EXECUTIVE SUMMARY

Morning routines significantly impact how individuals start their day, yet many people experience stress, inefficiency, and missed information during this crucial time. Mr-r Mr-r addresses this gap by offering an AI-integrated touchscreen mirror designed to streamline morning activities, provide real-time updates like weather and news, and reduce the feeling of being overwhelmed. Unlike other smart mirrors that require casting from external devices, Mr-r Mr-r is a fully independent system that combines a two-way mirror, a customizable display, and AI-driven voice interaction, offering users a unique, all-in-one solution they cannot easily find elsewhere. Figure 1 illustrates the features of Mr-r Mr-r that set it apart from any other smart mirror on the market.

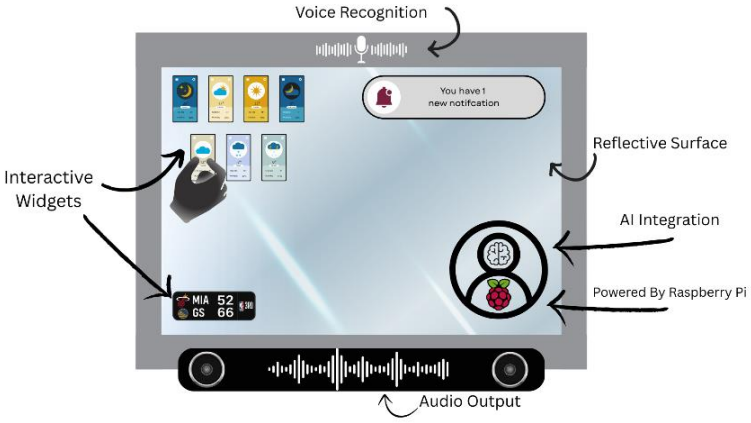

Figure 1. Mr-r Mr-r

The development of Mr-r Mr-r adheres to several key requirements and constraints. It must deliver natural, coherent conversations with high voice recognition accuracy, an intuitive 1080p touchscreen interface with mirror functionality, and clear audio output. Core constraints include maintaining a $1,000 total project budget, achieving durability against moisture exposure, operating safely under standard 120V wall power, and meeting all relevant standards such as IEC 62368-1 for electrical safety and ISO/IEC 42001 for responsible AI use. These requirements ensure that Mr-r Mr-r remains reliable, safe, and highly user-centric.

To achieve its goals, Mr-r Mr-r leverages a combination of robust hardware and flexible software. A Raspberry Pi 4 Model B serves as the central processor, selected for its affordability, Linux compatibility, and strong community support. The display integrates a 32-inch OLED TV behind an acrylic two-way mirror, combined with a 10-point infrared touch frame for seamless interaction. AI functionality is powered by OpenAI's GPT-4 Turbo API, enabling responsive, context-aware conversations. Audio input and output are handled through a microphone and a 2.1 channel sound bar, ensuring high-quality communication between the user and the system.

Looking ahead, Mr-r Mr-r offers a strong foundation for future improvements and broader applications. Additional features like smart home integration, health monitoring, or expanded AI customization could transform it into a full personal assistant for home or office environments. With minor adaptations, the core system could also be expanded into fields such as healthcare (e.g., patient self-monitoring stations) or hospitality (e.g., interactive hotel room mirrors). By combining intuitive design with scalable technology, Mr-r Mr-r is positioned not just as a helpful daily tool but as a platform with the potential to evolve alongside user needs and emerging markets.

REFERENCES

The authors acknowledge the use of ChatGPT in the preparation of this assignment for phrasing and proofreading.