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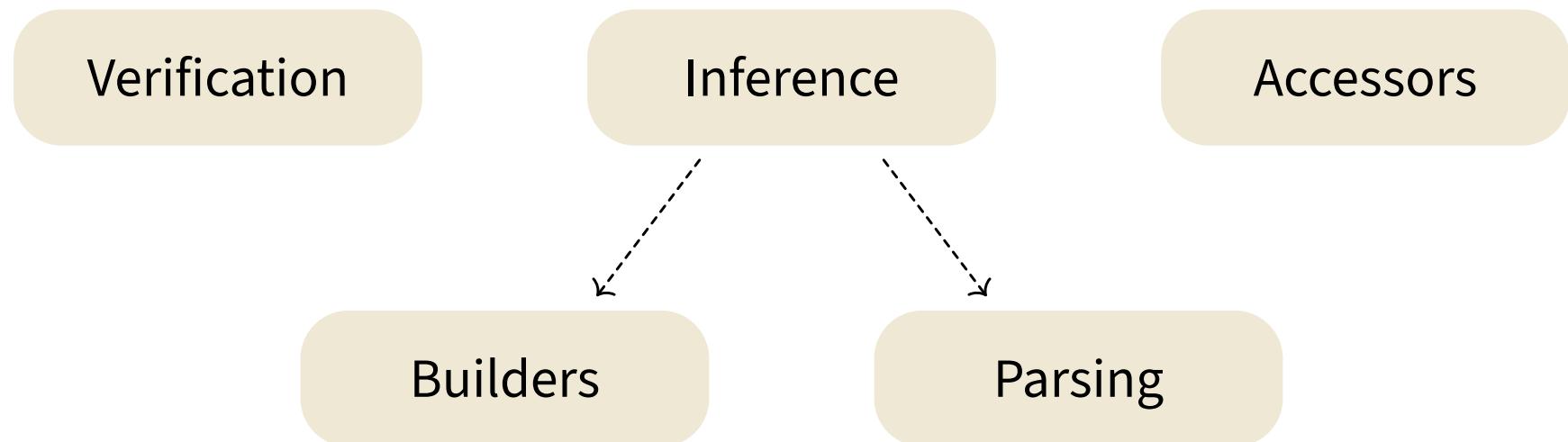
# Defining and Verifying MLIR Operations with Constraints

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# What do operation definitions do?



## Example: arith.addi

```
%0 = arith.addi %1, %2 : i32
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## Constraints for arith.addi

```
class AddIOp:  
    _T: ClassVar = VarConstraint("T", signlessIntegerLike)  
    lhs = operand_def(_T)  
    rhs = operand_def(_T)  
    result = result_def(_T)  
  
    assembly_format = "$lhs ` ,` $rhs attr-dict ` :` type($result)"
```

## Towards more complex constraints

```
class InsertOp:  
    name = "vector.insert"  
  
    _T: ClassVar = VarConstraint("T", AnyAttr())  
    _V: ClassVar = VarConstraint("V", VectorType.constr(_T))  
  
    source = operand_def(VectorType.constr(_T) | _T)  
    dest   = operand_def(_V)  
    result = result_def(_V)  
    ...
```