Getting started with Apache Spark

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Neeraj Bhadani - Bio

- Working as BIG Data Engineer in Expedia Group (Hotels.com Brand)
- More than 10 years of Industry experience.
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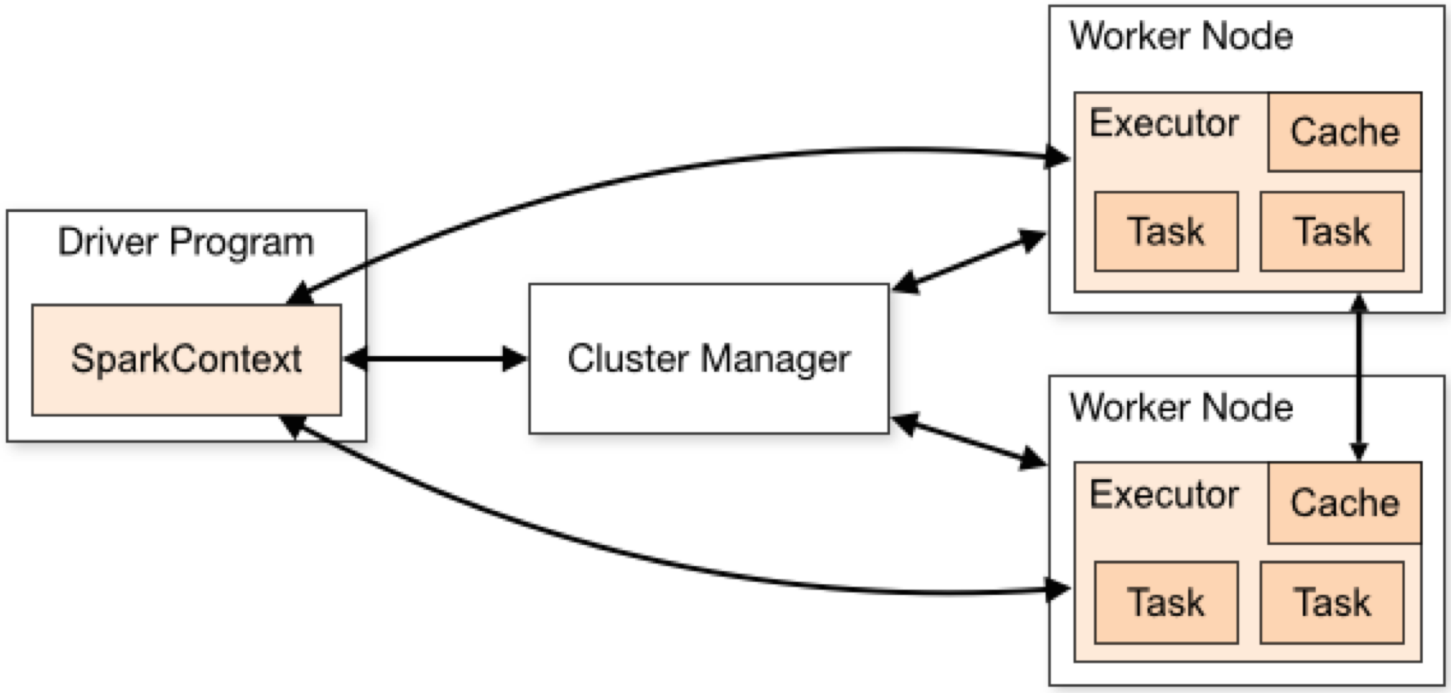
Limitations of MapReduce

- Slow Processing Speed
- Support for Batch Processing only
- Not efficient for iterative processing
- Not Easy to Use
- Unsuitable for trivial operations

