A blue and white logo

AI-generated content may be incorrect.

**بسم الله الرحمن الرحیم**

**سامانه نرم‌افزاری آموزشگاه زبان انگلیسی کلام نو**

**سند اقلام داده‌ای**

اعضای تیم پروژه:

**محمدصالح صدیقی**

**امیرحسین بصیرت**

**پوریا سعید**

**یگانه قیومی**

استاد راهنما:

**علی نقاش اسدی**

**فروردین 1404**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **تاریخ** |  | **نسخه** | **توسط** | **شرح** |
| ۱۴۰4/01/17 | 1 | 1 | امیرحسین بصیرت | نسخه اولیه موجودیت ها |
| 1404/02/05 |  | 1.2 | امیرحسین بصیرت | توضیحات مفاهیم پایگاه داده اضافه شد |
| 1404/02/28 |  | 2 | امیرحسین بصیرت | رابطه ER و موجودیت ها تغییر و بهینه سازی شدند |
|  |  |  |  |  |

**مقدمه**

سامانه جامع آموزشگاه زبان انگلیسی کلام نو برای دو هدف داشتن فضای مجازی و همچنین دیجیتالی کردن فرایند بروکراسی آموزشگاه ساخته می‌شود. به این دلیل، این سامانه از دو بخش وب‌سایت و سامانه مدیریتی متشکل شده است. در بخش وب‌سایت محتویات مربوط به تبلیغ آموزشگاه و یا نکات آموزشی و خبری وجود خواهند داشت. در بخش سامانه مدیریت، بخش بروکراسی آموزشگاه، ثبت‌نام دانش‌آموزان و کلاس‌ها معلم‌ها، عملیات پرداخت بدهی و غیره ذخیره می‌شوند.

**اقلام داده‌ای**

کاربر - User

تمام کاربران سایت در این قلم داده‌ای اعم از دانش‌آموزان، معلمان، افراد پرسنل، و غیره ذخیره می شوند.

نقش - Role

هر کاربر می تواند یک یا بیشتر نقش داشته باشد. نقش ها در سامانه مدیریت دسترسی ها را مشخص می کنند و صفات مخصوص به نقش را نگه می دارند. به ازای بعضی نقش ها،‌ موجودیت کاربر می تواند به یک موجودیت دیگری رابطه برقرار کند. (مانند موجودیت معلم که در سامانه مدیریت جدا از کاربر عادی در نظر گرفته می‌شود) به صورت پیش‌فرض نقش‌ها دانش‌آموز، معلم، پرسونل، و نویسنده تعیین شده اند.

مقاله - Article

کاربر‌هایی که نقش مورد نیاز (نویسنده) را داشته باشند، می‌توانند در بخش وبسایت محتویات بگذارند.

اعلانات آموزشگاه - Institue Announcement

اعلانات کلی آموزشگاه که در لایه وبسایت قابل مشاهده می باشد. توسط کاربر با نقش نویسنده نوشته می‌شود.

معلم - Teacher

کاربرانی که نقش معلم را دارا هستند، به طور خودکار به یک نمونه از داده معلم متصل خواهند بود. این نمونه در رابطه‌ها مختص به سامانه مدیریت حضور خواهد داشت و به بخش وبسایت کاری ندارد. دلیل همچین طراحی، صفات اضافه مخصوص معلم است.

کلاس - Class

هر کلاس توسط فقط یک معلم تعلیم داده می‌شود و هر کلاس مربوط به یک کتاب خواهد بود.

* هر کلاس که در هر زمان ساخته می‌شود منحصر به فرد خواهند بود.
* هر کلاس یک تاریخ شروع و پایان دارند. در زمانی که کلاس اتمام نرسیده است تاریخ پایان مقدار Null خواهد گرفت.
* هر کلاس یک مقدار کم‌ترین جلسات برگزاری خواهد داشت که مشخص می کند حداقل چند جلسه برای این کلاس نیاز است تا تشکیل شود.
* هر کلاس یک میزان هزینه پرداختی پایه دارد که دانش‌آموز بابت آن کلاس پرداخت می کند.
* هر کلاس حقوق هر جلسه معلم را تعیین می‌کند.
* هر کلاس به یک کتاب متصل است که مشخص می کند این کلاس بر اساس چه کتابی تدریس می شود.

