

**Database Systems**

**Lab No.8**

**Submitted By**

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**Submitted To:**

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**Task:** Create an ER diagram for LANGUAGE-LEARNING PROGRESS TRACKER. The users interact with the system in order to learn languages and get lessons for each language and track their progress. Each user as his name, email, address when he registered himself to the application. User can learn the languages bases on their difficulty levels. Each language has resources associated with it. The languages are taught through lessons containing content according to the difficulty level. The application displays the progress of the user with his grades, completion status, test scores. A user can learn different languages. Each language has multiple lessons. User can get have various lessons as well.

**Solution:**

**Entities:**

* Users
* Languages
* Lessons
* Progress
* Resource

**Attributes:**

**Users:** UserID (Key Attribute)**,** Name (FirstName, lastName), Email and Address (Street, City, Postal Code)

**Languages:** LanguageID (Key Attribute), LanguageName, DifficultyLevel

**Lessons:** LessonID (Key Attribute), LessonTitle, Level, Content, LanguageID

**Progress:** ProgressID (Key Attribute), Grades, CompletionStatus, TestScores, UserID, LessonID

**Resource:** ResourceID (Key Atrribute), ResourceType, LanguageID

**Relationships:**

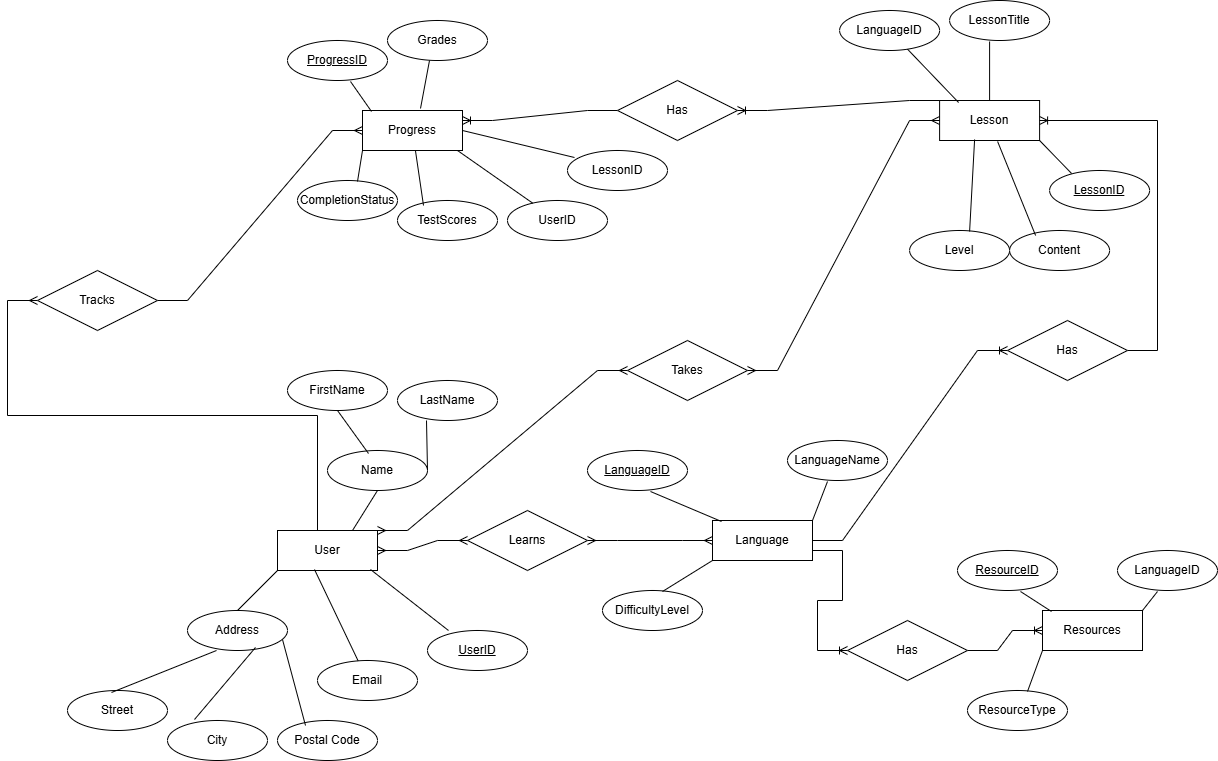
 **Users and Languages**: Many-to-Many, since a user can learn many languages and each language can be learned by many users.

 **Users and Lessons**: Many-to-Many, since a user can take many lessons and each lesson can be taken by multiple users.

 **Languages and Lessons**: One-to-Many, since a language can have multiple lessons, but each lesson belongs to only one language.

 **Users and Progress**: One-to-Many, since each user has their own progress, but one user can track progress for many lessons.

**ERD:**

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