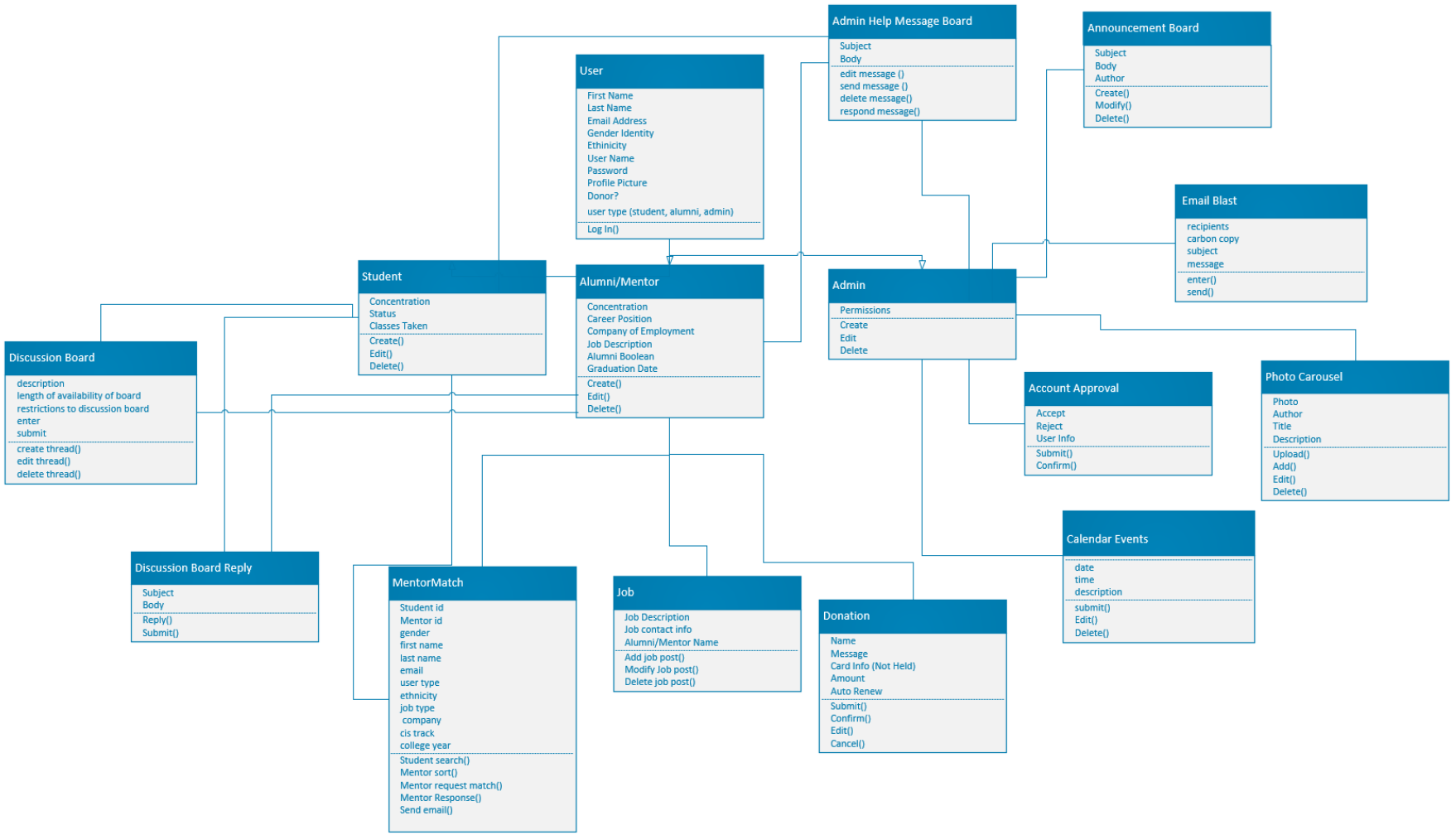
Class Diagram

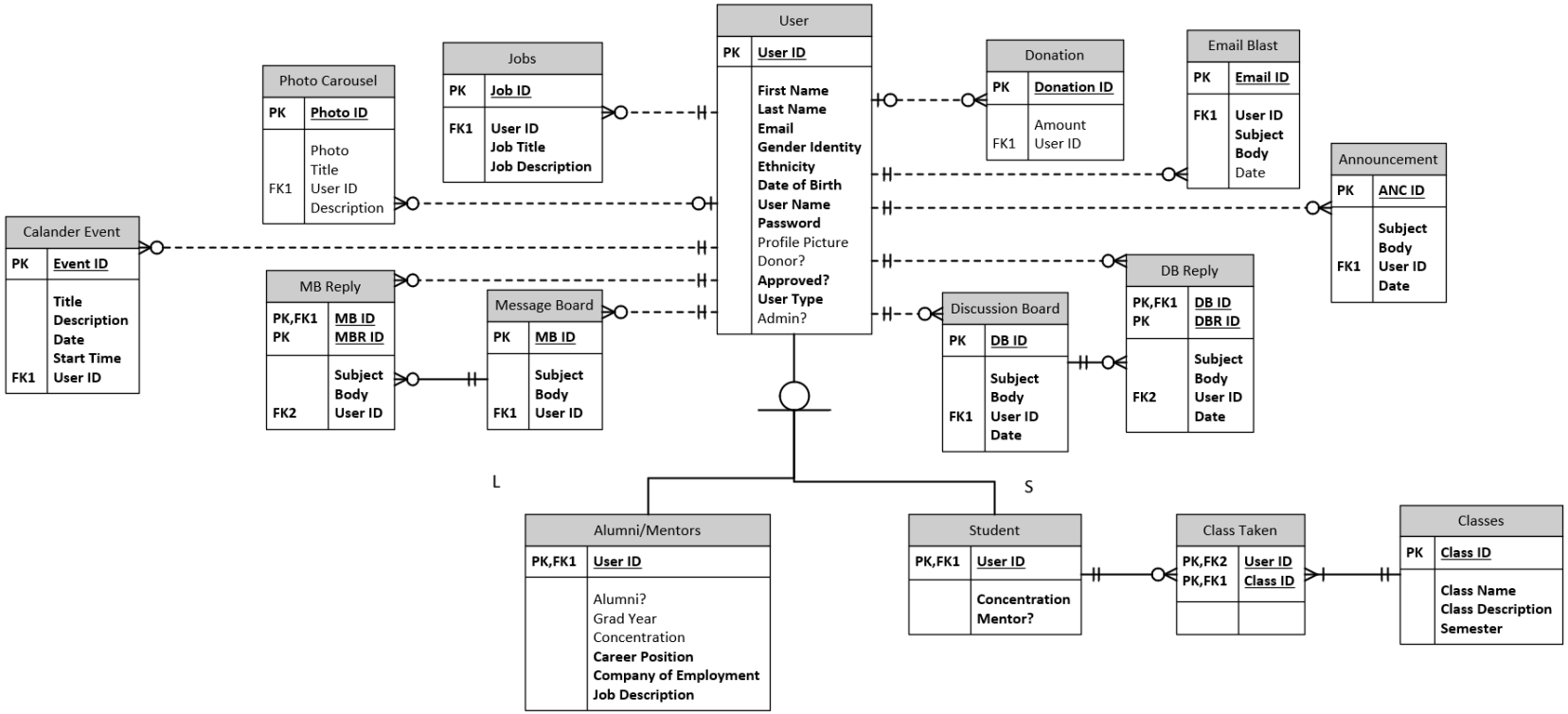
This Class diagram is to show the relationship between different classes and how they'll interact with each other or how the class will work within itself. This class diagram starts off with a superclass known as user. From there, there are three subclasses from the user class: student, alumni/mentor, and admin. The relationships drawn from these subclasses represents what each class is able to do within the website. For example, admins are the only people able to interact with the announcement board, email blast, and photo carousel classes, and everyone is able to interact with the admin help message board.

