



ELABORATION SPECIFICATION

KY HBPA IT Project



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System Requirements

Narrative

The following lists cover the functional and non-functional requirements that must be satisfied by the deliverable. The functional requirements are specific to the application / website itself. They cover issues related to user transactions, tools, and data maintenance. The non-functional requirements cover issues outside the main application such as security and backups.

Functional Requirements

1. The website will process transactions electronically.
2. The website will be able keep track of members through a back-end database.
3. The website will be able to associate documentation with users in the database.
4. The website will allow users to contact the KHBPA through email.
5. The website will contact users when they need to be contacted
6. The website will be directly integrated with the KHBPA social media accounts.
7. The website will allow users to make donations to KHBPA
8. The system will keep track of and allow for management of a calendar of events
9. The system will support management of news items
10. The system will keep a database of links to outside pages
11. The system will support storing and managing submitted claims
12. The system will store photos and videos
13. The system will track admin-created polls and support embedding them
14. The system will store and allow downloading of medication information documentation
15. The system will store and allow downloading of a license form
16. The system will store and allow downloading of a bill of sale form
17. The system will support online benefits form submission and store related data
18. The system will allow users to provide feedback through a question form with a free text input
19. The system will store and report contact info for the board of directors

Non-Functional Requirements

1. The website content will be easily editable by employees of KHBPA.
2. The website will be visually distinct from similar organizations.
3. The system will be secure from outside attack
4. System data will be backed up every 24 hours with the last 3 backups being stored in separate locations
5. Data transferred to and from the server will be encrypted via SSL
6. Sensitive user data stored on the server will be encrypted with PGP
7. Permissions to application data will only be modifiable by an administrator
8. System must maintain full traceability of transactions
9. The system will maintain relational integrity in the database
10. The system will maintain 99% uptime
11. The system will be accessible from any location and at any time

Use Case Diagram

Narrative

This use case diagram is simply a visual representation of who is responsible for starting each specific use case. All the use cases listed are considered high-risk and low-risk in terms of the amount of resources that need to be used and how long the business process could potentially take.

Diagram

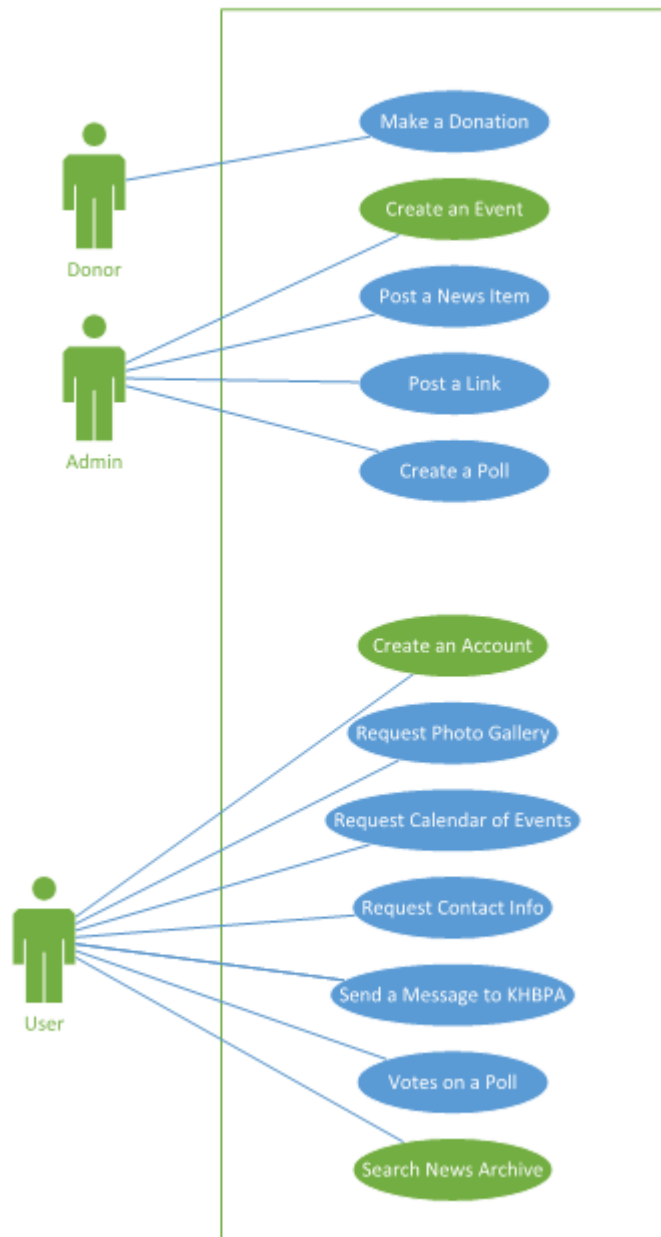
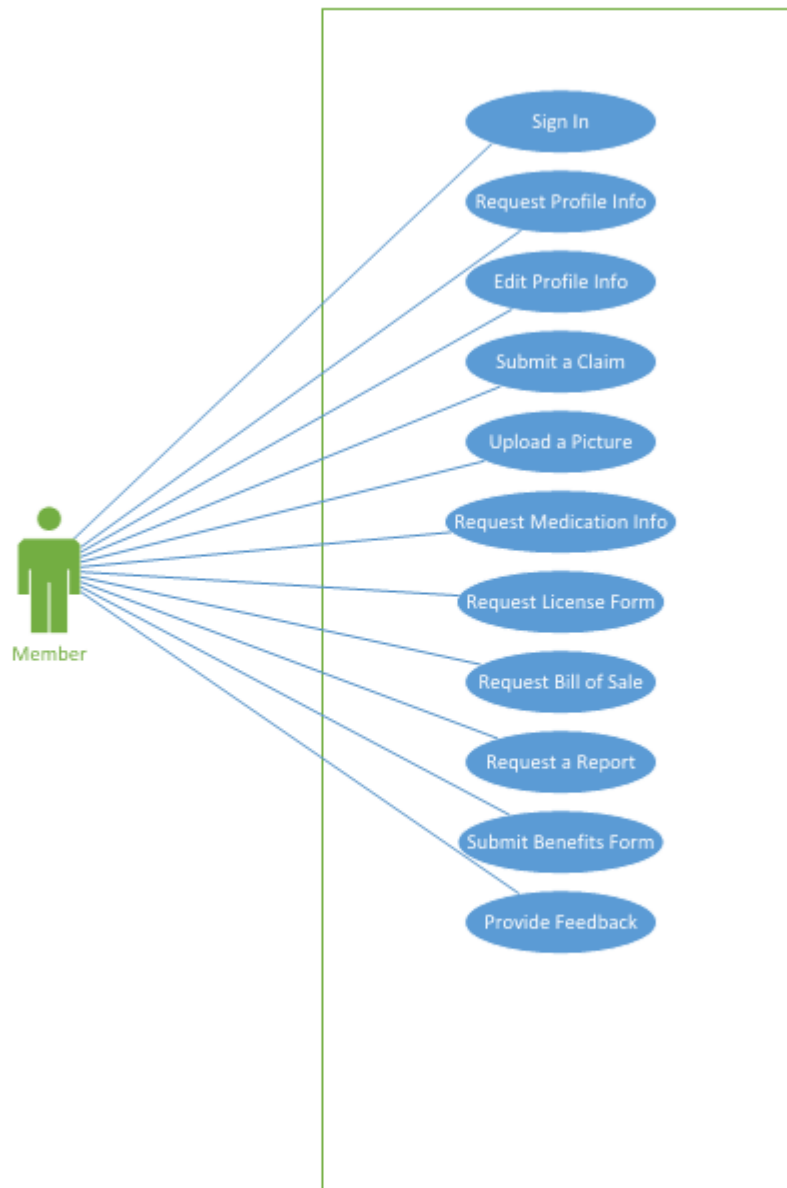


