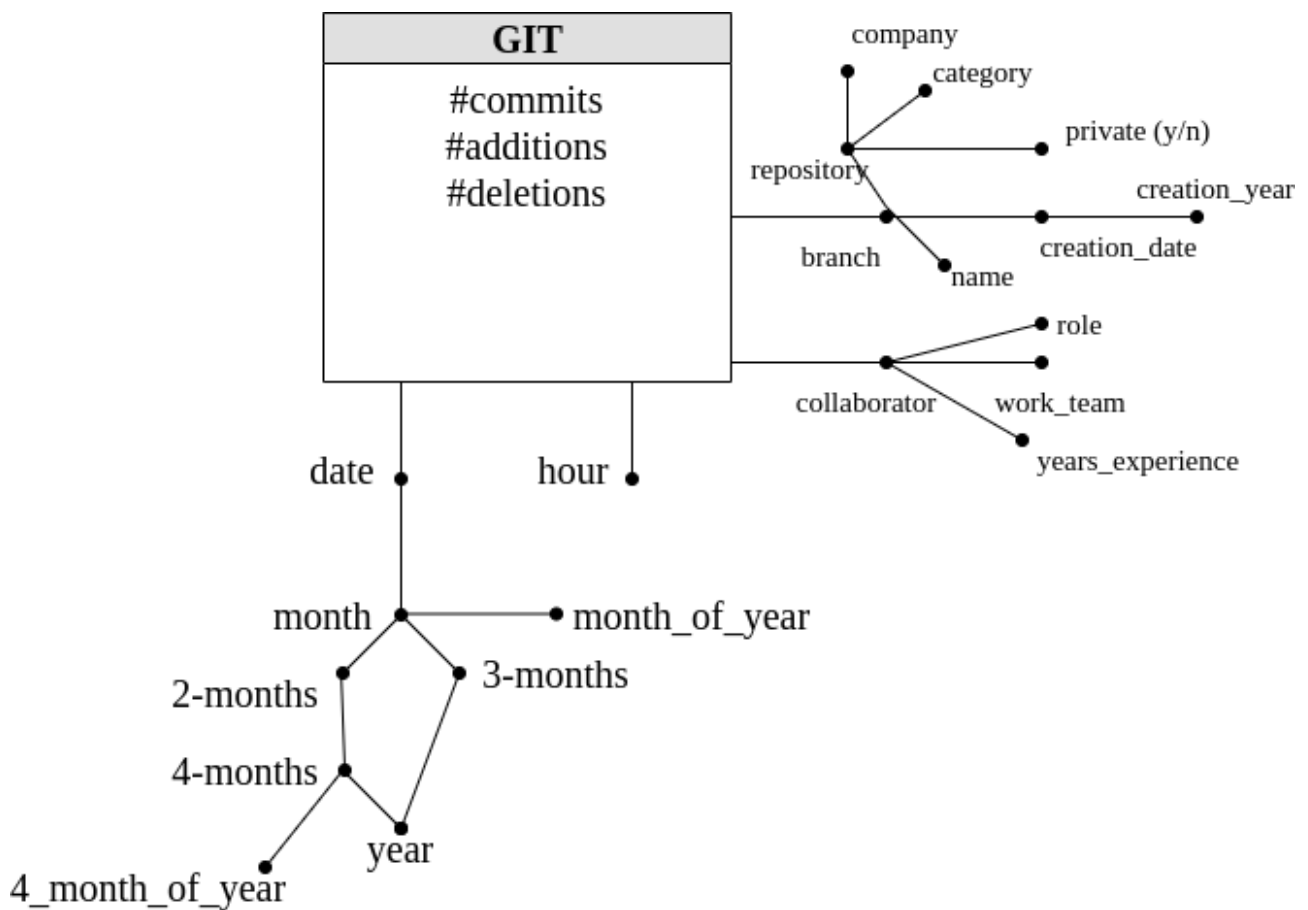


## Data Warehousing

Politecnico di Torino

Versioning services

### Conceptual design



## Logical design

Primary keys are underlined.

GIT (BId, TId, CId, hour, #commits, #additions, #deletions)

BRANCH (BId, branchname, creationdate, creationyear, repositoryname, company, visibility, category, scala, python, java, ...)

TIME (TId, date, month, bimester, 4-months, trimester, year, monthofyear, 4-monthsofyear)

COLLABORATOR (CId, role, yearsexperience, workteam)

## Queries

### Query A

Consider only private repositories. Separately for month and repository name, analyze: the number of commits made on average in a day, the number of commits made on average in a branch, the monthly cumulative number of commits from the beginning of the year.

```
SELECT
    repositoryname, month,
    sum(#commits)/count(distinct date),
    sum(#commits)/count(distinct bid),
    sum(sum(#commits)) over (partition by repositoryname, year
                            order by month rows unbounded preceding)
FROM
    git g, time t, branch b
WHERE
    g.bid = b.bid and g.tid = t.tid
    AND private = True
GROUP BY
    repositoryname, month, year
```

## Query B

Consider data related to repositories which include the 'Scala' language. Separately for branch and work team, analyze: the ratio between the number of additions and the number of deletions, the percentage of additions with respect to the total of the repository the branch belongs to, assign a rank to work teams based on the ratio between the number of additions and the number of deletions, separately for each branch.

```
SELECT
    bid, branchname, repositoryname, workteam,
    sum(#additions)/sum(#deletions),
    sum(#additions)/sum(sum(#deletions))
        over (partition by repository, workteam),
    rank() over (partition by bid
        order by sum(#additions)/sum(#deletions))
FROM
    git g, branch b, collaborator c
WHERE
    g.bid = b.bid and g.cid = c.cid
    and scala_language = true
GROUP BY
    bid, branchname, repositoryname, workteam
```