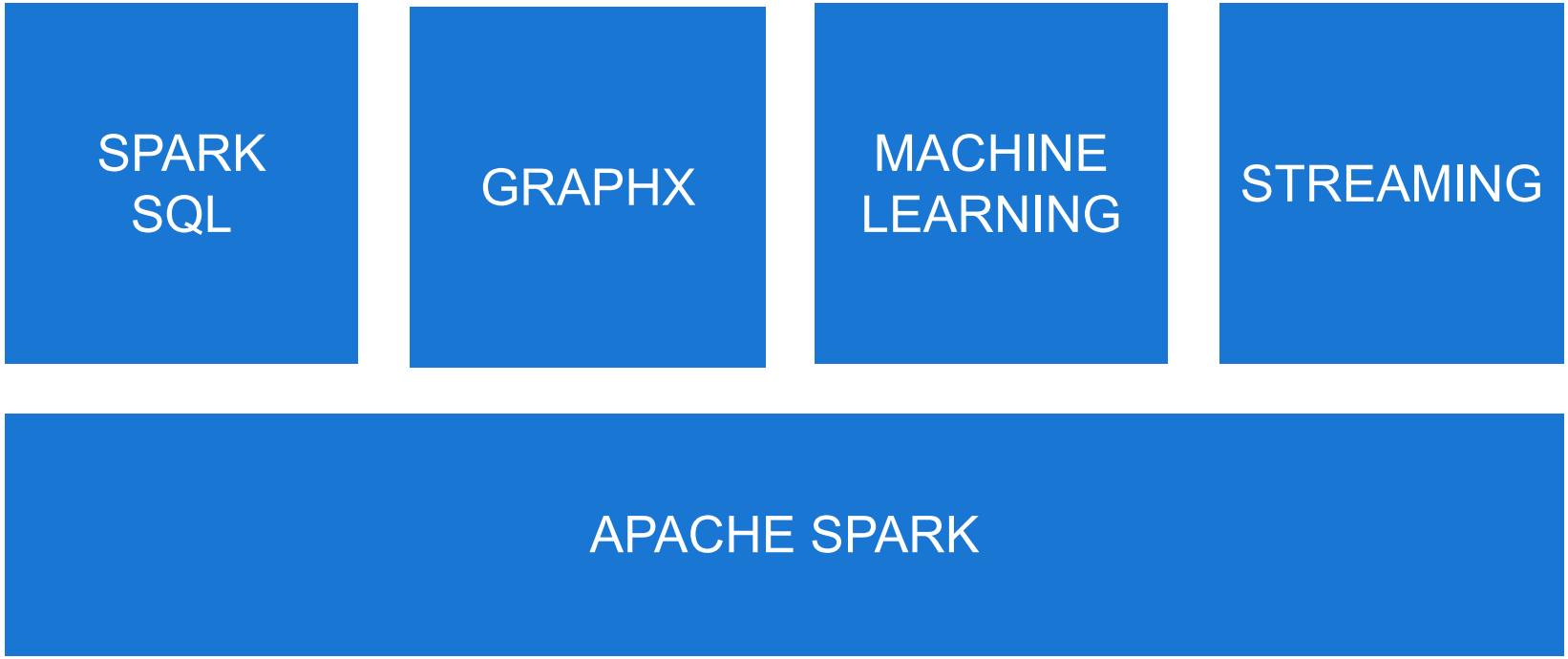
What is Apache Spark

- Initially started at UC Berkeley in 2009
- Fast and general purpose cluster computing system
- Most popular for running Iterative Machine Learning Algorithms
- Provides high level APIs in
  - Java
  - Scala
  - Python
  - R
- Integration with Hadoop and its eco-system and can read existing data