(ثبت‌نام) Enrollment

هر دانش‌آموز برای اینکه در کلاس بتواند شرکت کند نیاز دارد که ثبت‌نام انجام دهد. هر ثبت‌نام اطلاعات مربوط به بدهی بابت کلاس، معدل و نمرات کلاس هنگام پایان یافتن خواهد داشت.

(کتاب) Book

کتاب‌ ها درسی تعیین شده برای سامانه به این موجودیت شناخته می شود. برای دانستن هزینه کتاب، آخرین هزینه خرید کتاب نگه‌داری می‌شود.

(اعلانات‌کلاس) Class Announcement

اعلاناتی که توسط معلم هر کلاس می تواند نوشته شود.

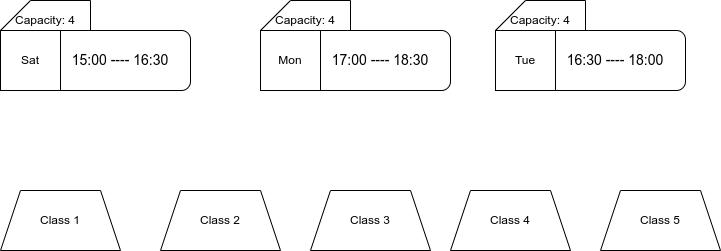
(جلسه) Session

هر کلاس، چندین جلسه قابل تشکیل دارد. معلم می تواند در هر جلسه حضور و غیاب بکند.

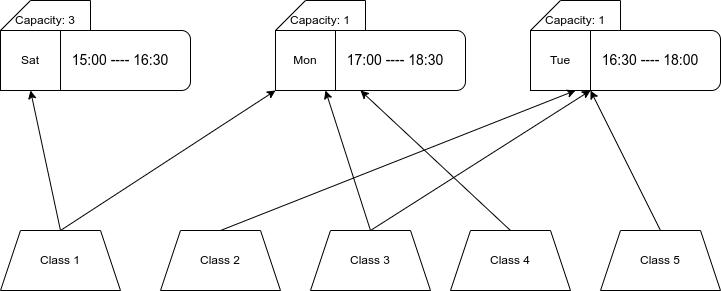
(بازه‌زمانی) Timeslot

این موجودیت هدفش گسسته سازی مفهوم زمان است که یک مفهوم پیوسته است. ایده این است که کاربران سامانه، بازه ها زمانی مشخصی در سیستم تولید می کنند و یا توسط الگوریتمی به صورت خودکار درست می‌شود. هر بازه زمانی یک صفت ظرفیت دارد که مشخص می کند در آن زمان چند اتاق در دسترس هستند تا کلاس تشکیل شوند.

فرض کنید پنج کلاس داریم و سه بازه زمانی مانند زیر:



**یک جواب به این مسئله می تواند همچین چیزی باشد:**

****

هر کلاس می تواند بیش تر از یک بازه زمانی به آن تعلق بگیرد و اگر ظرفیت صفر باشد، کلاسی نمی تواند به‌ آن تعلق بگیرد.

