ]. Retrieved October 5, 2025, from

<https://www.asus.com/us/support/faq/1042459/> ↗ ASUS Global

IKEA. (n.d.). *IKEA Place* [App / AR tool]. Retrieved October 5, 2025, from

<https://www.ikea.com/us/en/customer-service/ikea-apps> ↗ YouTube +2

Canva. (n.d.). *Canva* [Design platform]. Retrieved October 5, 2025, from

<https://www.canva.com> ↗

LEGO. (n.d.). *LEGO Digital Designer* [Software / app]. Retrieved October 5, 2025, from

<https://www.lego.com/en-us/ldd> ↗

NZXT. (n.d.). *NZXT BLD* [Service / product]. Retrieved October 5, 2025, from

<https://www.nzxt.com/bld> ↗

If you want, I can format these in **your proposal's reference list** exactly in APA7 style, with hanging indents etc. Do you want me to integrate these into your proposal's References section?

AI Use Section give a small description to this too

Here's a concise and professional description you can use for the **AI Use Section**:

AI Use Section

The AI Use Section highlights the tools employed during the design and development of the BuildMate prototype. It documents the specific AI platforms, their versions, and account types, as well as the exact purpose for which they were used. This section ensures transparency in the design process and distinguishes between AI-generated contributions and the value added by the team. It also reflects how AI served as a supportive tool to enhance creativity, efficiency, and innovation in the project.

👉 Do you want me to also prepare a **sample table format** for the AI tools (like ChatGPT, Figma AI plugins, MidJourney, etc.) in APA style, so you can just fill it in later?

📄 👍 🗨️ ⬆️ ↺ ⋮

please

Absolutely ✅ Here's a **sample AI tools table** formatted professionally for APA 7 style that you can include under the **AI Use Section**:

Table 1

AI Tools Used in BuildMate Prototype

AI Tool Name	Version / Account Type	Specific Use Case
ChatGPT (GPT-5)	Free	Assisted in drafting proposal text, refining descriptions, and brainstorming features.
DALL-E	Free Trial	Created app logo and visual mockups for prototype screens.
Figma AI Plugin	Starter / Free	Generated design suggestions and refined UI/UX elements in wireframes.

Note: The team further refined all AI-generated outputs by adding realistic, feasible design adjustments, ensuring that the final prototype aligns with user needs and project objectives.

If you want, I can also **write the "Value Addition" paragraph** for this section so it's ready and professional. This would explain how your team added creative and practical input beyond what AI produced. Do you want me to do that?

📄 👍 🗨️ ⬆️ ↺ ⋮

how should i format headings. titles, in word. i need this in a professional way with APA7

Great question 🙌 If you're submitting this as a **formal academic/professional proposal in Word (APA 7th edition style)**, you'll want a clean structure with **APA-style formatting** for headings, fonts, and references.

Here's how you should format everything:

General Formatting (APA 7)

- **Font:** Times New Roman 12pt (or Calibri 11pt, Arial 11pt are also APA-accepted).
- **Line spacing:** Double-spaced throughout (except tables).
- **Margins:** 1 inch on all sides.
- **Alignment:** Left-aligned (no full justification).
- **Page numbers:** Top right corner, starting on the title page.

Title Page (APA 7 Student Paper Style)

- **Centered, Bold Title** (title case → major words capitalized)
- One line description under title (italicized)
- Names and Student IDs (centered, double-spaced)
- Course Name and Section (centered)
- Instructor's Name (if required)
- Date (centered)

Example (centered, double-spaced):

BuildMate: PC Assembly & Upgrade Experience

Build your dream PC with ease – compatibility, performance, and design made visual

Eranda Jayawardena (12345678)

Student Name 2 (87654321)

Student Name 3 (11223344)

Course: CIS XXXX – Section XX

Instructor: [Name]

Team Lead: Eranda Jayawardena

Date: February 10, 2025

Headings (APA 7 Style)


APA has **five levels of headings**. For your proposal, you'll mostly need **Level 1 and Level 2**.

- **Level 1 Heading:** Centered, Bold, Title Case
Example: **Introduction**
- **Level 2 Heading:** Left-aligned, Bold, Title Case
Example: **Novelty of the App**
- **Level 3 Heading:** Left-aligned, Bold Italic, Title Case (only if needed for sub-sub sections).

Example Formatting for Your Proposal

Introduction (Level 1 – Centered, Bold)

Describe the app. How is it novel? What is the transformative experience?

Background Research (Level 1 – Centered, )