**Experiments to understand consistency of repairs by chatGPT.**

**Settings: With bug location but w/o fix comments**

**Prompt:**

*“Consider the following Alloy specification and its inline comments. There is a bug in this specification. Please find the bug and fix it. only provide the entire fixed code without any additional explanation. Do not provide partial solutions.”*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Spec** | **Test Run 1** | **Test Run 2** | **Test Run 3** | **Test Run 4** | **Test Run 5** | **Test Run 6** | **Test Run 7** | **Test Run 8** | **Test Run 9** | **Test Run**  **10** |
| addr1 | Counterexample  found | Counter  example  found | Counter  example  found | Counter  example  found | Counterexample  found | Counter  example  found | Syntax error | Type error | Syntax error | Counterexample  found |
| arr1 | Counterexample found | No Counterexample  found | Syntax error | Syntax error | Counter  example found | Counter  example found | Syntax error | Syntax error | Type error | Counterexample found |
| Balanced  BST1 | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error |
| Bempl1 | Counterexample found | Counterexample found | Counterexample found | Counterexample found | Type error | Counterexample found | Syntax error | Counterexample found | Counterexample found | Counterexample found |
| Cd1\_1 | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error | Syntax error |
| Cv\_inv  \_1\_1 | Syntax error | Type error | Syntax error | Type error | Type error | Type error | Syntax error | Type error | Syntax error | Counterexample found |
| Graphic\_ acyclic\_1 | Type error | Syntax error | Syntax error | Syntax error | Syntax error | No Counterexample found | No Counterexample found | No Counterexample found | No Counterexample found | Type error |
| Its\_inv\_ 1\_01 | Syntax error | Counterexample found | Syntax error | Counterexample found | Counterexample found | Type error | No Counterexample found | Counterexample found | Syntax error | No Counterexample found |
| Production  Inv1\_1 | Syntax error | No Counterexample found | No Counterexample found | Type error | No Counterexample found | Type error | No Counterexample found | Counterexample found | Syntax error | No Counterexample found |
| Student\_inv  \_2\_1 | No Counterexample found | No Counterexample found | Type error | No Counterexample found | Counterexample found | No Counterexample found | No Counterexample found | Counterexample found | No Counterexample found | No Counterexample found |
| Trash\_inv  \_1\_1 | Type error | Syntax error | Syntax error | Syntax error | Syntax error | Type error | Syntax error | Syntax error | Syntax error | Syntax error |