```sql
CREATE TABLE access_groups (
  uuid TEXT NOT NULL,
  group_name TEXT,
  parent_group TEXT,
  PRIMARY KEY(group_name),
  FOREIGN KEY(parent_group) REFERENCES access_groups(uuid)
);
CREATE UNIQUE INDEX group_names ON access_groups(uuid);

CREATE TABLE invitations (
  uuid TEXT,
  inviter TEXT,
  access_group TEXT,
  acceptance_expiration INT,
  access_expiration INT,
  access_limit INT,
  invitees INT,
  plus INT,
  depletes TEXT,
  dos INT, /* degrees of separation */
  deauthorizes INT DEFAULT 0, /* 0, 1, 2 */
  implies TEXT,
  implied INT DEFAULT 0, /* -1, 0, 1 */
  redirect TEXT,
  PRIMARY KEY(uuid),
  FOREIGN KEY(depletes) REFERENCES invitations(uuid),
  FOREIGN KEY(inviter) REFERENCES user_groups(child_group),
  FOREIGN KEY(access_group) REFERENCES access_groups(uuid),
  FOREIGN KEY(implies) REFERENCES invitations(uuid),
  CHECK((implies IS NULL) <> (redirect IS NULL)),
  CHECK(deauthorizes >= 0 AND deauthorizes <= 2),
  CHECK(implied >= -1 AND deauthorizes <= 1)
);
```

uuid

```sql
CREATE TABLE user_groups (
  parents_group TEXT,
  child_group TEXT,
  member TEXT,
  access_group TEXT,
  FOREIGN KEY(member) REFERENCES auths(uuid),
  FOREIGN KEY(access_group) REFERENCES access_groups(uuid)
);
CREATE UNIQUE INDEX shares ON user_groups(child_group);
CREATE INDEX membership ON user_groups(member, access_group);
```

projects

```sql
CREATE TABLE limitations (
  users_group TEXT,
  active BOOLEAN DEFAULT 1,
  until INT,
  spots INT,
  via TEXT,
  depletes BOOLEAN,
  dos INT,
  deauthorizes INT DEFAULT 0,
  FOREIGN KEY(users_group) REFERENCES user_groups(child_group),
  FOREIGN KEY(via) REFERENCES invitations(uuid),
  CHECK(deauthorizes >= 0 AND deauthorizes <= 2)
);
```

implies

active

invitations first topologically

limitations injective to invitations
limitations injective to user groups
all injective to access groups

```
--TODO: why isn't this limitations?
--     I can join invitations with limitations on inviter
--     so depletes as text is redundant since it's also limitations.via
```

lots of info x
it's just easier joins

user groups — invite

root ↓ null spots no depletes
root ↓ null spots kids depletes

kids ↓ ? spots
↓ depletes

↓ 2 spots
his
↓ 1 spot
arc

1 spot ↓
def

root ↓ null spots kids depletes possible?

yes possible

root ↓ 2 spots
↓ no depletes
kids

want but
is not depletes
then how do I
track # spots
left

yes & no rules
seem silly