Diagram (cont..)



Trace Matrix Narrative

The trace matrix below is designed to describe the relationship between each system requirement and each use case. More specifically it describes how each use case satisfies the full list of system requirements. An 'X' occurs at the intersection of the requirement and each use case involved in satisfying the requirement

Trace Matrix

[illegible]

Trace Matrix (cont..)

Requirements	Requests Bill of Sale	Signs In	Requests Profile Info	Edits Profile Info	Requests Calendar of Events	Requests Photo Gallery	Submits Benevolence Form	Provides Feedback	Requests Contact Info	Contact KY HBPA
The website will process transactions electronically.	X	X	X	X	X	X	X	X	X	X
The website will be able keep track of members through a back-end database.		X	X	X						
The website will be able to associate documentation with users		X	X	X			X			
The website will allow users to contact the KHBPA through email.									X	X
The system will keep track of and allow for management of a calendar of events					X					
The system will store photos and videos						X				
The system will store and allow downloading of a bill of sale form	X									
The system will support online benefits form submission and store related data							X			
The system will allow users to provide feedback								X		X
The system will store and report contact info for the board of directors									X	X

Requirements	Search News Archive	Send Newsletter
The website will process transactions electronically.	X	X
The website will contact users when they need to be contacted		X

Use Cases

Use Case Specification: Creates Account

Brief Description

A user creates an account by providing personal information, an email address, and a password. By doing so this user becomes a member of the KHBPA and gains the benefits of membership (access to members-only features).

Preconditions:

None

Main Flow

1. User selects "Join KY HBPA" action
2. System serves create account screen
3. User enters First Name
4. User enters Last Name
5. User enters Stable, Corp., or Farm Name
6. User enters Managing Partner
7. User enters Address
8. User enters City
9. User selects State
10. User enters Zip Code
11. User enters Primary Phone Number
12. User enters E-mail address
13. User enters Password
14. User selects best description of themselves from: "Owner", "Trainer", or "Owner & Trainer"
15. User enters KRS License #
16. User digitally signs form
17. User agrees to terms
18. User clicks "Join Now" button
19. System validates user inputs
20. System stores form values in database

Postconditions

1. A new account has been created

Alternative Flows

1. InvalidEmailAddress
2. FormNotDigitallySigned
3. TermsNotAgreedTo

Alternative Flow: InvalidEmailAddress

Brief Description

The system marks the email address field as invalid

Primary Actor

User

Preconditions

1. The user has entered an invalid email address

Alternative Flow

1. The alternative flow begins after step 19 of the main flow
2. The system informs the user that they have entered an invalid email address by adding a red mark to the email address field.

Postconditions

None

Alternative Flow: FormNotDigitallySigned

Brief Description

The system marks the digital signature field as invalid

Primary Actor

User

Preconditions

1. The user has failed to digitally sign the form

Alternative Flow

1. The alternative flow begins after step 19 of the main flow
2. The system informs the user that they have failed to digitally sign the form by adding a red mark to the digital signature field.

