基于MPXJ的\*.mpp文件信息读写的JAVA桌面应用——Mini Project

**测 试 用 例**

小组成员：

SY1506104 刘克瑞

SY1506106 詹鹏飞

SY1506114 陈 阳

SY1506115 彭柯宾

文件修改记录

| 修改日期 | 版本 | 修改页码、章节、条款 | 修改描述 | 作者 |
| --- | --- | --- | --- | --- |
| 2016.5.25 | 1.0 | 全部 | 初始编写 | 詹鹏飞 |
|  |  |  |  |  |
|  |  |  |  |  |

目录

[测试用例 4](#_Toc452069295)

[用例101 读取\*.mpp文件 4](#_Toc452069296)

[用例102 修改任务名称 5](#_Toc452069297)

[用例103 修改任务开始时间 6](#_Toc452069298)

[用例104 修改任务结束时间 7](#_Toc452069299)

[用例105 修改前置任务 8](#_Toc452069300)

[用例106 修改任务资源名称 9](#_Toc452069301)

[用例107 生成任务甘特图 10](#_Toc452069302)

[用例108 拖拽甘特图，同步到任务表中 11](#_Toc452069303)

[用例109 生成任务量直方图 12](#_Toc452069304)

[用例110 生成任务报告 13](#_Toc452069305)

[用例111 保存\*.mpp为\*.mpx文件 14](#_Toc452069306)

[用例112 另存为\*.mpx文件 15](#_Toc452069307)

[用例113 用户界面测试 16](#_Toc452069308)

[用例114 进行性能测试 17](#_Toc452069309)

# 测试用例

## 用例101 读取\*.mpp文件

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 读取\*.mpp文件 | |
| **Brief Description** | 测试人员读取mpp项目 | |
| **Test Data Specification** | 打开mini project程序 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功打开\*.mpp文件 | |
| **Steps(1)** | 点击菜单→打开 |
| **Steps(2)** | 选择一个\*.mpp文件 |
| **Steps(3)** | \*.mpp文件内容正确的显示在界面中 |
| **Test Oracle** | 观察是否在界面中有打开的mpp文件 |
| **Specific Alternative Flows(Test Sequence)** | 选取一个\*.mpp文件，若\*.mpp文件格式不符合要求[1] | |
| **RFS** | 3 |
| **Steps(1)** | 弹出错误报告“mpp文件格式不符合要求，不能打开” |
| **Steps(2)** | 恢复到主界面 |
| **Test Oracle** | 观察是否有错误报告 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例102 修改任务名称

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 修改任务名称 | |
| **Brief Description** | 测试人员修改mpp中任务名称 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功修改\*.mpp中任务名称 | |
| **Steps(1)** | 双击想要修改的任务名称所在的单元格 |
| **Steps(2)** | 修改任务名称 |
| **Test Oracle** | 观察到任务名称被修改 |
| **Specific Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例103 修改任务开始时间

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 修改任务开始时间 | |
| **Brief Description** | 测试人员修改mpp中某任务的开始时间 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功修改任务开始时间 | |
| **Steps(1)** | 测试人员双击任务开始时间 |
| **Steps(2)** | 输入年月日 |
| **Test Oracle** | 观察到开始时间被修改为设定时间 |
| **Specific Alternative Flows(Test Sequence)** | 修改任务开始时间 | |
| **RFS** | 1 |
| **Steps(1)** | 测试人员单击开始时间右侧下拉菜单 |
| **Steps(2)** | 选择年月日并单击 |
| **Test Oracle** | 观察到开始时间被修改为设定时间 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例104 修改任务结束时间

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 修改任务结束时间 | |
| **Brief Description** | 测试人员修改mpp中某任务的结束时间 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功修改任务结束时间 | |
| **Steps(1)** | 测试人员双击结束时间 |
| **Steps(2)** | 手动输入年月日 |
| **Test Oracle** | 任务结束时间被修改为设定值 |
| **Specific Alternative Flows(Test Sequence)** | 修改任务结束时间 | |
| **RFS** | 1 |
| **Steps(1)** | 测试人员单击结束时间右侧下拉菜单 |
| **Steps(2)** | 选择年月日并单击 |
| **Test Oracle** | 任务结束时间被修改为设定值 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例105 修改前置任务