To create this class diagram, we used primarily subject verb analysis of our use cases. After these were analyzed and put into normal individual classes, the classes were factored and added together to make the classes extremely efficient.


Admin Help Message Board
Subject
Body
edit message ()
send message ()
delete message()
respond message()
Announcement Board
Subject
Body
Author
Create()
Modify()
Delete()
User
First Name
Last Name
Email Address
Gender Identity
Ethinicity
User Name
Password
Profile Picture
Donor?
user type (student, alumni, admin)
Log In()
Email Blast
recipients
carbon copy
subject
message
enter()
send()
Student
Concentration
Status
Classes Taken
Create()
Edit()
Delete()
Alumni/Mentor
Concentration
Career Position
Company of Employment
Job Description
Alumni Boolean
Graduation Date
Create()
Edit()
Delete()
Admin
Permissions
Create
Edit
Delete
Discussion Board
description
length of availability of board
restrictions to discussion board
enter
submit
create thread()
edit thread()
delete thread()
Account Approval
Accept
Reject
User Info
Submit()
Confirm()
Photo Carousel
Photo
Author
Title
Description
Upload()
Add()
Edit()
Delete()
Calendar Events
date
time
description
submit()
Edit()
Delete()
Discussion Board Reply
Subject
Body
Reply()
Submit()
MentorMatch
Student id
Mentor id
gender
first name
last name
email
user type
ethnicity
job type
company
cis track
college year
Student search()
Mentor sort()
Mentor request match()
Mentor Response()
Send email()
Job
Job Description
Job contact info
Alumni/Mentor Name
Add job post()
Modify Job post()
Delete job post()
Donation
Name
Message
Card Info (Not Held)
Amount
Auto Renew
Submit()
Confirm()
Edit()
Cancel()

Database Design and Data Definitions

This database was used creating the class diagram from above. Any attribute in there is likely within the ERD. The only exceptions are intangibles such as dates when things are posted within the database that is useful for record keeping purposes. There isn't an admin table within the ERD mostly because the only thing that being an admin does is give someone permission to do things. So instead of having a separate admin table, there is a checkmark that denotes if someone is or isn't an admin within the system. There are also additional entities when dealing with multivalued variables within the class diagram such as "classes."


User
PK User ID
First Name
Last Name
Email
Gender Identity
Ethnicity
Date of Birth
User Name
Password
Profile Picture
Donor?
Approved?
User Type
Admin?
Jobs
PK Job ID
FK1 User ID
Job Title
Job Description
Photo Carousel
PK Photo ID
Photo
Title
FK1 User ID
Description
Donation
PK Donation ID
Amount
FK1 User ID
Email Blast
PK Email ID
FK1 User ID
Subject
Body
Date
Announcement
PK ANC ID
Subject
Body
FK1 User ID
Date
Calander Event
PK Event ID
Title
Description
Date
Start Time
FK1 User ID
MB Reply
PK,FK1 MB ID
PK MBR ID
Subject
Body
FK2 User ID
Message Board
PK MB ID
Subject
Body
FK1 User ID
Discussion Board
PK DB ID
Subject
Body
FK1 User ID
Date
DB Reply
PK,FK1 DB ID
PK DBR ID
Subject
Body
FK2 User ID
Date
L
S
Alumni/Mentors
PK,FK1 User ID
Alumni?
Grad Year
Concentration
Career Position
Company of Employment
Job Description
Student
PK,FK1 User ID
Concentration
Mentor?
Class Taken
PK,FK2 User ID
PK,FK1 Class ID
Classes
PK Class ID
Class Name
Class Description
Semester