Postconditions

None

Alternative Flow: TermsNotAgreedTo

Brief Description

The system marks the terms agreement field as invalid

Primary Actor

User

Preconditions

1. The user has failed to agree to the terms and conditions

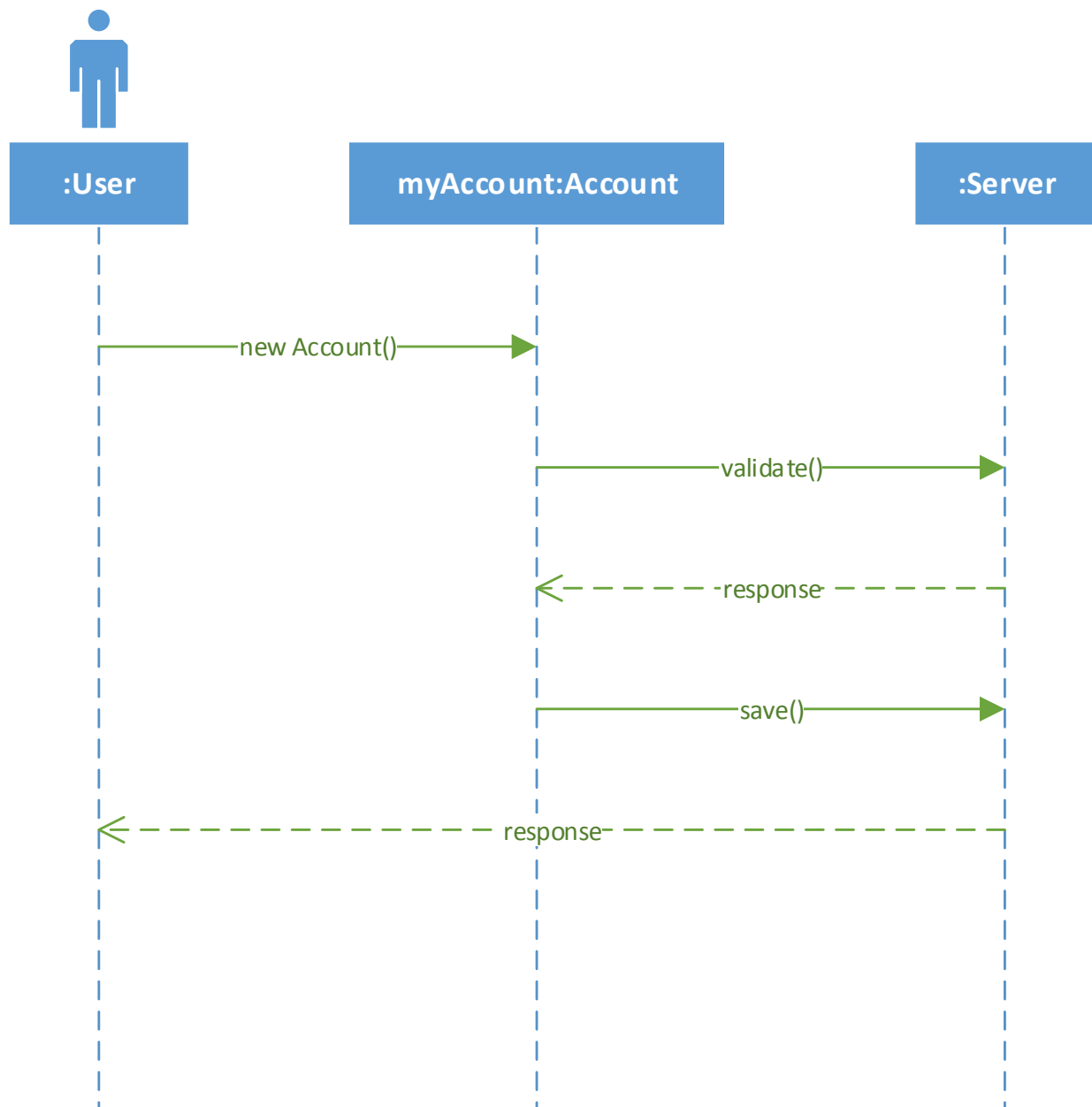
Alternative Flow

1. The alternative flow begins after step 19 of the main flow
2. The system informs the user that they have failed to agree to the terms and conditions by adding a red mark to the terms agreement field

Postconditions

None

Sequence Diagram



Use Case Specification: Makes a Donation

Brief Description

A user has decided that they would like to contribute financially to the KHBPA, so they will make a one-time or recurring donation. To do so they will enter PayPal or credit card information along with the amount they would like to donate and then confirm the donation

