**Night Life - A Smart Thermal Car Camera for Enhanced Vehicle Safety**

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Night driving can be dangerous due to poor visibility and lighting conditions [1]. To address this issue, a smart thermal car camera called Night Life application has been proposed to help drivers detect road hazards in total darkness. The device uses thermal imaging to detect heat-emitting objects, such as vehicles, people, and animals, and alerts the user accordingly. Additionally, it functions as a regular dash camera, recording high-resolution videos that can be accessed through the Night Life application.

Over 36,000 fatalities in motor vehicle crashes in 2019 Vehicle safety raises a significant concern that needs to be addressed. Night driving poses additional challenges due to reduced visibility, increasing the risk of accidents and inability to detect potential hazards in the dark. Night Life targets commuters who drive long distances, particularly those in rural areas, by improving vehicle safety and providing enhanced visibility regardless of light or weather conditions [2].

The Night Life camera was developed based on the software development life cycle (SDLC) model with a focus on agile development practices. This process includes requirements gathering, design, implementation, testing, and maintenance. The camera's technical requirements and necessary features were identified in the requirements gathering phase, and hardware and software components were selected in the design phase. A user interface was designed at this design phase. In the implementation phase, the Night life application prototype was designed, and user feedback and evaluation were analyzed to modify the design. To ensure accuracy and reliability, the camera was tested in various simulated scenarios during the testing stage, such as different lighting, weather, and types of potential hazards, including pedestrians, animals, and other vehicles.

Using the SDLC model and agile approach of iteration for the conceptualization phase, the Night Life smart thermal car camera has shown significant and promising results. Positive feedback was obtained, suggesting that Night Life could enhance vehicle safety during night-time driving, particularly for long-distance commuters in rural areas. The system's ability to detect potential hazards on the road and alert drivers in total darkness was particularly noteworthy, while the regular dash camera feature was an effective tool for recording high-resolution videos.  
  
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