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 修改前置任务 | |
| **Brief Description** | 测试人员修改某任务的前置任务 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功修改某任务的前置任务 | |
| **Steps(1)** | 测试人员单击某任务的“前身”栏 |
| **Steps(2)** | 输入身为其前身任务的任务序号 |
| **Test Oracle** | 观察到序号所示任务变为其前置任务 |
| **Specific Alternative Flows(Test Sequence)** | 输入前置任务序号，但此序号并不存在 | |
| **RFS** | 2 |
| **Steps(1)** | 输入的前身序号并不存在 |
| **Steps(2)** | 弹出错误窗口“不存在此任务” |
| **Steps(3)** | 恢复到单击前身的状态之前 |
| **Test Oracle** | 观察到会弹出错误窗口以及界面恢复原样 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例106 修改任务资源名称

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 修改任务资源名称 | |
| **Brief Description** | 测试人员修改任务的资源名称 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功修改任务的资源名称 | |
| **Steps(1)** | 测试人员单击“资源名称”栏 |
| **Steps(2)** | 输入资源名称 |
| **Test Oracle** | 任务资源名称被修改 |
| **Specific Alternative Flows(Test Sequence)** | 修改人物资源名称 | |
| **RFS** | 1 |
| **Steps(1)** | 测试人员双击“资源名称”栏 |
| **Steps(2)** | 在打开的窗口中输入资源名称 |
| **Steps(3)** | 单击“关闭” |
| **Test Oracle** | 任务资源名称被修改 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例107 生成任务甘特图

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 生成任务甘特图 | |
| **Brief Description** | 测试人员根据任务属性生成任务的甘特图 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常，以及任务属性无误 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功生成任务甘特图 | |
| **Steps(1)** | 测试人员单击甘特图按键 |
| **Steps(2)** | 系统生成甘特图并显示出来 |
| **Test Oracle** | 观察到系统生成的甘特图 |
| **Specific Alternative Flows(Test Sequence)** | 生成甘特图失败 | |
| **RFS** | 2 |
| **Steps(1)** | 某关键属性为空 |
| **Steps(2)** | 系统弹出错误窗口“属性值不能为空” |
| **Test Oracle** | 观察到有弹出错误提示窗口 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例108 拖拽甘特图，同步到任务表中

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 拖拽甘特图与任务表同步 | |
| **Brief Description** | 测试人员拖拽甘特图，任务表中的起止时刻随之变化 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常，生成甘特图无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功拖拽甘特图使得任务表与之同步 | |
| **Steps(1)** | 拖拽某任务的甘特图 |
| **Steps(2)** | 任务表中的属性随之变化 |
| **Test Oracle** | 观察任务表中属性有变化 |
| **Specific Alternative Flows(Test Sequence)** | 拖拽甘特图使得起始时刻比现在时刻早 | |
| **RFS** | 1 |
| **Steps(1)** | 拖拽甘特图使起始时刻提前于现在时刻 |
| **Steps(2)** | 弹出警告框“将此任务设为提前开始” |
| **Steps(3)** | 任务表中属性随之变化 |
| **Test Oracle** | 观察到有警告框弹出，以及属性变化正确 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例109 生成任务量直方图

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 读取\*.mpp文件 | |
| **Brief Description** | 测试人员通过各任务属性值生成直方图来体现各资源任务量 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功生成直方图 | |
| **Steps(1)** | 测试人员单击“生成直方图” |
| **Steps(2)** | 系统生成直方图并提示出来 |
| **Test Oracle** | 观察到直方图生成 |
| **Specific Alternative Flows(Test Sequence)** | 资源未分配使得直方图生成失败 | |
| **RFS** | 1 |
| **Steps(1)** | 测试人员单击“生成直方图” |
| **Steps(2)** | 系统提示“资源未分配” |
| **Steps(3)** | 恢复到之前的界面 |
| **Test Oracle** | 观察到有错误窗口弹出 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例110 生成任务报告

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 生成任务报告 | |
| **Brief Description** | 测试人员点击按钮生成任务的具体文字报告 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功生成任务报告 | |
| **Steps(1)** | 点击“生成报告” |
| **Steps(2)** | 在界面显示出该任务的文字报告 |
| **Test Oracle** | 观察到界面下方有对应各任务的文字报告 |
| **Specific Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例111 保存\*.mpp为\*.mpx文件