Primary Actors

User

Preconditions

None

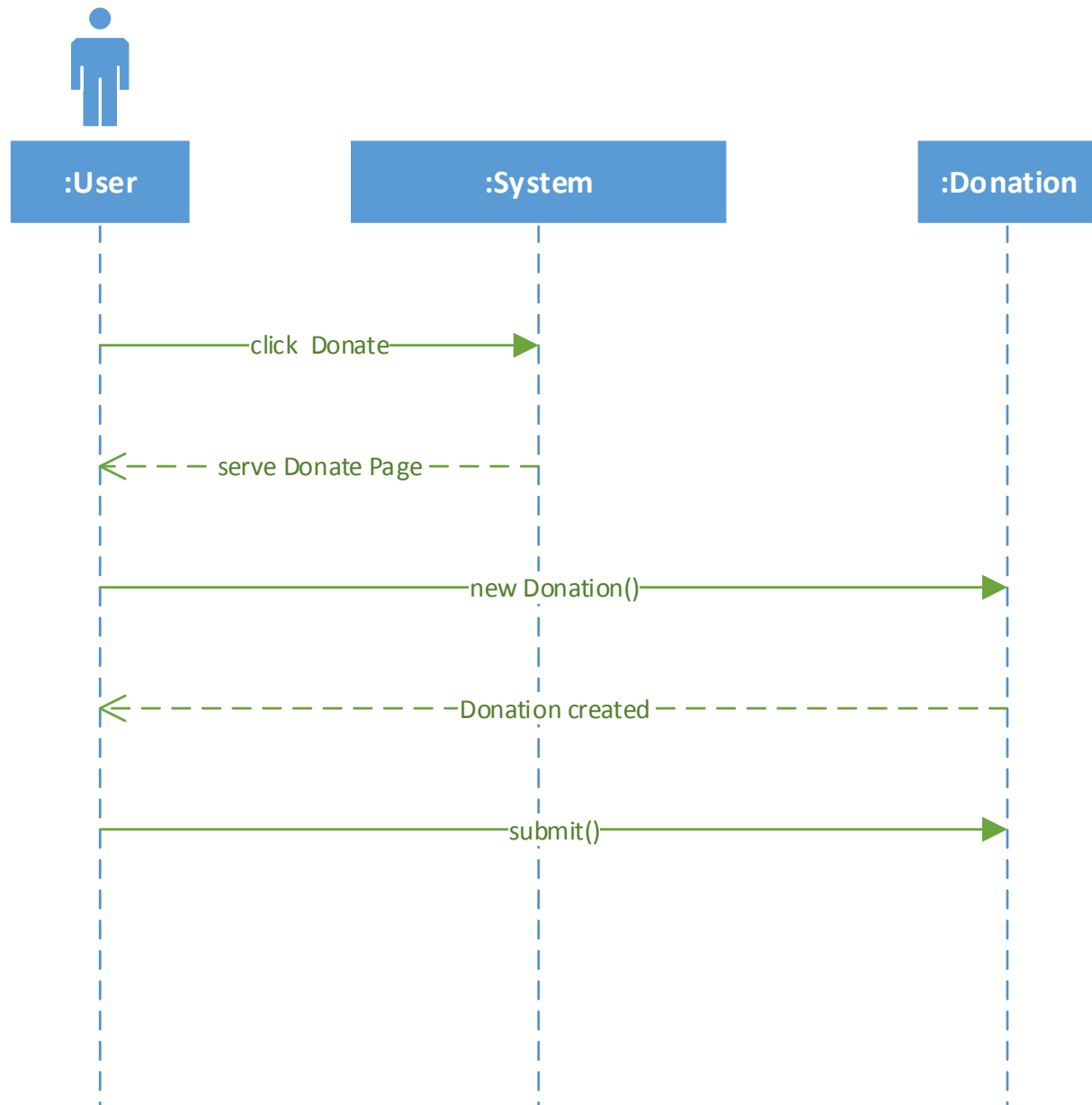
Main Flow

1. User clicks "Donate" button
2. System serves donate screen
3. User selects donation type
4. User selects payment method
5. User clicks "Next"
6. System redirects user to payment portal
7. User enters payment information
8. User submits payment
9. Payment provider accepts payment
10. Payment provider redirects user to "Thank you" page in KY HBPA domain

Postconditions

A donation has been processed to KY HBPA

Sequence Diagram



Use Case Specification: Posts a News Item

Brief Description

An administrator would like to add a news item to the feed so they choose a title and text. Optionally they may also include a link, if the news item is posted on another page. Once this information is submitted, the news item is created in the feed with a date time stamp available for all to see.

