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CA270 Project Report

Context

In the game World of Warcraft, a mythic+ **dungeon** is an event which 5 players must complete within a certain time limit.
The group consists of 3 **roles**: 1 Tank, 1 Healer and 3 Damage dealers (DPS).
Players can play different **classes** and **specializations** depending on their role, each providing different benefits for the group.
Dungeon **difficulty** starts at "+2" and for each level the difficulty increases by 10% over the last (eg. +10 is 236% harder, +11 is 236 * 1.1 = 259% harder)
Affixes are modifiers on a dungeon that have special effects on how that dungeon is played, these affix combinations change on a weekly basis.

For higher difficulties, the utility and damage capabilities that certain classes bring become extremely important in completing the dungeon in time.
I want to analyse how classes perform at the high end in order to find the best group compositions and to identify if classes have certain niche dungeons in which they excel.

An example of one such dungeon can be found here:
https://raider.io/mythic-plus/season-bfa-1/runs/4830795-16-ataldazar

I used real data which I gathered from the raider.io API here:
https://raider.io/api#!/mythic95plus/get_api_v1_mythic_plus_runs

The data was in a completely different format from my database format, my process for data gathering and cleaning is shown in a Jupyter notebook which can be found here:
https://github.com/adampower48/CA270

Schema

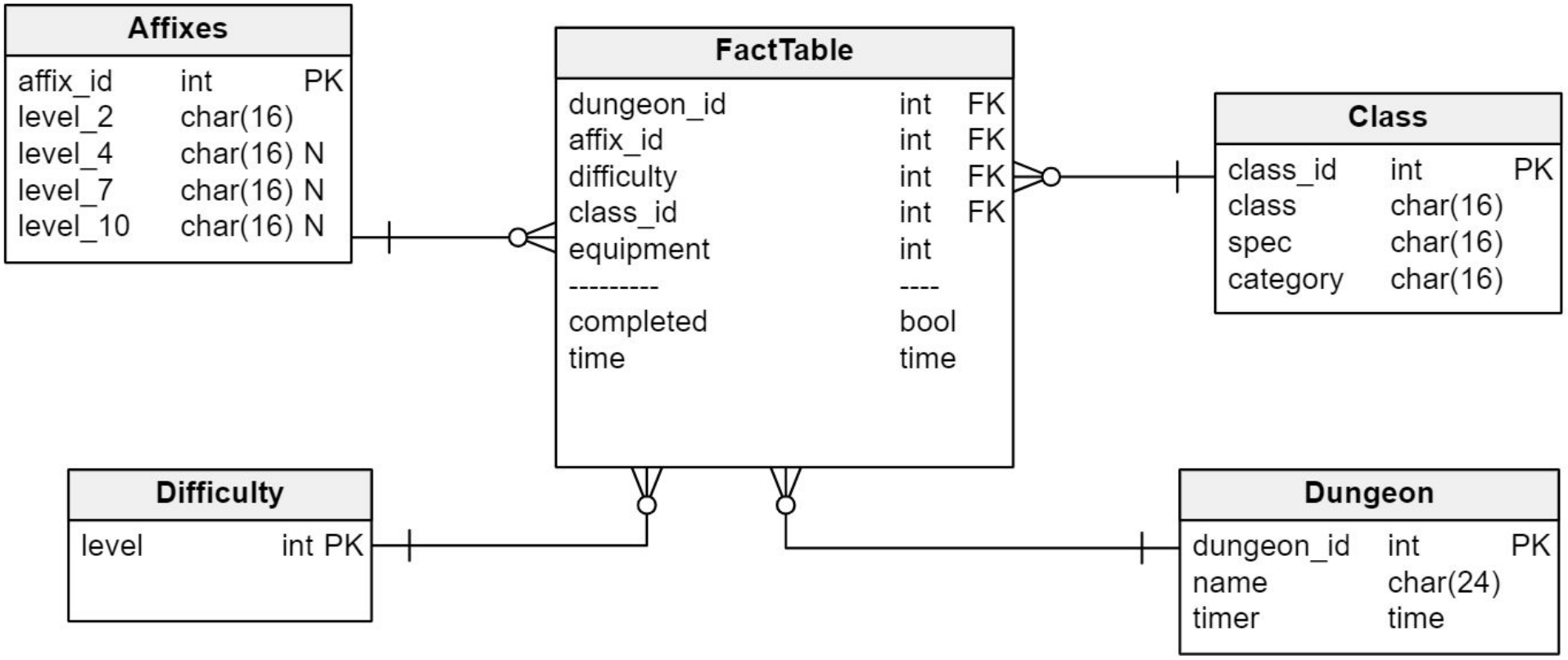
Fact table:
Dimensions:
Class
Dungeon
Difficulty
Affix combination
Measures:
Number Completed (Int)

