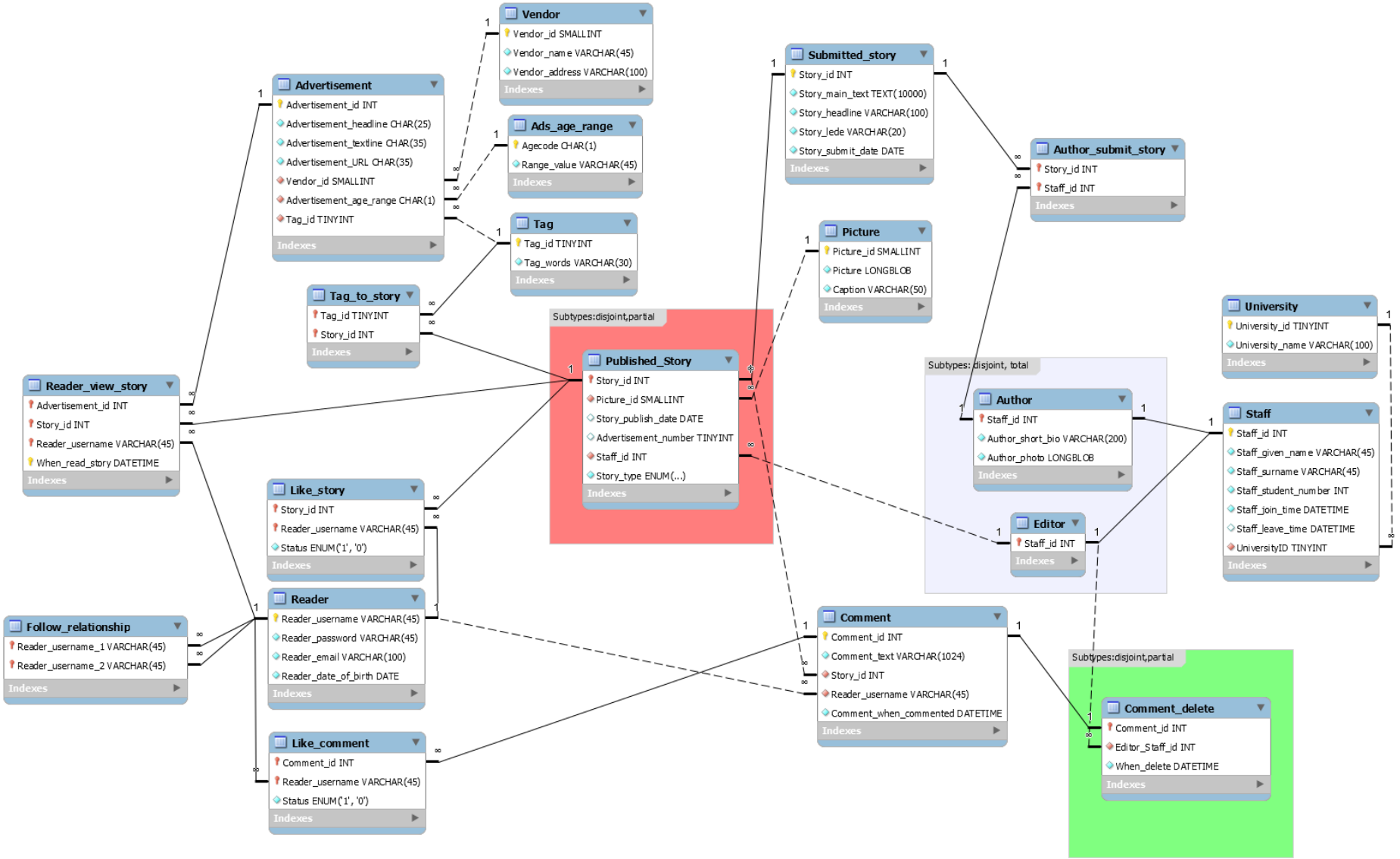
Vendor
Vendor_id SMALLINT
Vendor_name VARCHAR(45)
Vendor_address VARCHAR(100)
Indexes
Advertisement
Advertisement_id INT
Advertisement_headline CHAR(25)
Advertisement_textline CHAR(35)
Advertisement_URL CHAR(35)
Vendor_id SMALLINT
Advertisement_age_range CHAR(1)
Tag_id TINYINT
Indexes
Ads_age_range
Agecode CHAR(1)
Range_value VARCHAR(45)
Indexes
Tag
Tag_id TINYINT
Tag_words VARCHAR(30)
Indexes
Tag_to_story
Tag_id TINYINT
Story_id INT
Indexes
Submitted_story
Story_id INT
Story_main_text TEXT(10000)
Story_headline VARCHAR(100)
Story_lede VARCHAR(20)
Story_submit_date DATE
Indexes
Author_submit_story
Story_id INT
Staff_id INT
Indexes
Picture
Picture_id SMALLINT
Picture LONGBLOB
Caption VARCHAR(50)
Indexes
University
University_id TINYINT
University_name VARCHAR(100)
Indexes
Subtypes:disjoint,partial
Published_Story
Story_id INT
Picture_id SMALLINT
Story_publish_date DATE
Advertisement_number TINYINT
Staff_id INT
Story_type ENUM(...)
Indexes
Subtypes: disjoint, total
Author
Staff_id INT
Author_short_bio VARCHAR(200)
Author_photo LONGBLOB
Indexes
Staff
Staff_id INT
Staff_given_name VARCHAR(45)
Staff_surname VARCHAR(45)
Staff_student_number INT
Staff_join_time DATETIME
Staff_leave_time DATETIME
UniversityID TINYINT
Indexes
Editor
Staff_id INT
Indexes
Reader_view_story
Advertisement_id INT
Story_id INT
Reader_username VARCHAR(45)
When_read_story DATETIME
Indexes
Like_story
Story_id INT
Reader_username VARCHAR(45)
Status ENUM('1', '0')
Indexes
Reader
Reader_username VARCHAR(45)
Reader_password VARCHAR(45)
Reader_email VARCHAR(100)
Reader_date_of_birth DATE
Indexes
Follow_relationship
Reader_username_1 VARCHAR(45)
Reader_username_2 VARCHAR(45)
Indexes
Like_comment
Comment_id INT
Reader_username VARCHAR(45)
Status ENUM('1', '0')
Indexes
Comment
Comment_id INT
Comment_text VARCHAR(1024)
Story_id INT
Reader_username VARCHAR(45)
Comment_when_commented DATETIME
Indexes
Subtypes:disjoint,partial
Comment_delete
Comment_id INT
Editor_Staff_id INT
When_delete DATETIME
Indexes