Primary Actors

Administrator

Preconditions

Administrator is logged in

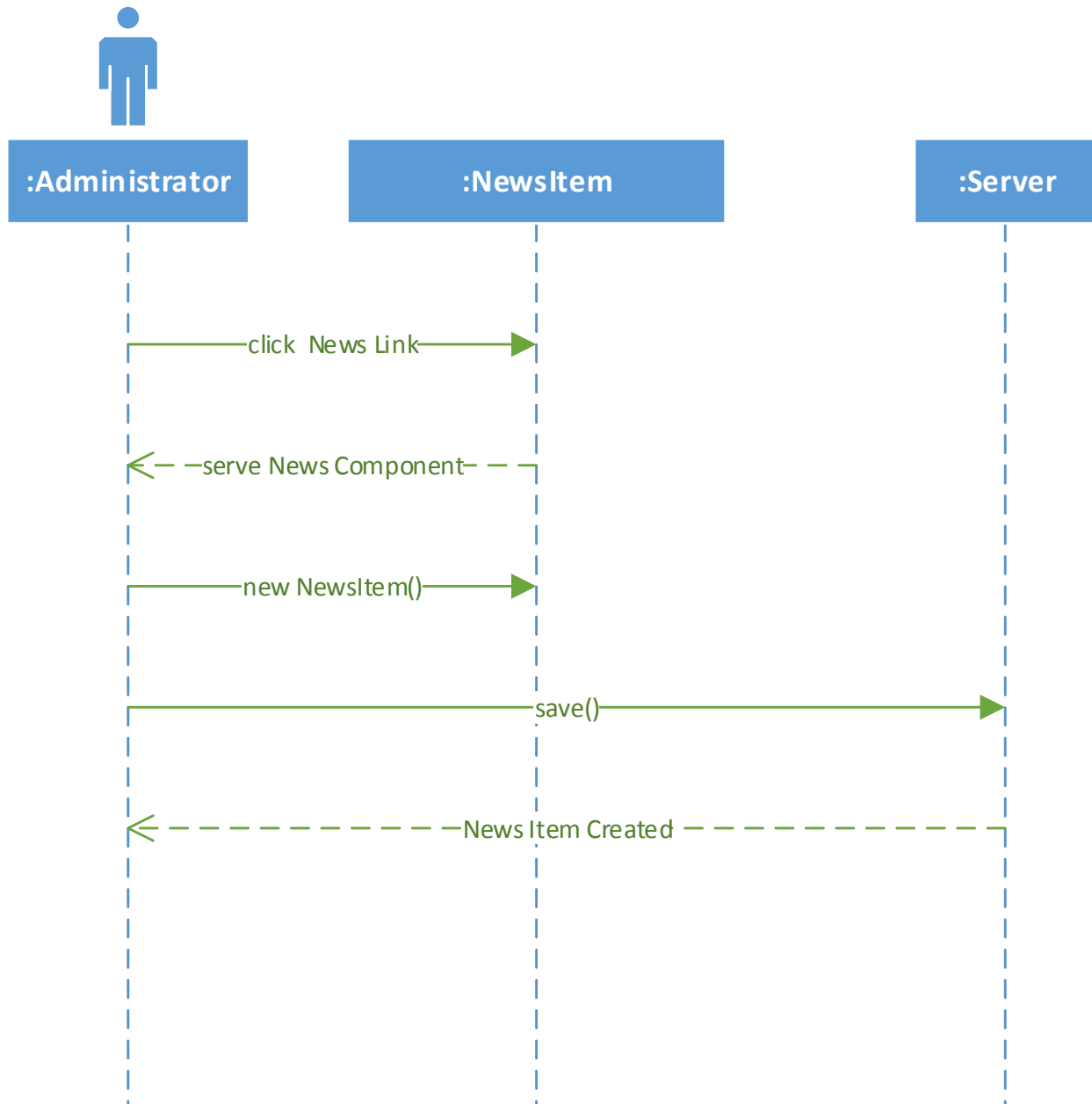
Main Flow

1. Administrator clicks News link
2. System serves news page
3. User clicks "Create Post" button
4. User enters title
5. User enters link address, if any
6. User uploads related picture
7. User enters text description
8. User clicks "submit"
9. System validates user inputs
10. System adds news item to database
11. System returns success message

Postconditions

1. A news item has been created

Sequence Diagram



Use Case Specification: Submits a Claim

Brief Description

A member would like to submit a claim for a horse that has been injured or euthanized on the track. After clicking a submit claim button they are directed to a claim form to fill out. Once filled out, they submit the form to KHBPA where it waits for approval.