**جداول**

(کاربر) users

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| email@example.com |  | User’s email |  | NOT NULL, UNIQUE | VARCHAR(512) | email |
| a5u8dubD64afbuc |  | User’s password stored in hash |  | NOT NULL | VARCHAR(512) | password |
| 2024-09-18 11:55:19 |  | The date of when this user verified their email |  |  | DATETIME | email\_verified\_at |
| eag6adaoboqvwf |  | Remember token signifying the last time user changed their password |  |  | VARCHAR(512) | remember\_token |
| امیررضا |  | User’s first name |  | NOT NULL | VARCHAR(512) | first\_name |
| قاسمی |  | User’s last name |  | NOT NULL | VARCHAR(512) | last\_name |
| وحید |  | The name of user’s father |  | NOT NULL | VARCHAR(512) | father\_name |
| 1 = Male  2 = Female  0 = Unknown |  | The gender of user stored by using the ISO/IEC 5218 standard(استاندارد نگه داری جنسیت) |  | NOT NULL | TINYINT | sex |
| 2024-09-18 |  | Birthday given in Date format |  | NOT NULL | DATE | birthday |
| 09118434743 |  | The user’s phone number |  | NOT NULL | VARCHAR(16) | phone\_number |
| users/2/iwdwyv.png |  | A user uploaded profile picture for personal use. Stored in server storage |  |  | VARCHAR(512) | profile\_pic |
| users/2/iwdwyv.png |  | An official personnel photo |  |  | VARCHAR(512) | personnel\_photo |
|  |  | User’s national ID represented as a varchar field |  |  | VARCHAR(11) | national\_id |
| users/2/fobuvc.png |  | A scan of the national card if it is necessary |  |  | VARCHAR(512) | national\_card |
| users/2/sfwfono.png |  | A scan of the identification documents |  |  | VARCHAR(512) | identification |
| bachelors |  | Representing general level of education that the user has, before highschool will be stored as 1-3, 4-6, etc and after that simply the name of the level like bachelors, masters,etc |  | NOT NULL | VARCHAR(512) | education\_level |
| users/2/iwdwyv.png |  | Scan of the latest educational license if necessary |  |  | VARCHAR(512) | education\_license |
| خیابان شهدا – کوچه گل رز |  | The home address of the user |  | NOT NULL | TEXT | address |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(نقش ها) roles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| student |  | The title of the role |  | NOT NULL, UNIQUE | VARCHAR(512) | role |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
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(Users-roles pivot table) (کاربر-نقش) userroles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The id of the role this relation has |  | FOREIGN KEY | INT | role\_id |
| 2 |  | The id of the user participating in this relationship |  | FOREIGN KEY | INT | user\_id |
| 1 |  | If a role has been discontinued, this entry will be turned to false, instead of deleting the entry, for keeping history |  | NOT NULL | BOOLEAN | active |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
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(مقاله ها)articles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The id of the user who created this article |  | FOREIGN KEY | INT | user\_id |
| This town is lovely |  | Title of the article |  | NOT NULL | VARCHAR(512) | title |
| \*\*I love this town\*\* \* it’s clean  \* and it is amazing... |  | The content of the article stored with markup special characters |  | NOT NULL | LONGTEXT | content |
| articles/2/ihusguad.png |  | An optional main cover picture for this article |  |  | VARCHAR(512) | cover\_picture |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

articleuser (article-user pivot table)

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| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The id of the user who was one of this article’s creators |  | FOREIGN KEY | INT | user\_id |
| 2 |  | The id of the article |  | FOREIGN KEY | INT | article\_id |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(اعلانات آموزشگاه)institute\_announcements

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| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The id of the user who created this announcement |  | FOREIGN KEY | INT | user\_id |
| \*\*Pay your enrollment fees\*\* |  | The content of the announcement stored with markup special characters |  | NOT NULL | LONGTEXT | content |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(معلم ها)teachers

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The user that has this teacher entity |  | FOREIGN KEY | INT | user\_id |
| 1 |  | If the teacher is active or not |  | NOT NULL | BOOLEAN | active |
|  |  |  |  |  | INT | ttc\_score |
| teachers/2/adobi.png |  | Scan of the TTC test if necessary |  |  | VARCHAR(512) | ttc\_scan |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(کلاس ها)classes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The teacher that teaches this class |  | FOREIGN KEY | INT | teacher\_id |
| 1 |  | The id of the book assigned to this class |  | FOREIGN KEY | INT | book\_id |
| 18 |  | The default number of sessions assigned to this class |  |  | INT | default\_session\_count |
| 5 |  | The amount of sessions held for this class to the present. Held means that the session was created and ended at the designated date |  | NOT NULL | VARCHAR(512) | held\_sessions |
| 800000 |  | The base fee that needs to be paid by students enrolled in this class |  | NOT NULL | DECIMAL | base\_fee |
| 800000 |  | The fee that needs to be paid to teacher |  | NOT NULL | DECIMAL | teacher\_fee |
| 2024-09-18 11:55:19 |  | A class can be created but not started |  |  | DATETIME | started\_at |
| NULL |  | A class can be ended and then archived. If not it will contain NULL |  |  | DATETIME | ended\_at |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(جلسه ها)sessions

