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**Here are the test paths to achieve edge coverage.**

1. **Open\_character\_stream**

Edge Coverage: { (1,2), (1,3), (2,4), (3,4) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | Fname=null | StdIn for fname and return | Null | {Start,1,2,4, end} |
| T2 | Fname = test.txt | Open the file from the path | Null | {Start,1,3,4, end} |

1. **Open\_token\_stream**

Edge Coverage: { (1,2), (1,3), (2,4), (3,4) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | Fname=null | StdIn for fname and return | Null | {Start,1,2,4, end} |
| T2 | Fname = test.txt | Open the file from the path | Null | {Start,1,3,4, end} |

1. **Is\_token\_end**

Edge Coverage: { (1,2), (1,3), (3,4), (3,7), (4,5), (4,6), (7,8), (7,11), (8,9), (8,10),(11,12), (11,13), (13,14), (13,15) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1. | str\_com\_id = 0 res = 60 | false | false | {start,1,3,7,11,13,15,end} |
| T2. | str\_com\_id = 0 res = -1 | true | true | {start,1,2,end} |
| T3. | str\_com\_id = 0 res = 44 | true | true | {start,1,3,7,11,12,end} |
| T4. | str\_com\_id = 2 res = 59 | false | false | {start,1,3,7,8,10,end} |
| T5. | str\_com\_id = 2 res = 10 | true | true | {start,1,3,7,8,9,end} |

1. **Token\_type**

Edge Coverage: { (1,2), (1,3), (3,4), (3,5), (5,6), (5,7), (7,8), (7,9), (9,10), (9,11),(11,12), (11,13), (13,14), (13,15) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | $321xy | 0 | 3 | {start,1,3,5,7,9,11,13,15,end} |
| T2 | ;56xy | 5 | 3 | {start,1,3,5,7,9,11,13,14,end} |
| T3 | #a | 43 | 3 | {start,1,3,5,7,9,11,12,end} |
| T4 | “azd” | 42 | 3 | {start,1,3,5,7,9,10,end} |
| T5 | $567 | 41 | 3 | {start,1,3,5,7,8,end} |

1. **Print\_token**

Edge Coverage: { (1,2), (1,3), (3,4), (3,5), (5,6), (5,7), (7,8), (7,9), (9,10), (9,11),(11,12), (11,13),(11,14) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | 112A | error | error | {start,1,3,5,7,9,11,12,end} |
| T2 | And | Keyword | keyword | {start,1,3,4,,end} |
| T3 | ( | Lparen | Lparen | {start,1,3,5,7,8,end} |

1. **Is\_comment**

Edge Coverage: { (1,2), (1,3) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | ;56xy | true | true | {start,1,2,end} |
| T2 | 56xy | false | false | {start,1,3,end} |

1. **Is\_keyword**

Edge Coverage: { (1,2), (1,3) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | => | true | true | {start,1,2,end} |
| T2 | not | false | false | {start,1,3,end} |

1. **Is\_char\_constant**

Edge Coverage: { (1,2), (1,3) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | #a | true | true | {start,1,2,end} |
| T2 | #ab | false | false | {start,1,3,end} |

1. **Is\_num\_constant**

Edge Coverage: { (1,2), (1,7), (2,3), (2,6), (3,4), (3,5), (4,2) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | 5a5a | false | false | {start,1,2,3,4,2,3,5, end} |
| T2 | 567/0 | True | Never reached | {start,1,2,3,4,2,3,4,2,6, end} |
| T3 | 9 | False | False |  |
| T4 | 99a | True | Never reached | {start,1,2,6, end} |
| T5 | A99 | False | False | {start,1,7, end} |

1. **Is\_str\_constant**

Edge Coverage: { (1,2), (1,7), (2,3), (2,6), (3,4), (3,5), (5,2) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | xy/0 | false | true | {start,1,2,3,5,2,3,5,2,6,end} |
| T2 | x | true | True | {start,1,2,3,5,2,3,4,end} |
| T3 | xx | False | False | {start,1,7,end} |

1. **Is\_identifier**

Edge Coverage: { (1,2), (1,7), (2,3), (2,6), (3,4), (3,5), (4,2) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | 1a | false | true | {start,1,7, end} |
| T2 | A$ | false | false | {start,1,2,3,4,2,3,5,end} |
| T3 | $ | False | Never reached | {start,1,2,3,5,end} |

1. **Print\_spec\_symbol**

Edge Coverage: { (1,2), (1,3), (3,4), (3,5), (5,6), (5,7), (7,8), (7,9), (9,10), (9,11),(11,12) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | ( | Lparen | Lparen | {start,1,7, end} |
| T2 | ) | rparen | rparen | {start,1,2,3,4,2,3,5,end} |
| T3 | [ | Lsquare | Lsquare | {start,1,3,5,6,end} |
| T4 | ] | Rsquare | Rsquare | {start,1,3,5,7,8,end} |
| T5 | ` | Bquote | Bquote | {start,1,3,5,7,9,11,12,end} |
| T6 | , | Comma | comma | {start,1,2,3,4,2,3,5,end} |

1. **Is\_special\_symbol**

Edge Coverage: { (1,2), (1,3), (3,4), (3,5), (5,6), (5,7), (7,8), (7,9), (9,10), (9,11),(11,12), (11,13), (13,14), (13,15) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 | , | True | true | (start,1,3,5,7,9,11,13,14,end} |
| T2 | ` | true | true | {start,1,3,5,7,9,11,12,end} |
| T3 | / | False | True | {start,1,3,5,7,9,10,end} |
| T4 | ] | True | True | {start,1,3,5,7,8,end} |
| T5 | [ | True | True | {start,1,3,5,6,end} |
| T6 | ) | True | True | {start,1,3,4,,end} |
| T7 | ( | True | True | {start,1,2,end} |

1. **Main()**

Edge Coverage: { (1,2), (1,3), (2,6), (3,4), (3,5), (4,6), (6,7), (7,8), (7,9), (8,7) }

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual output | Test Path |
| T1 |  |  |  | {start,1,3,4,6,7,8,7,9,end} |