Primary Actors

Member

Preconditions

Member is logged in

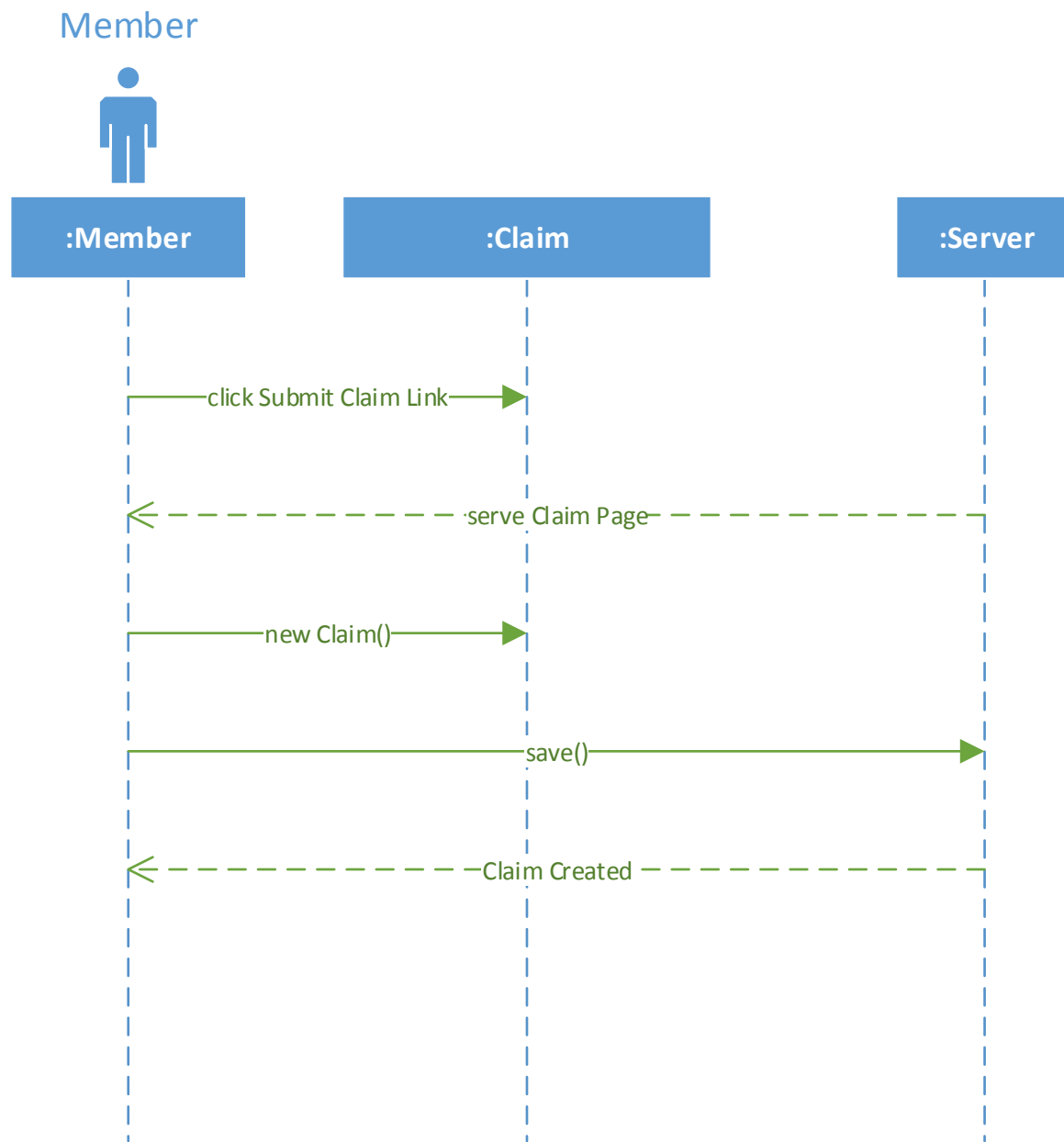
Main Flow

1. Member clicks "Submit Claim" link
2. System serves claim page
3. Member enters owner's name
4. Member enters trainer's name
5. Member uploads veterinarian-signed statement of euthanasia
6. Member submits form
7. System stores claim in database

Postconditions

A claim has been created

Sequence Diagram



Use Case Specification: Signs In

Brief Description

A member signs in to the website using their e-mail address and password chosen when they created their account / signed up for the HBPA. This gives them access to all members-only sections and features of the website.

Primary Actors

Member

Preconditions

None

Main Flow

1. Member clicks "Sign In" button
2. System serves sign in page
3. Member enters e-mail address
4. Member enters password
5. Member clicks "Sign In" button
6. System authenticates credentials
7. System updates user signed in status
8. System redirects user to previous page

Postconditions

The user has been signed in

Alternative Flows

1. InvalidEmailAddress
2. InvalidPassword

Alternative Flow: InvalidEmailAddress

Brief Description

The system marks the email address field as invalid

Primary Actor

Member

Preconditions

1. No account exists for the specified e-mail address

Alternative Flow

1. The alternative flow begins after step 6 of the main flow
2. The system informs the user that they have entered an invalid email address by adding a red mark to the email address field.

