**Data Gathering**

**Data Sources**

**User Surveys**

* **Target Audience**: Mechanics and drivers.
* **Data Collected**:
  + Descriptions of sounds encountered, including frequency and context.
  + Instances of dashboard warning lights and user responses.

**Expert Interviews**

* **Participants**: Automotive mechanics and car companies.
* **Method**: Semi-structured interviews conducted either in person or via whatsapp.
* **Data Collected**:
  + Detailed interpretations of various car sounds.
  + Common dashboard signs and expert recommendations on handling them.

**Data Analysis**

**Quantitative Analysis**

* Analyze survey results to identify frequently reported sounds and dashboard signs.

**Qualitative Analysis**

* Conduct thematic analysis on interview and focus group transcripts to extract key insights regarding sound and sign interpretation.

**Findings**

**6.1. Common Car Sounds and Interpretations**

| **Sound** | **Interpretation** |
| --- | --- |
| Knocking/Pinging | Potential engine issues, often related to fuel quality or timing. |
| Squealing | Worn brake pads or serpentine belts. |
| Hissing | Coolant leak or vacuum issue. |
| Grinding | Brake problems or transmission issues. |
| Clicking | Issues with the starter or electrical problems. |
| Rattling | Loose components or exhaust issues. |

**6.2. Dashboard Warning Signs and Interpretations**

| **Warning Light** | **Interpretation** | **Recommended Action** |
| --- | --- | --- |
| Check Engine Light | General engine problem; requires diagnostics. | Get the vehicle scanned for error codes. |
| Oil Pressure Warning | Low oil pressure; potential engine damage. | Check oil level immediately. |
| Battery Warning Light | Charging system issue; battery may be failing. | Check battery and alternator. |
| ABS Warning Light | Problem with the anti-lock braking system. | Have the ABS system inspected. |
| Tire Pressure Warning | Low tire pressure; check tire conditions. | Inflate tires to recommended pressure. |
| Temperature Warninga | Engine overheating; check coolant levels. | Stop the vehicle and check coolant. |

**Conclusion**

The data gathering process has successfully identified a range of car sounds and dashboard signs, along with their interpretations. This information is crucial for developing a reliable and user-friendly mobile application.