User

Field name	Data type	Constraint	Description
User ID	INT	PRIMARY KEY	The primary key for the user table
First Name	VARCHAR(50)	Null	The first name with a 50 character limit
Last Name	VARCHAR(50)	Null	The last name with a 50 character limit
Email	VARCHAR(65)	Null	The email with a 65 character limit
Gender Identity	VARCHAR(50)	Null	The gender identity with a 50 character limit
Ethnicity	VARCHAR(50)	Null	The ethinicity with a 50 character limit
Date of Birth	DATE	Null	The date of birth stored in julian date format
User Name	VARCHAR(50)	Null	The username with a 50 character limit
Password	VARCHAR(50)	Null	The password with a 50 character limit
Profile Picture	BLOB	Null	The profile picture stored in mysql blob format
Donor?	SMALLINT	Null	A bool value for if user has donated before stored in smallint where 0 is no and 1 is yes
Approved?	SMALLINT	Null	A bool value for if the user has been approved by an admin yet stored in smallint where 0 is no and 1 is yes
Admin?	SMALLINT	Null	A bool value for if the user is an admin and will be granted admin premissions stored in smallint where 0 is no and 1 is yes
UserType	CHAR(1)	Null	This the user type. L is for alumni S is for student it is stored with a single character limit

Alumni/Mentors

Field name	Data type	Constraint	Description
User_ID	INT	PRIMARY KEY, FOREIGN KEY	The foreign key from user that is also the primary key for Alumni/mentors that is stored as an int
Alumni?	SMALLINT	Null	A bool value for if user is Alumn stored in smallint where 0 is no and 1 is yes
Grad Year	DATE	Null	The date of graduation stored in mysql julian date format
Concentration	VARCHAR(50)	Null	The persons concentration stored with a 50 character limit
Career Position	VARCHAR(100)	Null	The persons job title stored with a 100 character limit
Company of Employeemnt	VARCHAR(100)	Null	The company where the person works with a 100 character limit
Job Desc	VARCHAR(1000)	Null	A brief description of what they do at their job with a 1000 character limit

Student

Field Name	Data Type	Constraint	Description
User ID	INT	Primary Key, Foreign Key 1	Primary Key that tells the identity of the user/student. Is a child of User
Concentration	VarChar(50)	Null	Tells the Concentration the Student is studying
Mentor?	Small INT	Null	Boolean Value that says if the students wants to mentor

Class Taken

Field Name	Data Type	Constraint	Description
User ID	INT	Primary Key, Foreign Key 1	User ID from student table. Middle table to connect classes and students.
Class ID	INT	Primary key, Foreign Key 2	Class ID from classes table. Middle table to connect classes and students.

Classes

Field Name	Data Type	Constraint	Description
Class ID	INT	Primary Key	Class number acting as the primary key
Class Name	VarChar(30)	NULL	Class name that describes the class
Class Description	VarChar(300)	NULL	Describes the purpose of the class in greater detail for the benefit of the uninformed reader.

Jobs

Field name	Data type	Constraint	Description
Job ID	INT	PRIMARY KEY	The primary key for the jobs table stored in a INT
User ID	INT	FOREIGN KEY	The foreign key from the user table stored in a int
Job Title	VARCHAR(100)	Null	The title of the job with a 100 character limit
Job description	VARCHAR(1000(	Null	The job description with a 1000 character limit

Donation

Field Name	Data Type	Constraint	Description
Donation ID	INT	Primary Key	Indicates which donation this is.
Amount	VarChar(10,2)	NULL	Indicates the amount the donation is for.
User ID	INT	Foreign Key	Indicates the person who donated it.

Photo Carousel

Field name	Data type	Constraint	Description
Photo ID	INT	PRIMARY KEY	The primary key for the photo carousel table stored as an INT
Photo	BLOB	Null	The picture stored in mysql blob format
Title	VARCHAR(50)	Null	The title of the picture with a 50 character limit
User ID	INT	FORIGEN KEY	The foreign key from the user table stored as int
Description	VARCHAR(255)	Null	The description of the photo in the carousel with a 255 character limit

Email Blast

Field Name	Data Type	Constraint	Description
Email ID	INT	Primary Key	Primary Key for the Email Blast table
User ID	INT	Foreign Key	Foreign Key showing the Author of the table
Subject	VarChar(300)	NULL	VarChar with a 300 character limit showing the subject of the email
Body	Varchar(100000	NULL	VarChar with a 100,000 character limit showing the body of the email.