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 保存\*.mpp为\*.mpx文件 | |
| **Brief Description** | 测试人员保存mpp项目为.mpx文件 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功保存\*.mpp文件为.mpx文件 | |
| **Steps(1)** | 单击菜单→保存 |
| **Steps(2)** | mpp文件成功保存 |
| **Test Oracle** | 观察到文件成功保存 |
| **Specific Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例112 另存为\*.mpx文件

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 另存为\*.mpx文件 | |
| **Brief Description** | 测试人员另存mpp项目为别的文件 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员成功另存\*.mpx文件 | |
| **Steps(1)** | 单击菜单→另存为 |
| **Steps(2)** | 在弹出窗口中输入新的名称 |
| **Steps(3)** | 单击确定键另存文件 |
| **Test Oracle** | 在指定目录中多出用户设定名称的mpx文件 |
| **Specific Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例113 用户界面测试

|  |  |  |
| --- | --- | --- |
| Test Case Specification | | |
| **Name** | 用户界面测试 | |
| **Brief Description** | 测试人员通过使用各种界面操作、快捷键等等测试用户界面是否正常 | |
| **Test Data Specification** | 打开mini project程序  系统读取.mpp文件无异常 | |
| **Tester** | 测试人员 | |
| **Dependency** | 无 | |
| **Test Setup** | 无 | |
| **Name** |  |
| **Brief Description** |  |
| **Basic Flow(Test Setup)** | **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Basic Flow(Test Sequence)** | 测试人员操作用户界面 | |
| **Steps(1)** | 进行单击、拖动、点击Tab、回车、切换窗口等操作 |
| **Steps(2)** | 软件界面根据操作指示发生变化 |
| **Test Oracle** | 软件界面正确响应操作 |
| **Specific Alternative Flows(Test Sequence)** | 测试人员操作界面中发生错误 | |
| **RFS** | 1 |
| **Steps(1)** | 进行单击、拖动、点击Tab、回车、切换窗口等操作 |
| **Steps(2)** | 系统提示某操作发生错误 |
| **Test Oracle** | 观察有错误窗口弹出 |
| **Global Alternative Flows(Test Sequence)** |  | |
| **Guard Condition** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Bounded Alternative Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |
| **Oracle Verification Flows(Test Sequence)** |  | |
| **RFS** |  |
| **Steps(numbered)** |  |
| **Test Oracle** |  |

## 用例114 进行性能测试

|  |  |  |
| --- | --- | --- |
| *Test Case Specification* | | |
| ***Name*** | *进行性能测试* | |
| ***Brief Description*** | *测试人员对文件操作响应时间进行观测* | |
| ***Test Data Specification*** | *打开mini project程序*  *系统读取.mpp文件无异常* | |
| ***Tester*** | *测试人员* | |
| ***Dependency*** | *无* | |
| ***Test Setup*** | *无* | |
| ***Name*** |  |
| ***Brief Description*** |  |
| ***Basic Flow(Test Setup)*** | ***Steps(numbered)*** |  |
| ***Test Oracle*** |  |
| ***Basic Flow(Test Sequence)*** | *测试人员观测文件操作的响应时间* | |
| ***Steps(1)*** | *打开某\*.mpp文件（另外还有生成任务量直方图、燃烬图、生成任务报告等操作）* |
| ***Steps(2)*** | *观测从打开文件到文件显示的时间* |
| ***Test Oracle*** | *观察到响应时间小于2s* |
| ***Specific Alternative Flows(Test Sequence)*** |  | |
| ***RFS*** |  |
| ***Steps(numbered)*** |  |
| ***Test Oracle*** |  |
| ***Global Alternative Flows(Test Sequence)*** |  | |
| ***Guard Condition*** |  |
| ***Steps(numbered)*** |  |
| ***Test Oracle*** |  |
| ***Bounded Alternative Flows(Test Sequence)*** |  | |
| ***RFS*** |  |
| ***Steps(numbered)*** |  |
| ***Test Oracle*** |  |
| ***Oracle Verification Flows(Test Sequence)*** |  | |
| ***RFS*** |  |
| ***Steps(numbered)*** |  |
| ***Test Oracle*** |  |