Postconditions

None

Alternative Flow: InvalidPassword

Brief Description

The system marks the password field as invalid

Primary Actor

Member

Preconditions

1. The specified password is incorrect

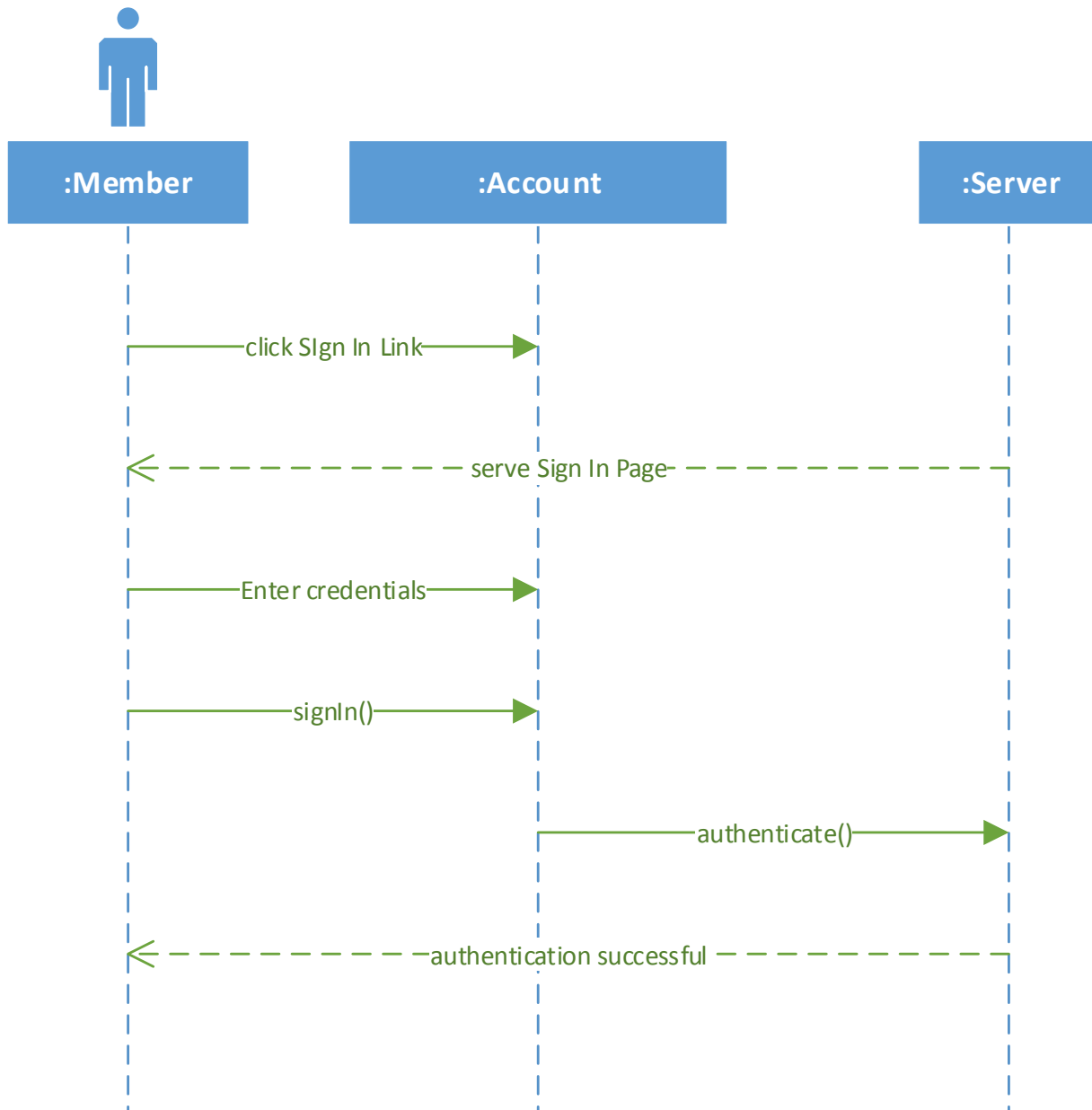
Alternative Flow

1. The alternative flow begins after step 6 of the main flow
2. The system informs the user that they have entered an invalid password by adding a red mark to the password field.

Postconditions

None

Sequence Diagram



Use Case Specification: Request Contact Info

Brief Description

The User navigates to the Contact Us page. The system serves up the Contact Us page containing a list of KHBPA emails, KHBPA phone lines, office location, office hours and a contact us form.

Preconditions:

None

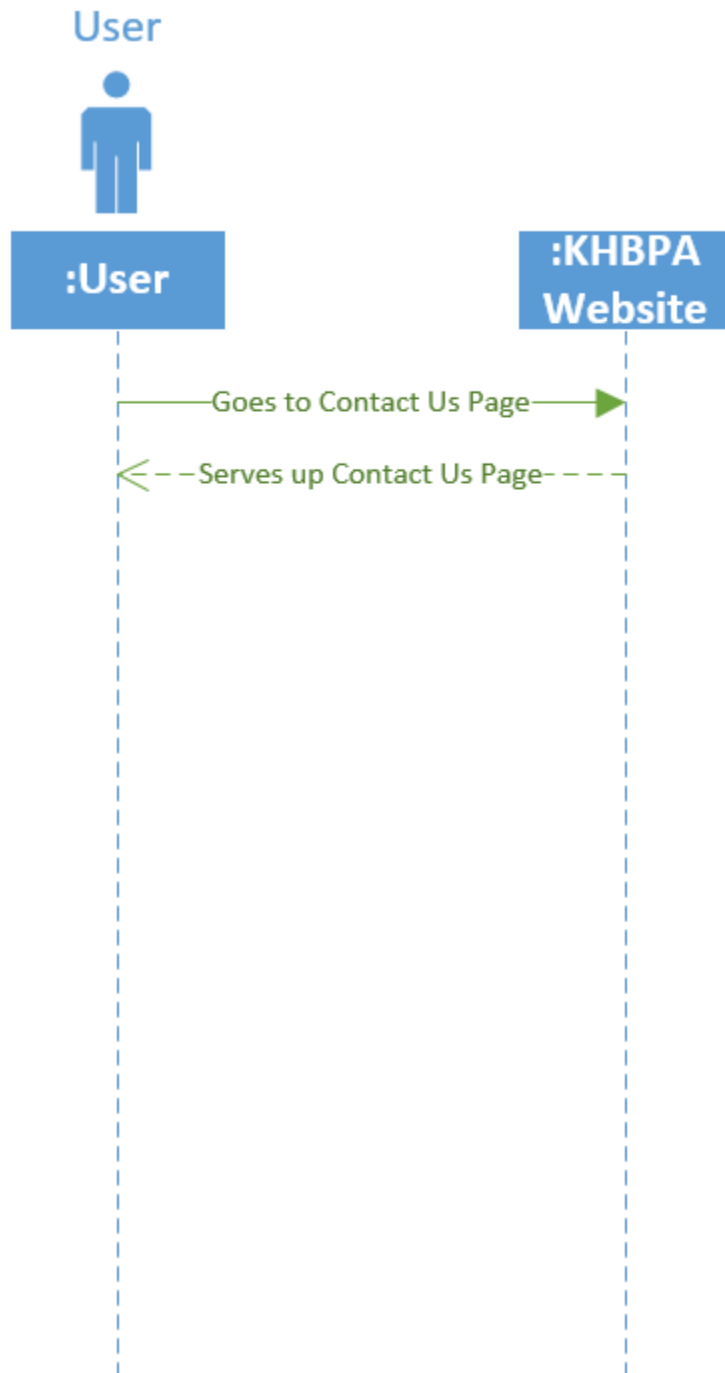
Postconditions:

Contact information is displayed on the screen.