Data Dictionary

Entity 'Published_story'

Description

This entity represents the stories which are posted on the website. For each published story (local new, world news, etc.…), there will be one record for each story. The entity is the subtype table of Submitted story and holds 'static' data about a story: those attributes which do not vary.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Story_id	INT	YES	YES	YES	NO	While this primary key is a unique integer, it is also the number to identify the stories published on website, referencing to Submitted_story table. It doesn't allow null value.
FK	Picture_id	SAMLLINT	YES	NO	YES	NO	This is a foreign key referencing to the Picture table.
	Story_publish_date	DATE	YES	NO	NO	NO	Publish date is represented in type of date to record the particular date each story is published.
	Advertiesment_number	TINYINT	NO	NO	YES	NO	Advertisement number, which is decided by editors, shows how many advertisements will be displayed with a story. It is a tinyint since the number is typically between 1 and 4.
FK	Staff_id	INT	YES	NO	YES	NO	This is a foreign key referencing to the Editor table.
	Story_type	ENUM ('Local news', 'World news', 'Australia', 'Melbourne', 'Opinion',	YES	NO	NO	NO	Story type is represented in type of enumerate since each story is classified within the seven sections.

		'Education', 'Technology')					

Entity 'Submitted_story'

Description

This entity represents the stories which are submitted by author but may not have been published yet. For each new story (local new, world news, etc.…) entered into the database, there will be one record for each story to record their id, text, headline, “lede”, type, publish time as well as other information like picture, tag and editor.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Story_id	INT	YES	YES	YES	YES	While this primary key is a unique integer, it is also the number to identify the story submitted by author. The id increments as the authors submit stories to us. It doesn’t allow null value
	Story_main_text	TEXT (10000)	YES	NO	NO	NO	The main content of a story, maximum 10,000 characters long.
	Story_headline	VARCHAR (100)	YES	NO	NO	NO	The headline of the story, maximum 100 characters long.
	Story_lede	VARCHAR (20)	YES	NO	NO	NO	The lede summarizes the story which is a sentence of 10 to 20 words.
	Story_submit_date	DATE	YES	NO	NO	NO	Publish date is represented in type of date to record the particular date each story is submitted.

