LearnSphere - Simplified LMS (Key Entities Identified)

1. **Users**
   (**PK**: user_id(int);
   Attributes: email(varchar), full_name(varchar), role(varchar), country_code(char2), created_at(datetime), status(varchar))

2. **UserProfiles**
   (**PK**: user_id(int);
   FK: user_id -> Users.user_id;
   Attributes: headline(varchar), experience_years(int), goals(varchar), language_pref(varchar), timezone(varchar), avatar_url(varchar))

3. **Institutions**
   (**PK**: inst_id(int);
   Attributes: name(varchar), inst_type(varchar), country_code(char2), admin_email(varchar), created_at(datetime))

4. **UserInstitutions**
   (**PK**: ui_id(int);
   FK: user_id -> Users.user_id, inst_id -> Institutions.inst_id;
   Attributes: role(varchar), start_at(datetime), end_at(datetime))

5. **Courses**
   (**PK**: course_id(int);
   Attributes: title(varchar), category(varchar), level(varchar), lang(varchar), price(numeric), currency(char3), status(varchar), created_at(datetime))

6. **CourseInstructors**
   (**PK**: ci_id(int);
   FK: course_id -> Courses.course_id, user_id -> Users.user_id;
   Attributes: role(varchar), rev_share_pct(numeric))

7. **Programs**
   (**PK**: program_id(int);
   Attributes: title(varchar), description(text), status(varchar), created_at(datetime))

8. **ProgramCourses**
   (**PK**: pc_id(int);
   FK: program_id -> Programs.program_id, course_id -> Courses.course_id;
   Attributes: order_idx(int))

9. **Modules**
   (**PK**: module_id(int);
   FK: course_id -> Courses.course_id;
   Attributes: title(varchar), order_idx(int))

10. **Lessons**
   (**PK**: lesson_id(int);
   FK: module_id -> Modules.module_id;
   Attributes: title(varchar), duration_sec(int), content_type(varchar), order_idx(int),
   video_url(varchar))

11. **LessonAssets**
   (**PK**: asset_id(int);
   FK: lesson_id -> Lessons.lesson_id;
   Attributes: asset_type(varchar), url(varchar), lang(varchar))

12. **Enrollments**
   (**PK**: enr_id(int);
   FK: user_id -> Users.user_id, course_id -> Courses.course_id;
   Attributes: source(varchar), enrolled_at(datetime), status(varchar),
   progress_pct(numeric))

13. **LearningEvents**
   (**PK**: le_id(bigint);
   FK: user_id -> Users.user_id, lesson_id -> Lessons.lesson_id;
   Attributes: event(varchar), at_time(datetime), device_id(varchar), ip(inet),
   geo_country(char2))

14. **Quizzes**
   (**PK**: quiz_id(int);
   FK: course_id -> Courses.course_id, lesson_id -> Lessons.lesson_id;
   Attributes: title(varchar), max_score(int), randomized(bool))

15. **Questions**
   (**PK**: q_id(int);
   FK: quiz_id -> Quizzes.quiz_id;
   Attributes: body(text), q_type(varchar), order_idx(int), points(int))

16. **QuestionOptions**
   (**PK**: opt_id(int);
   FK: q_id -> Questions.q_id;
   Attributes: label(text), is_correct(bool))

17. Submissions

    (**PK**: sub_id(int);

    FK: quiz_id -> Quizzes.quiz_id, user_id -> Users.user_id;

    Attributes: submitted_at(datetime), score(numeric), status(varchar), attempt_no(int))

18. SubmissionAnswers

    (**PK**: sa_id(int);

    FK: sub_id -> Submissions.sub_id, q_id -> Questions.q_id;

    Attributes: selected_option_ids(text), text_answer(text), code_url(varchar))

19. Orders

    (**PK**: order_id(int);

    FK: user_id -> Users.user_id;

    Attributes: currency(char3), total_amount(numeric), discount_amount(numeric),

    status(varchar), created_at(datetime), channel(varchar))

20. OrderItems

    (**PK**: item_id (int);

    FK: order_id -> Orders.order_id, item_type (varchar), item_ref_id (int), quantity (int,

    default: 1), unit_price (numeric), net_amount (numeric)

21. Payments

    (**PK**: payment_id(int);

    FK: order_id -> Orders.order_id;

    Attributes: method(varchar), amount(numeric), status(varchar), paid_at(datetime),

    provider_txn_ref(varchar))