**Class Diagram Overview**

1. **ShortenLinkController**
   * **Methods:**
     + ShortenLink(ShortenLinkRequest request): Task<IActionResult>
     + GetShortenedLinks(): Task<IActionResult>
   * **Associations:**
     + Uses ILinkShortenerService
2. **ILinkShortenerService**
   * **Methods:**
     + ShortenLink(string url): ShortenedLink
     + GetShortenedLinks(): List<ShortenedLink>
3. **LinkShortenerService** (Implements ILinkShortenerService)
   * **Methods:**
     + ShortenLink(string url): ShortenedLink
     + GetShortenedLinks(): List<ShortenedLink>
   * **Associations:**
     + Uses IShortenedLinkRepo
4. **IShortenedLinkRepo**
   * **Methods:**
     + AddShortenedLink(ShortenedLink link): void
     + GetAllShortenedLinks(): List<ShortenedLink>
5. **ShortenedLinkRepo** (Implements IShortenedLinkRepo)
   * **Methods:**
     + AddShortenedLink(ShortenedLink link): void
     + GetAllShortenedLinks(): List<ShortenedLink>
6. **ShortenedLink**
   * **Attributes:**
     + Id: int
     + OriginalUrl: string
     + ShortUrl: string
7. **ShortenLinkRequest**
   * **Attributes:**
     + url: string
8. **ResponseMessageSchema**
   * **Attributes:**
     + Message: string
     + Data: object

**Relationships**

* **Controller to Service**: The ShortenLinkController uses ILinkShortenerService.
* **Service to Repository**: The LinkShortenerService uses IShortenedLinkRepo for data operations.
* **Request and Response**: ShortenLinkRequest is passed to the controller, and ResponseMessageSchema is used to format the response.