Spark components

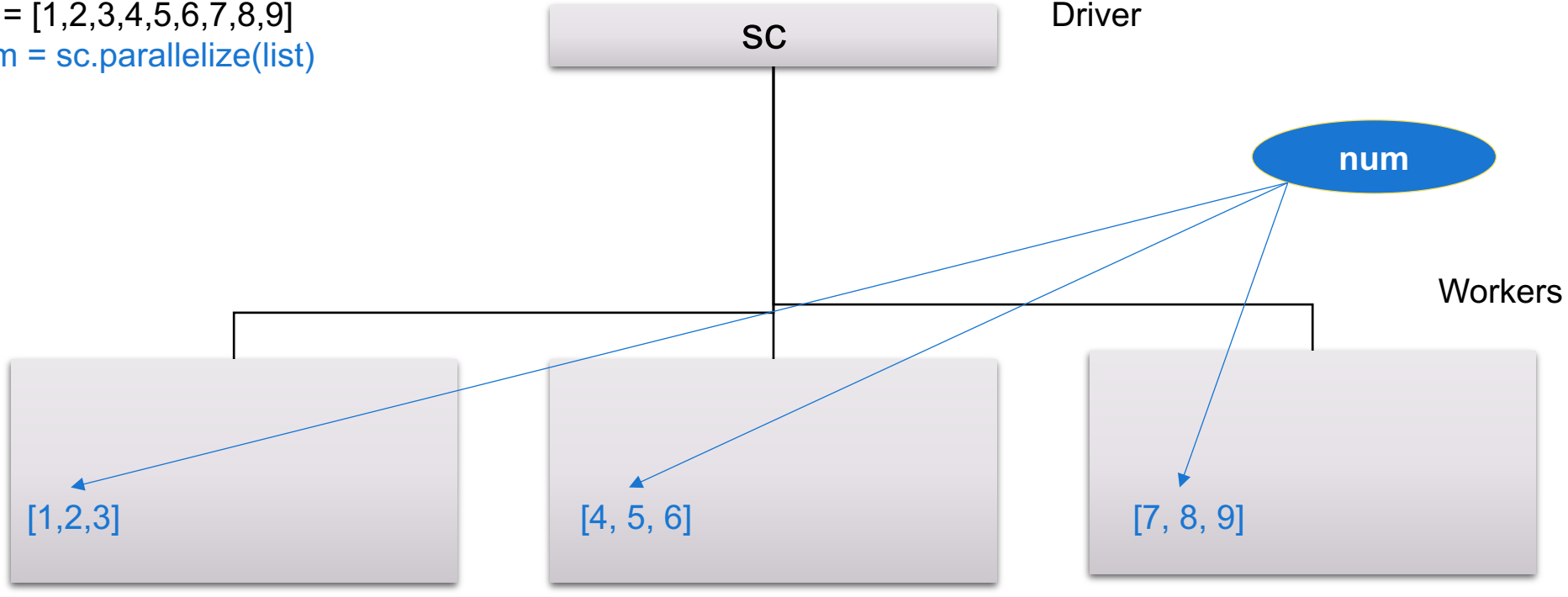


Architecture



RDD : Resilient distributed dataset

list = [1,2,3,4,5,6,7,8,9]
num = sc.parallelize(list)



RDD : Operations

Transformation : lazy

- Map
- Filter
- Join
- Flatmap
- Etc….

Actions : immediately

- Collect
- Count
- First
- Take
- Etc….

Sample code

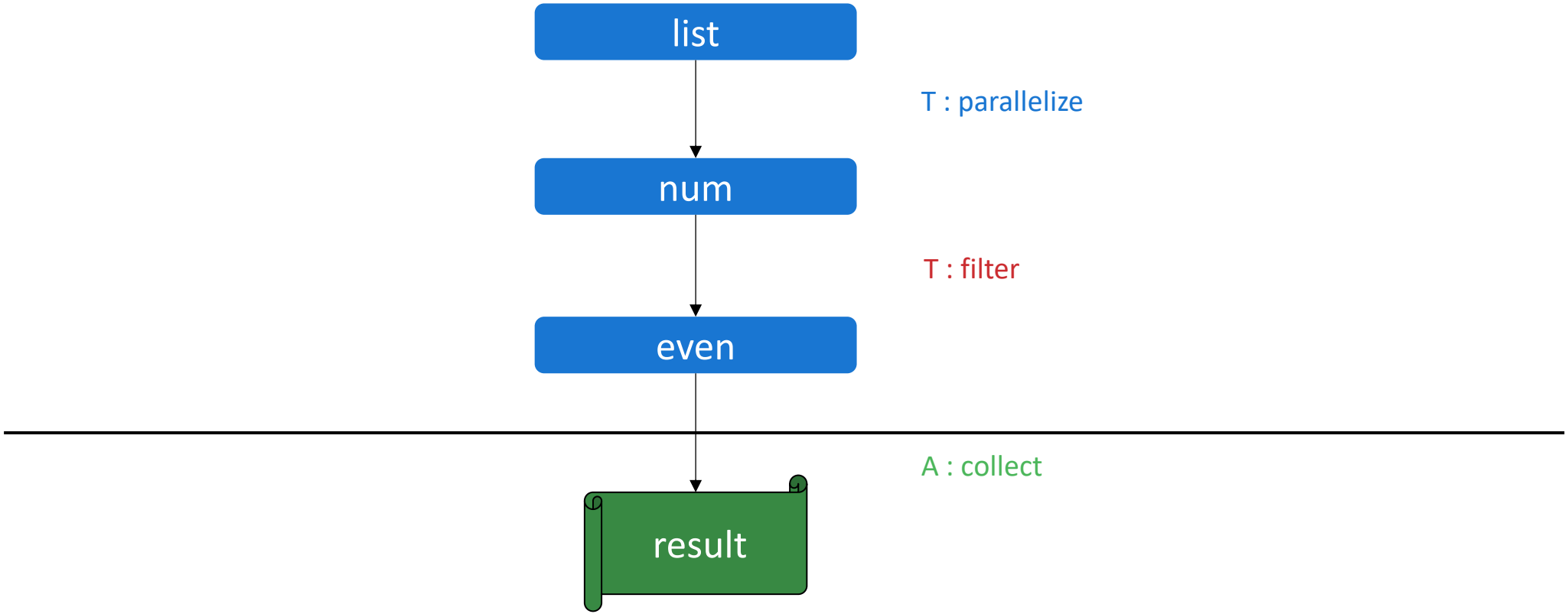
```
# python List
list = [1,2,3,4,5,6,7,8,9]

# Create RDD
num = sc.parallelize(list)

# Filter RDD
even = num.filter(lambda x : x%2 == 0)

# Collect result
even.collect()
```