Class:
Class_id (finite, set of (class, spec))
Class (druid, warrior, mage, etc)
Category (Tank, Healer, Ranged DPS, Melee DPS)
Specialization (arms, protection, fury, etc.)

Dungeon:
Name (Waycrest, Siege, etc., string)
Time limit (30-39 mins, Int seconds)

Difficulty:
Level (2-20+, Integer)
Modifier (10%-600+%, float)

Affixes:
Combination_id (finite, set of 4 affixes)
Level 2+ (Fortified, Tyrannical)
Level 4+ (Teeming, Bursting, etc.)
Level 7+ (Skittish, Necrotic, etc.)
Seasonal (Infested, ?)


Affixes
affix_id int PK
level_2 char(16)
level_4 char(16) N
level_7 char(16) N
level_10 char(16) N
FactTable
dungeon_id int FK
affix_id int FK
difficulty int FK
class_id int FK
equipment int
---
completed bool
time time
Class
class_id int PK
class char(16)
spec char(16)
category char(16)
Difficulty
level int PK
Dungeon
dungeon_id int PK
name char(24)
timer time

OLAP queries

1. Number of dungeons completed for Priests in Atal'dazar for affixes (fortified, bolstering, skittish, infested) on difficulty +16

2. Number of dungeons completed by Tanks for Freehold for all Tyrannical affixes for difficulty >=15

SQL queries

1)

```
SELECT
    base_class AS Class,
    specialisation AS Spec,
    du.name AS Dungeon,
    SUM(num_completed) AS Completed
FROM
    fact_table f
        INNER JOIN
    affix a ON f.affix_id = a.id
        INNER JOIN
    class c ON f.class_id = c.id
        INNER JOIN
    dungeon du ON f.dungeon_id = du.id
        INNER JOIN
    difficulty di ON f.difficulty_id = di.level
WHERE
    base_class LIKE 'Priest'
        AND du.name LIKE 'Atal\'Dazar'
        AND a.id LIKE 'FO_BO_SK_IN'
        AND di.level = 16
GROUP BY base_class , specialisation WITH ROLLUP;
```

Class	**Spec**	**Dungeon**	**Completed**
Priest	Discipline	Atal'dazar	6
Priest		Atal'dazar	6
		Atal'dazar	6

2)

```
SELECT
   du.name AS Dungeon,
   base_class AS Class,
   SUM(num_completed) AS Completed
FROM
   fact_table f
      INNER JOIN
   affix a ON f.affix_id = a.id
      INNER JOIN
   class c ON f.class_id = c.id
      INNER JOIN
   dungeon du ON f.dungeon_id = du.id
      INNER JOIN
   difficulty di ON f.difficulty_id = di.level
WHERE
   c.category LIKE 'Tank'
      AND du.name LIKE 'Freehold'
      AND a.level_2 LIKE 'Tyrannical'
      AND di.level >= 15
GROUP BY du.name , base_class WITH ROLLUP;
```

Dungeon	**Class**	**Completed**
Freehold	Death Knight	54
Freehold	Demon Hunter	18
Freehold	Druid	2
Freehold	Monk	2
Freehold	Paladin	3
Freehold	Warrior	1
Freehold		80
		80