



Example of Search & Exploration Errors

Issue Description

Mod function lambdify bug

Description:

When lambdifying any function of structure like ``expr * Mod(a, b)`` sympy moves the multiplier into the first argument of Mod, like ``Mod(expr * a, b)``, WHEN we specify ``modules=[]``

This is an example from Sympy online shell

...

```
>>> from sympy import Mod, lambdify, symbols
```

```
>>> x, y = symbols('x y')
```

```
>>> expr = -Mod(x, y)
```

```
>>> f = lambdify([x, y], expr)
```

```
>>> f(3, 7)
```

```
-3
```

```
>>> inspect.getsource(f)
```

```
def _lambdifygenerated(x, y):  
    return (-mod(x, y))
```

```
>>> g = lambdify([x, y], expr, modules=[])
```

```
>>> g(3, 7)
```

```
4
```

```
>>> inspect.getsource(g)
```

```
def _lambdifygenerated(x, y):  
    return (-x % y)
```

...

Agent Trajectory

Locagent: search_code_snippet(search_terms="lambdify", modules=[""])

ENV: sympy/utilities/lambdify.py:lambdify
sympy/integrals/risch.py:DifferentialExtension.__repr__...
sympy/integrals/risch.py:Differ

...

Locagent:get_entity_contents(start_entities=["sympy/core/mod.py:Mod", "sympy/utilities/lambdify.py:lambdify"])

ENV:

```
6 | class Mod(Function):
```

```
7 |     """Represents a modulo operation on symbolic  
expressions.
```

```
8 |     Parameters
```

...

```
12 |     p : Expr
```

```
13 |         Dividend.
```

Locagent:explore_tree_structure(start_entities="sympy/utilities/lambdify.py")

ENV: sympy/utilities/lambdify.py

— imports — sympy/utilities/exceptions.py:
SymPyDeprecationWarning

— imports — sympy/core/compatibility.py:is_sequence

Locagent Final Answer:

sympy/utilities/lambdify.py:function: lambdify: line: 177,
sympy/core/mod.py:class: Mod:lines: 6-33

Error Analysis

Insufficient Coverage(T3): The agent missed critical components related to code generation and printing, which directly lead to the bug. Key functions that deal with lambdify's code generation process and Mod's behavior were not explored, resulting in an incomplete error analysis.

Query Formulation Error(T4): The searches used by the agent were too broad and did not focus on the core issue. More targeted searches focusing on specific functions related to Mod and lambdify's internals would have yielded better results and identified the true cause of the issue.