DAG : Directed Acyclic Graph



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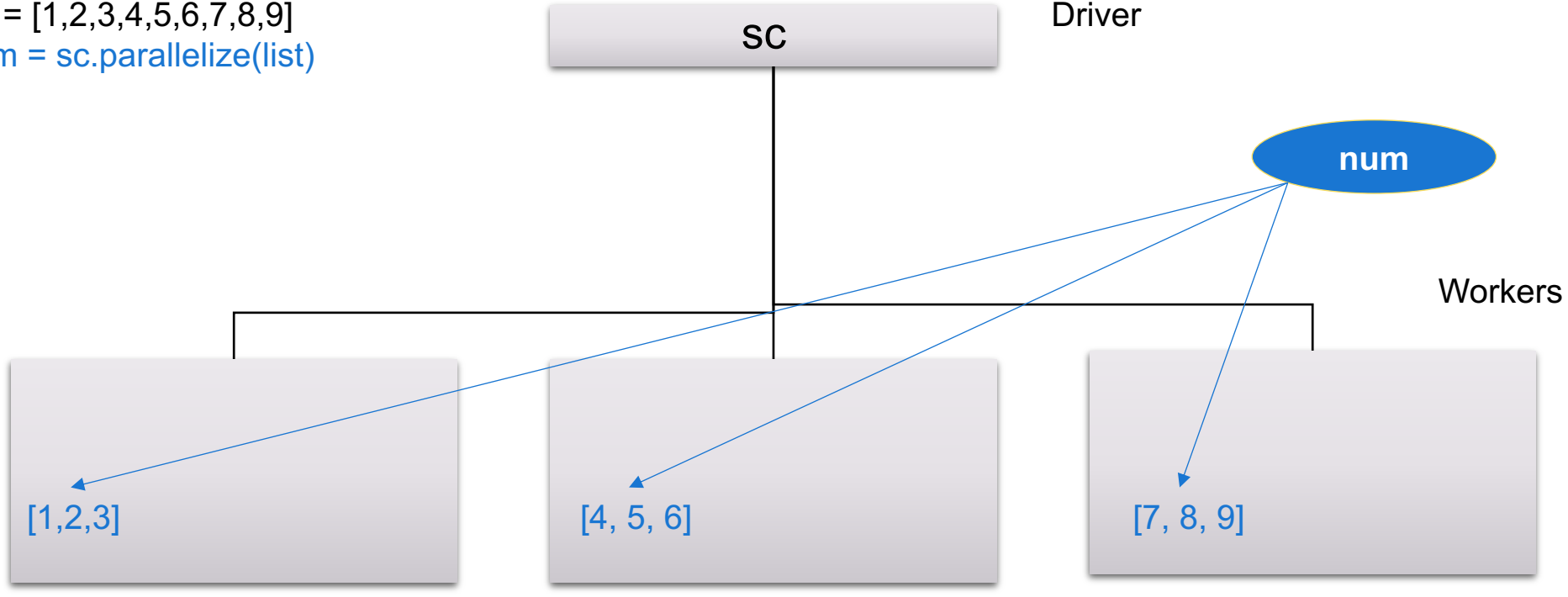