Entity 'Picture'

Description

This entity represents the picture which will be displayed under the headline at the top of the story.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Picture_id	SMALLINT	YES	YES	YES	YES	While this primary key is a unique integer, it is also the number identifying the picture and easily to be referenced.
	Picture	LONGBLOB	YES	YES	NO	NO	The variable stores one picture only once without duplication, although one picture can be used in several stories.
	Caption	VARCHAR (50)	YES	NO	NO	NO	This variable should be stored with the picture. The length of this caption should be no more than 50 characters.

Entity 'Author_submit_story'

Description

This entity represents the submission information of a certain story. For each new story entered into database, there would be one or more record depending on the number of authors, but not for 'repeat submit recording'. The entity Author_submit_story holds 'static' data about a submission: those attributes which do not varying from showing to showing.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description

PK, FK	Staff_id	INT	YES	NO	YES	NO	It is composite key which is a unique unsigned integer. It references to Author table, showing who submit the story. Together with the Story_id, it acts as a primary key of this table. It doesn't allow null value.
PK, FK	Story_id	INT	YES	NO	YES	NO	It is composite key which is a unique unsigned integer. This id references to Submitted_story table. Together with the Staff_id, it acts as a primary key of this table.

Entity 'Staff'

Description

This entity represents the staffs including editors and authors which should be recorded according to the question. For each new staff (including editors and authors) entered into the database, there will be one record for each staff without repetition. It also has two disjoint and total subtypes which are Editor and Author, because each staff must only be an editor or an author who need to be recorded more information. The entity Staff holds 'static' data about a staff: those attributes which do not vary.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Staff_id	INT	YES	YES	YES	YES	While this primary key is a unique integer, it is also the number to identity the staffs. E.g. '1' for FEI, '2' for Gu, etc. Because there are likely to be hundreds or even thousands of authors after a few years, the data type of staff_id is int.
	Staff_given_name	VARCHAR (45)	YES	NO	NO	NO	The given name of staffs. E.g. 'Sharon' or 'Monica' or 'Fiona'
	Staff_surname	VARCHAR (45)	YES	NO	NO	NO	The surname of staffs. E.g. 'Gates' or 'Buffett' or 'Beckham'
	Staff_student_number	INT	YES	NO	YES	NO	The student number of student in the university.

	Staff_join_time	DATETIME	YES	NO	NO	NO	The variable records the time when one staff joins the newspaper.
	Staff_leave_time	DATETIME	NO	NO	NO	NO	This records the time when the staff leaves the newspaper. For those staffs who do not leave the newspaper, this variable should be null.
FK	University_id	TINYINT	YES	NO	YES	NO	This is a foreign key referencing to the University table to record which university a staff entered.

Entity 'Editor'

Description

This entity is the subtype of Staff table, only recording which staffs work as editors. For each new staff, if their vocation is editor, there would be a certain record of their id. The entity Editor holds ‘static’ data about an editor.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Staff_id	INT	YES	YES	YES	NO	while this primary key is a unique integer, it is also a foreign key which references to the staff table. Only including the id of staffs who work as editors.

Entity 'Author'

Description

This entity is another subtype of Staff table, only recording which staffs work as Author. For each new staff, there would be a new row to record who work as author, his/her short bio and photo. These data are static about an author.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Staff_id	INT	YES	YES	YES	NO	while this primary key is a unique integer, it is also a foreign key which references to the staff table. Only including the id of staffs who work as authors.
	Author_short_bio	VARCHAR (200)	YES	NO	NO	NO	It records the personal resume offered by the author, which should be no more than 200 characters.
	Author_photo	LONGBLOB	YES	NO	NO	NO	This variable stores the photo describing the author.

Entity 'University'

Description

This entity represents the University which staffs attend in the question, which is a “look up” table for Staff table.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	University_id	TINYINT	YES	YES	YES	YES	While this primary key is a unique integer, it is also the number to identify the certain university. E.g. ‘1’ for the University of Melbourne,’2’ for RMIT, etc.
	University_name	VARCHAR (100)	YES	YES	NO	NO	The name of the University itself. E.g. ‘the University of Melbourne’ or ‘RMIT’ or ‘Swinburne University’.