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The class this session belongs to |  | FOREIGN KEY | INT | class\_id |
| 0 |  | This will be set to true if the session was canceled |  | NOT NULL | BOOLEAN | canceled |
| 2024-09-18 11:55:19 |  | The concrete date when this session should take place |  | NOT NULL | DATETIME | date |
| This session, bring your books |  | An optional description of the session |  |  | TEXT | description |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
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(اعلانات کلاس ها)class\_announcements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The class this announcement belongs to |  | FOREIGN KEY | INT | class\_id |
| This class will be canceled |  | The content of this announcement |  | NOT NULL | TEXT | content |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
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(ثبت‌نام‌ها)enrollments

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The class this enrollment is of |  | FOREIGN KEY | INT | class\_id |
| 600000 |  | The base |  | NOT NULL | INT | base\_fee\_owed |
| 800000 |  | If the class requires a first time buy |  | NOT NULL | INT | book\_fee\_owed |
| 60 |  | The end of class score assigned by teacher to student for attendance |  | CHECK <=100 && >= 0 | INT | attendance\_score |
| 30 |  | The end of class score assigned by teacher to student for midterm |  | CHECK <=100 && >= 0 | INT | midterm\_score |
| 78 |  | The end of class score assigned by teacher to student for final score |  | CHECK <=100 && >= 0 | INT | final\_score |
| 56 |  | The end of class score assigned to student after finishing the enrollment |  | CHECK <=100 && >= 0 | INT | overall\_score |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
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(بازه‌ ها زمانی)timeslots

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | Holds values of 0 to 6 indicating days of the week, 0 = sat, 1 = sun, etc |  | NOT NULL, CHECK <= 6 | INT | day |
| 4 |  | How many classes can take on this timeslot at the present time. |  | NOT NULL | INT | capacity |
| 60 |  | The time of this slot’s start |  | NOT NULL | TIME | start\_time |
| 30 |  | The time of this slot’s end |  | NOT NULL | TIME | end\_time |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

scheduled\_classes(timeslots-classes pivot table)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | Holds values of 0 to 6 indicating days of the week, 0 = sat, 1 = sun, etc |  | NOT NULL, CHECK <= 6 | INT | class\_id |
| 4 |  | How many classes can take on this timeslot at the present time. |  | NOT NULL | INT | timeslot\_id |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

( User-session pivot table) (حضور و غیاب) attendances

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| 1 |  | The session this attandance belongs to |  | FOREIGN KEY | INT | session\_id |
| 4 |  | The user that attended |  | FOREIGN KEY | INT | user\_id |
| Bob was a good student this session+ |  | Optional details about this attendance |  |  | TEXT | details |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |

(کتاب ها)books

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample Data** |  | **Description** |  | **Constraints** | **Type** | **Field Names** |
| 2 |  | This entity’s primary key |  | PRIMARY, AUTO INCREMENT | INT | id |
| Family & Friends |  | The session this attandance belongs to |  | NOT NULL | VARCHAR(512) | name |
| 80000 |  | Last recorded price |  | NOT NULL | INT | price |
| books/2/fiwbfiwfv.png |  | Optional directory of cover image |  |  | VARCHAR(512) | cover |
| books/2/files/ |  | Directory of additional files for the book |  |  | VARCHAR(512) | files |
| 2024-09-18 11:55:19 |  | The time this entry was first created |  | NOT NULL | DATETIME | created\_at |
| 2024-09-18 11:55:19 |  | When this entry got updated. If it has not, the date will be the same as created\_at |  | NOT NULL | DATETIME | updated\_at |
|  |  |  |  |  |  |  |