**Defect Removal Efficiency (DRE) Report**

**1.Introduction**

Defect Removal Efficiency (DRE) is a crucial metric in software development for assessing testing quality and software reliability. It measures the effectiveness of the testing and Quality Assurance (QA) process in identifying and fixing defects before product release. A higher DRE value indicates better defect detection capabilities, leading to improved software quality and a reduced rate of issues encountered by end users.

缺陷消除效率 (DRE) 是软件开发中评估测试质量和软件可靠性的重要指标。它衡量测试和质量保证 (QA) 流程在产品发布前识别和修复缺陷的有效性。DRE 值越高，缺陷检测能力越强，从而可以提高软件质量并降低最终用户遇到问题的概率。

**2.DRE Calculation Method**

DRE is calculated using the following formula:

**DRE(%) =[Total Defects Found in Testing /(Total Defects Found in Testing + Total Defects Found in Production)]x100%**

And we know that:

**Defects found before release**: The number of defects identified and fixed during the software testing phase.

**Defects found after release**: The number of defects discovered in the production environment after the software has been deployed.

DRE 使用以下公式计算：

DRE(%) =[测试中发现的缺陷总数/(测试中发现的缺陷总数 + 生产中发现的缺陷总数)]x100%

并且我们知道：

发布前发现的缺陷：在软件测试阶段发现并修复的缺陷数量。

发布后发现的缺陷：软件部署后在生产环境中发现的缺陷数量。

**3.DRE Calculation in the Project**

In our project, we collected defect data from both the testing phase and post-release environment, and we found following defects:

**Defects found during testing**: 160

**Defects found after release**: 40

So we using the DRE formula to get the defect removal efficiency is:

DRE=160/(160+40)×100%=80%

After one iteration, we attempted to fix the 40 defects identified in the first round. Among them, 15 were successfully fixed, while 25 remained unresolved.

So we using the DRE formula to get the defect removal dfficieny is:

DRE2=(160+15)/(160+15+25)x100%=87.5%

在我们的项目中，我们从测试阶段和发布后环境中收集了缺陷数据，并发现了以下缺陷：

测试期间发现的缺陷：160

发布后发现的缺陷：40

因此我们使用DRE公式得到的缺陷去除效率为：

DRE=160/(160+40)×100%=80%

经过一次迭代后，我们尝试修复第一轮发现的40个缺陷。其中15个成功修复，而25个仍未解决。

因此我们使用DRE公式得到的缺陷去除效率为：

DRE2=(160+15)/(160+15+25)x100%=87.5%

**4.DRE Evaluation**

According to the 2024 benchmark data of China’s software industry regulations for DRE, we know that:

DRE value in **70%-80%** is Average level.

DRE value in **85%-90%** is Excellent level.

DRE value in **95%+** is Top-tier quality control.

Our project with a DRE value of 87.5%, we think our testing and QA processes have performed well in defect detection. However, 12.5% of defects were not identified before release .But we still has work for our project’s improvement.

4.DRE 评估

根据中国软件行业法规对 2024 年 DRE 的基准数据，我们知道：

DRE 值在 70%-80% 为一般水平。

DRE 值在 85%-90% 为优秀水平。

DRE 值在 95% 以上为顶级质量控制。

我们的项目的 DRE 值为 87.5%，我们认为我们的测试和 QA 流程在缺陷检测方面表现良好。然而，12.5% 的缺陷在发布前未被发现。但我们的项目仍有改进工作要做。

图表, 饼图

AI 生成的内容可能不正确。

**5.Improvement**

To further enhance DRE, we‘re plan to implementing the following jobs:

**1.Strengthen Code Reviews**: Conduct more rigorous code reviews during development to identify potential defects early.

**2.Improve User Testing Coverage**: Expand user testing scenarios, particularly for high-risk functionalities, to simulate real-world use cases.

**3.Strengthen Performance Testing**: Address defects related to load, data processing, and other performance-related issues before release.

为了进一步增强 DRE，我们计划做一下工作：

1.加强代码审查：在开发过程中进行更严格的代码审查，以尽早发现潜在缺陷。

2.提高用户测试覆盖率：扩展用户测试场景，特别是针对高风险功能，以模拟真实用例。

3.加强性能测试：在发布之前解决与负载、数据处理和其他性能相关问题相关的缺陷。