Entity 'Tag'

Description

This entity represents the tag of each advertisement, which is a “look up” table for Story and Advertisement table.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Tag_id	TINYINT	YES	YES	YES	YES	While this primary key is a unique unsigned tiny integer, it is also the number to identify the tag. The id increments as the tags on website increases. It doesn’t allow null value.
	Tag_words	VARCHAR (30)	YES	YES	NO	NO	This is a varchar to record the exact tag words up to 30 characters. It doesn’t allow null value.

Entity 'Tag_to_story'

Description

This entity represents these certain tags that are related to their stories.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK,FK	Tag_id	TINYINT	YES	NO	YES	NO	While this primary key is a unique unsigned tiny integer, it is also the number to identify the tag, referencing to Tag table. The id increments as the tags on website increases. It doesn’t allow null value.
PK, FK	Story_id	INT	YES	NO	YES	NO	It is composite key which is a unique unsigned integer, referencing to Published_story table. Together with theTag_id, it acts as a primary key of this table. It doesn’t allow null value.

Entity 'Reader'

Description

This entity represents the information of readers who registered in our website. For each new reader entered into the database, there will be one record for each reader. The entity Reader holds 'static' data about a reader.

Attributes

Key	Attribute	Data type	Not null	Unique	Unsigned	Auto Incremental	Description
PK	Read_username	VARCHAR (45)	YES	YES	NO	NO	The username of our readers. e.g. ‘Fred’
	Read_Password	VARCHAR (45)	YES	NO	NO	NO	The password of readers, when they log in our website.
	Read_email	VARCHAR (100)	YES	YES	NO	NO	The Email of readers.
	Read_date_of_birth	DATE	YES	NO	NO	NO	The birthday of our readers.

Entity 'Comment'

Description

This entity represents the comment which readers make under a story. For each new comment, there would be a new row to record who make it, its content, its time and under which story. These data are static, and in case a comment is deleted by an editor, we use the following subtype table to record.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description

PK	Comment_id	INT	YES	YES	YES	YES	While this primary key is a unique unsigned integer, not allowing null, it is also the number to identify the comment. The id increments as the comment posted on website increases.
	Comment_text	VARCHAR (1024)	YES	NO	NO	NO	It records the content of a comment, maximum 1024 characters long and doesn't allow null.
FK	Reader_username	VARCHAR (45)	YES	NO	NO	NO	It is a not null varchar to record the reader name of which makes a comment, referencing to Reader table. It is a varchar which allows up to 45 characters.
FK	Story_id	INT	YES	NO	YES	NO	This is an unsigned integer and can't be null which records which story is the comment made on, referencing to the Published story table.
	Comment_when_commented	DATETIME	YES	NO	NO	NO	It is a DATETIME to record the time when the comment is made.

Entity 'Comment_delete'

Description

Every time a comment been deleted by an editor, there will be one record for each comment, just as be marked as delete but not actually be deleted from database. The entity comment_delete is a subtype table of Comment and holds 'static' data about a deleted comment.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Comment_id	INT	YES	YES	YES	NO	while this primary key is a unique integer, it is also a foreign key which references to the Comment table. Only including the id of comments which are unsuitable and deleted by editor.
	When_delete	DATETIME	YES	NO	NO	NO	This variable stores the time when edit delete the comment.

FK	Editor_Staff_id	INT	YES	NO	YES	NO	This is a foreign key referencing to the Editor table to record which editor delete unsuitable comment.

Entity 'Like_story'

Description

Every time a reader points a like button, there would be a new recording. However, if the reader changes his/her mind, it will be recorded on the same row just through changing the value of status from 1 to 0 without redundant recording.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Story_id	INT	YES	NO	YES	NO	It is composite key which is a unique unsigned integer, referencing to Published story table. Together with the Reader_username, it acts as a primary key of this table. It doesn't allow null value.
PK, FK	Reader_username	VARCHAR (45)	YES	NO	NO	NO	It is composite key which is a varchar, referencing to Reader table and allowing up to 45 characters. This variable records which reader like this story. Together with the Story_id, it acts as a primary key of this table. It doesn't allow null value.
	Status	ENUM ('1', '0')	YES	NO	YES	NO	Status is an enumeration type which represents this a like or cancelling like record. 1 stands for like and 0 stands for cancelling.

