**CHATGPT ANALYSIS RESULTS BASED ON THE BENCHMARK “arepair”**

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| --- | --- | --- | --- | --- | --- | --- |
| **SL** | **Spec** | **(1 ) With fix comment**  **[Asked to satisfy assertion]** | **(2) With bug location but w/o fix comments**  **[No mention of passing assertion]** | **(3) No fault location**  **(No Bug / Fix comment and Loc)**  **[Asked to fix assertion]** | **(4 ) No indication of bug location nor asking to pass the assertions** | **(5) With bug location but w/o fix comments**  **[Mention of passing assertion]** |
| 1 | addr1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 2 | arr1 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | No instance found. Predicate may be inconsistent  (No counterexample found) | Type Error Message Observed | Type Error Message Observed | Instance found. Predicate is consistent  (No counterexample found)  (Compilation Warning Given) |
| 3 | arr2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | Type Error Message Observed | No instance found. Predicate may be inconsistent  (No counterexample found) |
| 4 | balancedBST1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 5 | balancedBST2\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 6 | balancedBST2\_2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 7 | balancedBST2\_3 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Syntax Error  The name "abs" cannot be found. |
| 8 | balancedBST3\_1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 9 | balancedBST3\_2 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 10 | bempl1 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Syntax error at line 17 column 8:  There are 1 possible tokens that can appear here:[ |
| 11 | cd1\_1 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 12 | cd1\_2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 13 | cd2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 14 | ctree1 | Syntax Error in the result provided by ChatGPT  (In first result)  Instance found. Predicate is consistent  (No counterexample found)  (By Manual verification) | Type Error Message Observed | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 15 | dll1\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 16 | dll1\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. | Syntax error  The name "null" cannot be found. |
| 17 | dll2\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 18 | dll2\_2 | Instance found. Predicate is consistent  (No counterexample found)  (ChatGPT provided wrong result) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Syntax error at line 33 column 32: |
| 19 | dll3\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 20 | dll3\_2 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 21 | dll3\_3 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 22 | dll4 | Instance found. Predicate is consistent | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 23 | farmer1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. Predicate is consistent | (Counterexample) Instance found. Predicate is consistent | (Counterexample) Instance found. Predicate is consistent | Syntax Error  The name "item" cannot be found. |
| 24 | fsm1\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | No instance found. Predicate may be inconsistent  (No counterexample found) | (Counterexample) Instance found. Predicate is consistent | (Counterexample) Instance found. |
| 25 | fsm1\_2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | No instance found. Predicate may be inconsistent  (No counterexample found) | No instance found. Predicate may be inconsistent  (No counterexample found) | Syntax error at line 46 column 1: |
| 26 | fsm2 | Instance found. Predicate is consistent  (No counterexample found) | No instance found. Predicate may be inconsistent  (No counterexample found) | No instance found. Predicate may be inconsistent  (No counterexample found) | (Counterexample) Instance found. | No instance found. Predicate may be inconsistent  (No counterexample found) |
| 27 | grade1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 28 | other1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. |
| 29 | student1 | Instance found. Predicate is consistent  (No counterexample found)  (ChatGPT provided wrong result) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 30 | student2\_1 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) |
| 31 | student2\_2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 32 | student3\_1 | Instance found. Predicate is consistent | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 33 | student3\_2 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 34 | student4 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 35 | student5 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 36 | student6\_1 | Instance found. Predicate is consistent  (No counterexample found)  (ChatGPT provided wrong result) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 37 | student6\_2 | (Counterexample) Instance found.  (Manual verification and ChatGPT Results) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 38 | student7\_1 | Instance found. Predicate is consistent  (No counterexample found)  (ChatGPT provided wrong result) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 39 | student7\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed | (Counterexample) Instance found. | Type Error Message Observed |
| 40 | student8 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 41 | student9 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 42 | student10 | Instance found. Predicate is consistent  (No counterexample found)  (ChatGPT provided wrong result) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 43 | student11 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 44 | student12\_1 | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Type Error Message Observed |
| 45 | student12\_2 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 46 | student13 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 47 | student14\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Warning displayed) Instance found. Predicate is consistent | (Counterexample) Instance found. | Type Error Message Observed |
| 48 | student14\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 49 | student15 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Warning displayed) Instance found. Predicate is consistent | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 50 | student16 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Syntax error at line 45 column 18:  There are 1 possible tokens that can appear here: |
| 51 | student17\_1 | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Syntax error at line 20 column 15:  There are 1 possible tokens that can appear here: |
| 52 | student17\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 53 | student18\_1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 54 | student18\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. |
| 55 | student18\_3 | Instance found. Predicate is consistent  (No counterexample found) | Type Error Message Observed | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) | Instance found. Predicate is consistent  (No counterexample found) |
| 56 | student19\_1 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. | Instance found. Predicate is consistent  (No counterexample found) |
| 57 | student19\_2 | Instance found. Predicate is consistent  (No counterexample found) | (Counterexample) Instance found. | (Counterexample) Instance found. | (Counterexample) Instance found. | Type Error Message Observed |