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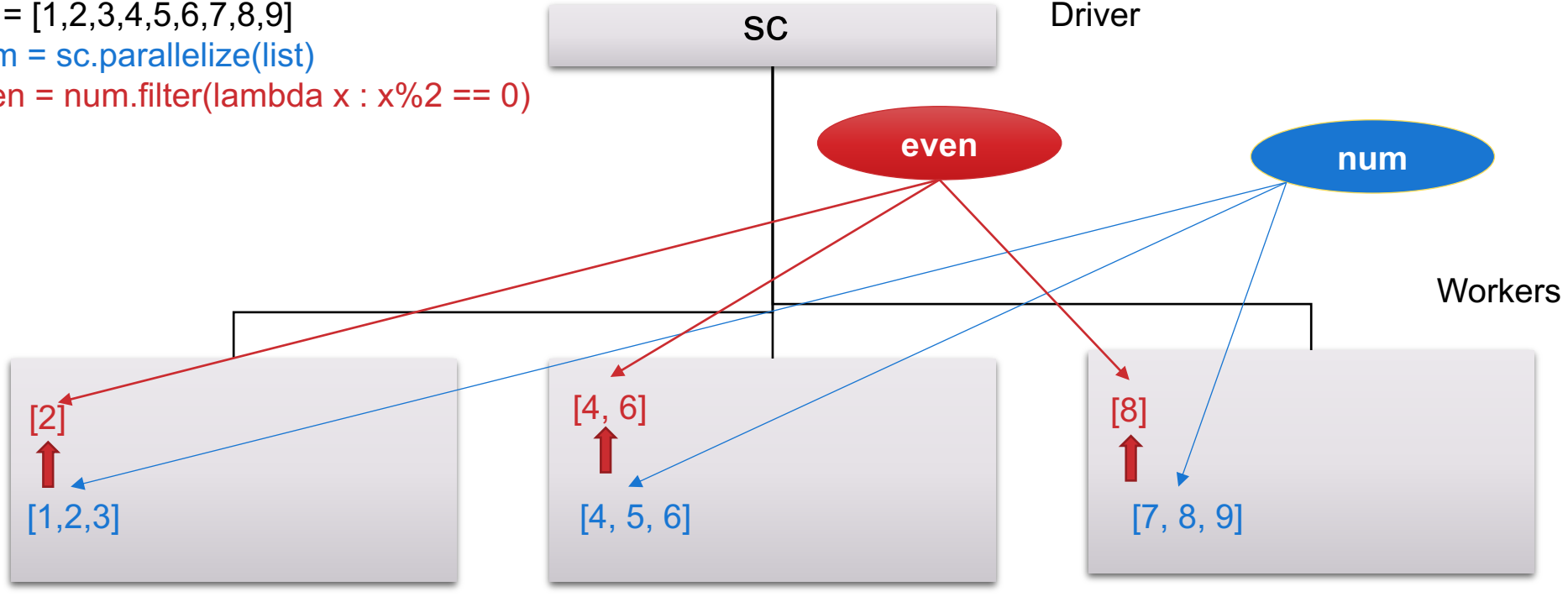