Discussion Board

Field Name	Data Type	Constraint	Description
DB ID	INT	Primary Key	Indicates which discussion board this is.
Subjet	VarChar(300)	NULL	A brief over view of what the board is about.
Body	VarChar(10000)	NULL	The body of text in the discussion board
User ID	INT	Foreign Key 1	The author of the discussion board.
Date	DATE	NULL	Date of discussion board creation stored as DATE

DB Reply

Field Name	Data Type	Constraint	Description
DB ID	INT	Primary Key Foreign Key1	Indicates which discussion board this is.
DBR ID	INT	Primary Key	Indicates which discussion board reply this is.
Subject	VarChar(300)	NULL	A brief over view of what the board is about.
Body	VarChar(10000)	NULL	The body of text in the discussion board
User ID	INT	Foreign Key 2	The author of the discussion board reply
Date	DATE	NULL	Date of Discussion board reply creation stored as DATE

Message Board

Field name	Data type	Constraint	Description
MB ID	INT	PRIMARY KEY	The primary key for the message board stored as an int
Subject	VARCHAR(100)	Null	The subject of the message board with 100 character limit
Body	VARCHAR(10000)	Null	The body of the message board with a 10000 character limit
User ID	INT	FORIGEN KEY	The foreign key from the user table stored as int