Entity 'Like_comment'

Description

Every time a reader points a like button or cancel like button under a comment, there would be a new recording. However, if the reader changes his/her mind, it will be recorded on the same row just through changing the value of status from 1 to 0 without redundant recording.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Comment_id	INT	YES	NO	YES	NO	It is composite key which is a unique unsigned integer, referencing to Comment table. Together with the Reader_username, it acts as a primary key of this table. It doesn't allow null value.
PK, FK	Reader_username	VARCHAR (45)	YES	NO	NO	NO	It is composite key which is a varchar, referencing to Reader table and recording which reader click the like button and allowing up to 45 characters. Together with the Comment_id, it acts as a primary key of this table. It doesn't allow null value.
	Status	ENUM ('1', '0')	YES	NO	YES	NO	Status is an enumeration type which represents this a like or cancelling like record. 1 stands for like and 0 stands for cancelling.

Entity 'Follow_relationship'

Description

For each time when a reader follows another reader, there will be one record for each follow_relationship. The entity Follow_relationship holds static data about a view.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Reader_username _1	VARCHAR (45)	YES	NO	NO	NO	A user, who follow another user, references to Reader table. E.g. User A's name in a 'A follow B' relationship.
PK, FK	Reader_username_2	VARCHAR (45)	YES	NO	NO	NO	A user, who is followed by another user, references to Reader table. E.g. User B's name in a 'A follow B' relationship.

Entity 'Reader_view_story'

Description

For each time when a reader clicks to view a story, there will be one record for each view. The entity Reader_view_story holds ‘static’ data about a view.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK, FK	Story_id	INT	YES	NO	YES	NO	While primary key is unique integer, it also represents stories viewed by readers, referencing to Published Story table.
PK, FK	Reader_user name	VARCHAR (45)	YES	NO	NO	NO	This primary key represents the name of a reader who read our stories, referencing to Reader table.
PK, FK	Advertisement_id	INT	YES	NO	YES	NO	When a reader read a story, this attribute represents the advertisement id, which record advertisements, displayed beside the story, referencing to Advertisement table.
PK	When_read_story	DATETIME	YES	NO	NO	NO	This primary key records when the reader viewed a story.

Entity 'Advertisement'

Description

This entity represents the advertisements, which were provided by vendors, were collected in our database. For each new advertisement entered into the database. There will be one record. The entity Advertisement holds 'static' data about an advertisement.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Advertisement_id	INT	YES	YES	YES	YES	While this primary key is a unique integer, it identifies every advertisement and increase automatically.
	Advertisement_headline	CHAR (25)	YES	NO	NO	NO	The text line of advertisements, maximum 25 characters.
	Advertisement_text line	CHAR (35)	YES	NO	NO	NO	The text line of advertisements, maximum 35 characters.
	Advertisement_URL	CHAR (35)	YES	YES	NO	NO	The URL of advertisements, containing 35 characters.
FK	Tag_id	TINYINT	YES	NO	YES	NO	This is the foreign key referencing to Tag table, representing each advertisement associates with what tag.
FK	Vendor_id	SMALLINT	YES	NO	YES	NO	This is the foreign key referencing to Vendor table, recording which vendor provides this advertisement.
FK	Advertisement_age_range	CHAR (1)	YES	NO	NO	NO	This is a foreign key referencing to Ads_age_range table to classify advertisements into different age range.

Entity 'Vendor'

Description

This entity represents the records of vendors who provide advertisements for our website.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Vendor_id	SMALLINT	YES	YES	YES	YES	This primary key records every vendor with a unique small integer.
	Vendor_name	VARCHAR (45)	YES	NO	NO	NO	This represents vendor's name.
	Vendor_address	VARCHAR (100)	YES	NO	NO	NO	This represents vendor's address.

Entity 'Ads_age_range'

Description

This entity represents the age-range chosen by vendors for their advertisements. It is a "look up" table for Advertisement table, which makes the age_range to be changed easily.

Attributes

Key	Attribute	Data Type	Not Null	Unique	Unsigned	Auto Incremental	Description
PK	Agecode	CHAR (1)	YES	YES	NO	NO	One age code represents an age range. E.g. 'A' represents "0--15"
	Range_value	VARCHAR (10)	YES	YES	NO	NO	This attribute describes the value of different age range. E.g. '0—15', '16—20','21—30'.