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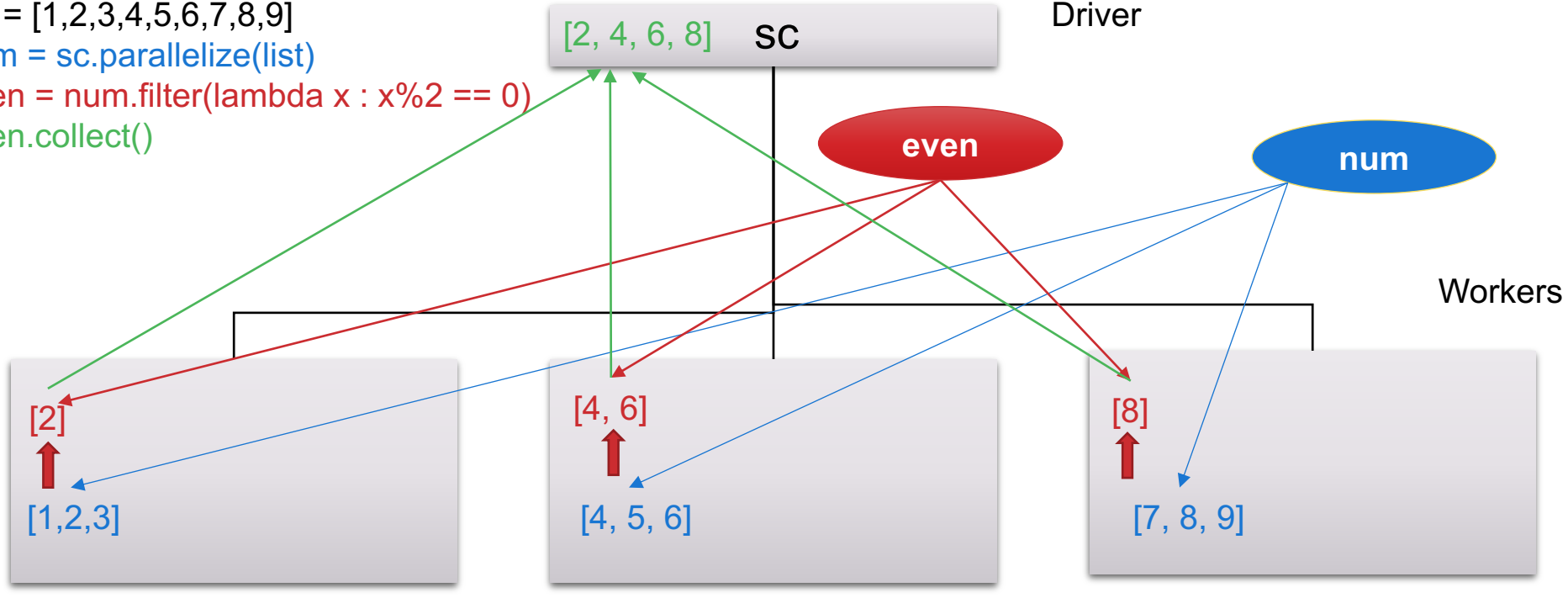
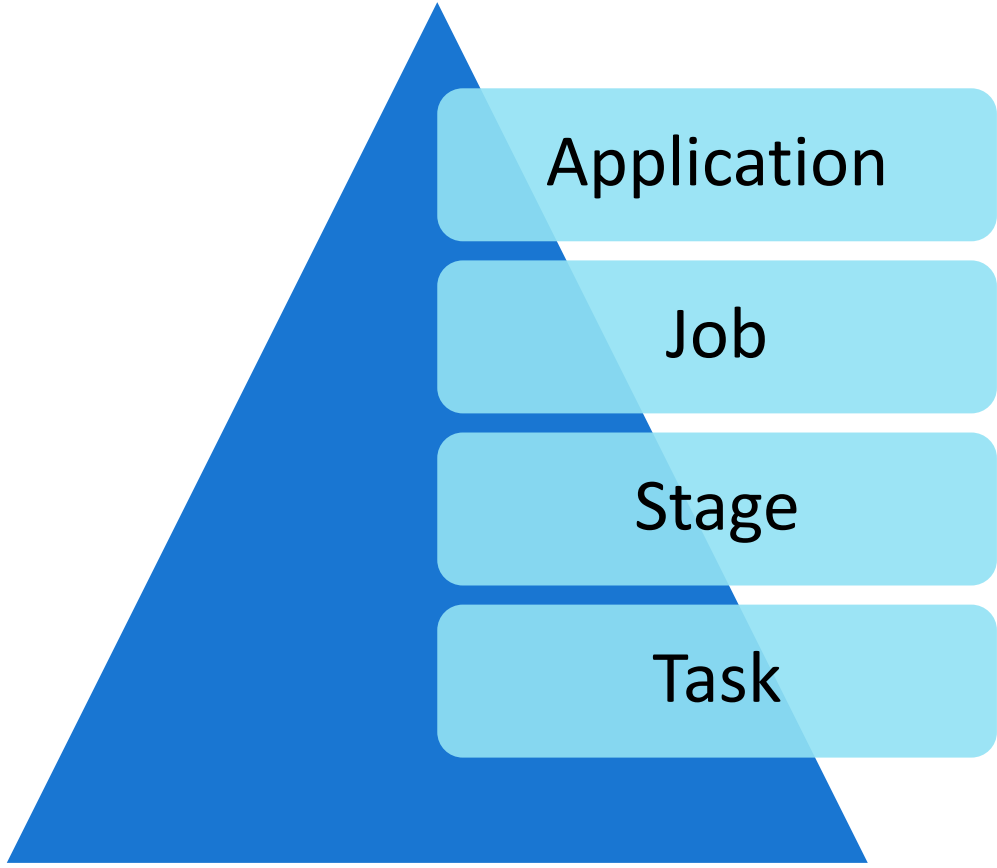


Anatomy of spark job

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Feedback : QR Code

Thank You !