Message Board Reply

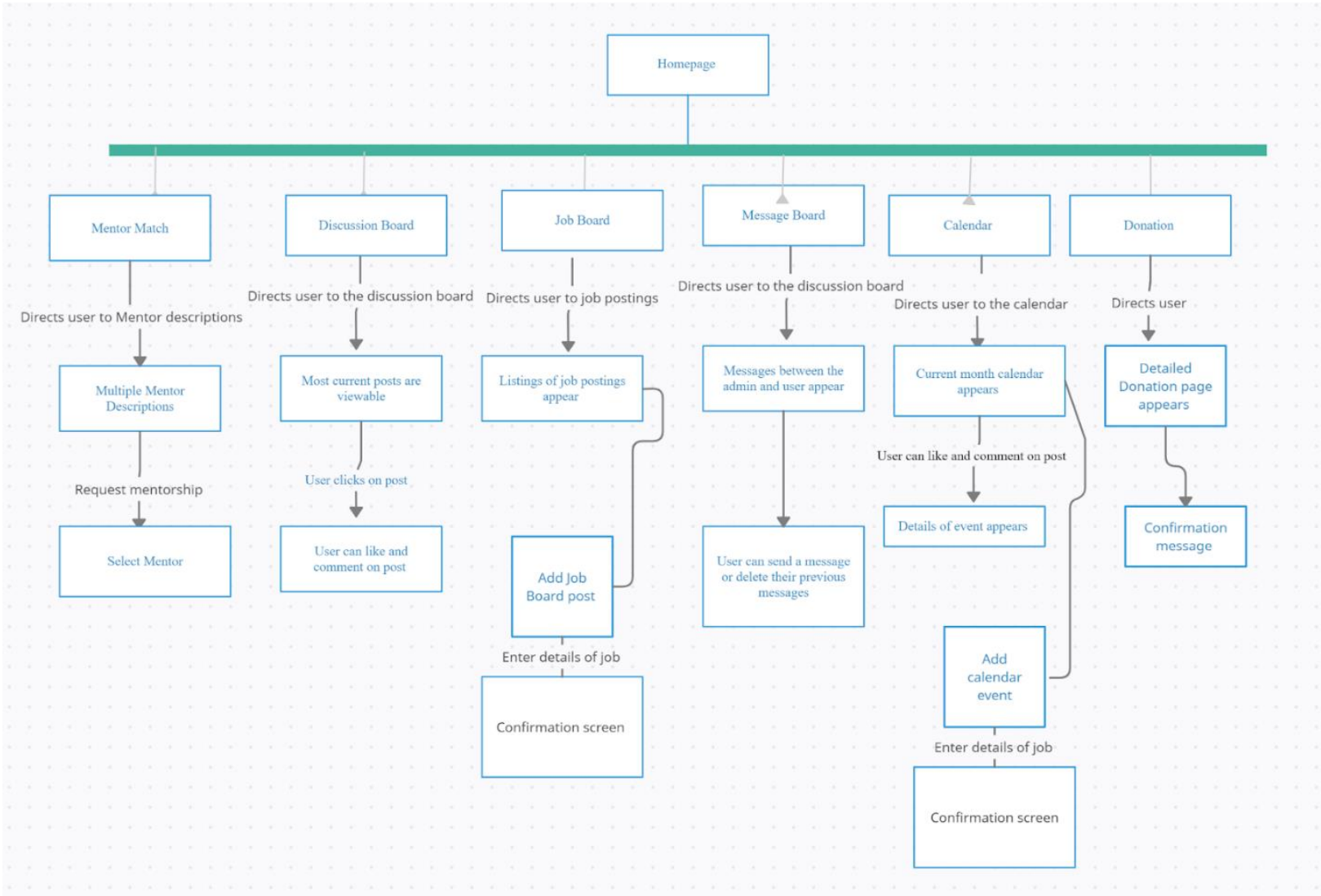
Field name	Data type	Constraint	Description
MB ID	INT	PRIMARY KEY, FOREIGN KEY	The foreign key from message board that is part of a composite primary key for message board reply that is stored as an int
MBR	INT	PRIMARY KEY	The second part of the composite primary key for message board reply stored as an int
Subject	VARCHAR(100)	Null	The subject of the reply with 100 character limit
Body	VARCHAR(10000)	Null	The body of the message board with a 10000 character limit
User ID	INT	FORIGEN KEY	The second foreign key from the user table stored as int

Announcement

Field Name	Data Type	Constraint	Description
ANC ID	INT	PRIMARY KEY	Primary Key for the announcement table stored as INT
Subject	VARCHAR(100)	NULL	Subject of the announcement for easy parcing stored as VARCHAR with 100 Character limit
Body	VARCHAR(10000)	NULL	Body of the announcement with details stored as VARCHAR with 10000 Character limit
User ID	INT	Foreign Key	Author of the Announcement stored as INT
Date	Date	NULL	Date Announcement was posted stored as Date

Windows Navigation Diagram

This is our Windows Navigation Diagram. It starts with the main landing page, the homepage. Then it shows all the options that the user can navigate to from the home page. Then, the diagram shows the features of each webpage and what the abilities are of each page.


Homepage
Mentor Match
Discussion Board
Job Board
Message Board
Calendar
Donation
Directs user to Mentor descriptions
Directs user to the discussion board
Directs user to job postings
Directs user to the discussion board
Directs user to the calendar
Directs user
Multiple Mentor Descriptions
Most current posts are viewable
Listings of job postings appear
Messages between the admin and user appear
Current month calendar appears
Detailed Donation page appears
Request mentorship
User clicks on post
User can like and comment on post
Select Mentor
User can like and comment on post
Add Job Board post
User can send a message or delete their previous messages
Details of event appears
Confirmation message
Enter details of job
Add calendar event
Confirmation screen
Enter details of job
Confirmation screen

Physical Architecture Design

Here is our network model depicting our psychical network design. It starts with the user connecting to the internet in our case with a desktop connected to their modem to access it. The user's connection to the cobweb then has to pass through the firewall where it then will be connected to a cache which connects to it all the different servers.