Main Flow

1. User goes to the contact us page.
2. System serves the contact us page.

Sequence Diagram



Use Case Specification: Contact KHBPA

Brief Description

The User navigates to the Contact Us page. The system serves up the Contact Us page containing a list of KHBPA emails, KHBPA phone lines, office location, office hours and a contact us form. The User fills out the contact us form which contains a place for the users email address, a subject line, and a text area for the message. The User submits the form. The server successfully processes the data and sends an email to the KHBPA.

Preconditions:

None

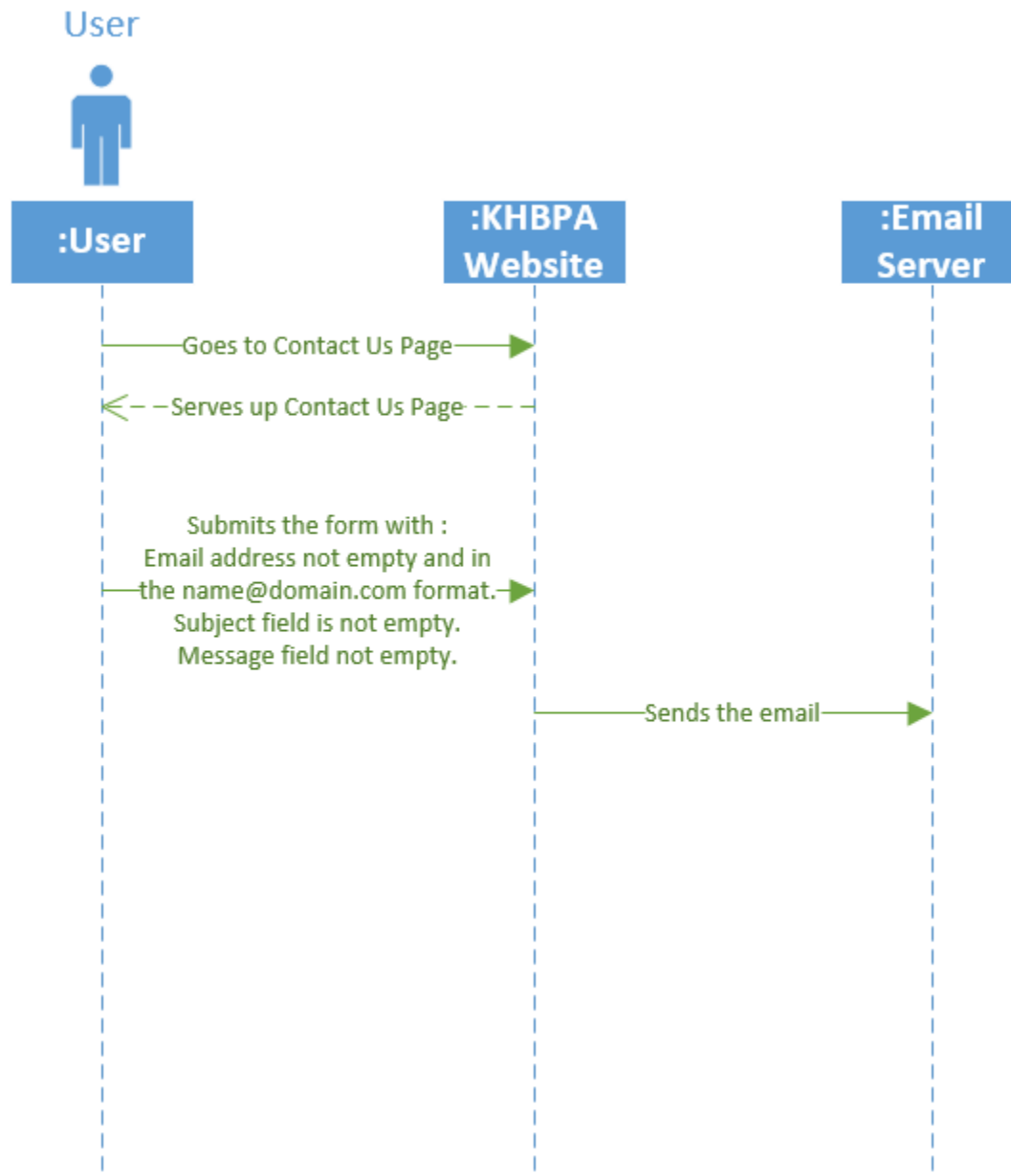
Postconditions:

An email is sent to KHBPA.

Main Flow

1. User goes to the contact us page.
2. System serves contact us page.
3. User enters their email address.
4. User enters the desired subject header.
5. User enters the message body.
6. User clicks the submit button.
7. System successfully processes the fields.
8. System sends an email to the KHBPA.

Sequence Diagram



Use Case Specification: Provide Feedback

Brief Description

The member navigates to the Contact Us page. The system serves up the Contact Us page. The member clicks the “Feedback” button. The system serves a survey form to the member. The member fills out the survey, which will contain questions defined by the KHBPA and a text area to fill out any comments or messages they wish to send. The member submits the form. The server successfully processes the form and stores it in the database. The server also sends a notification email to the KHBPA administration notifying comments have been filled out.

Preconditions:

User is signed into a member account.

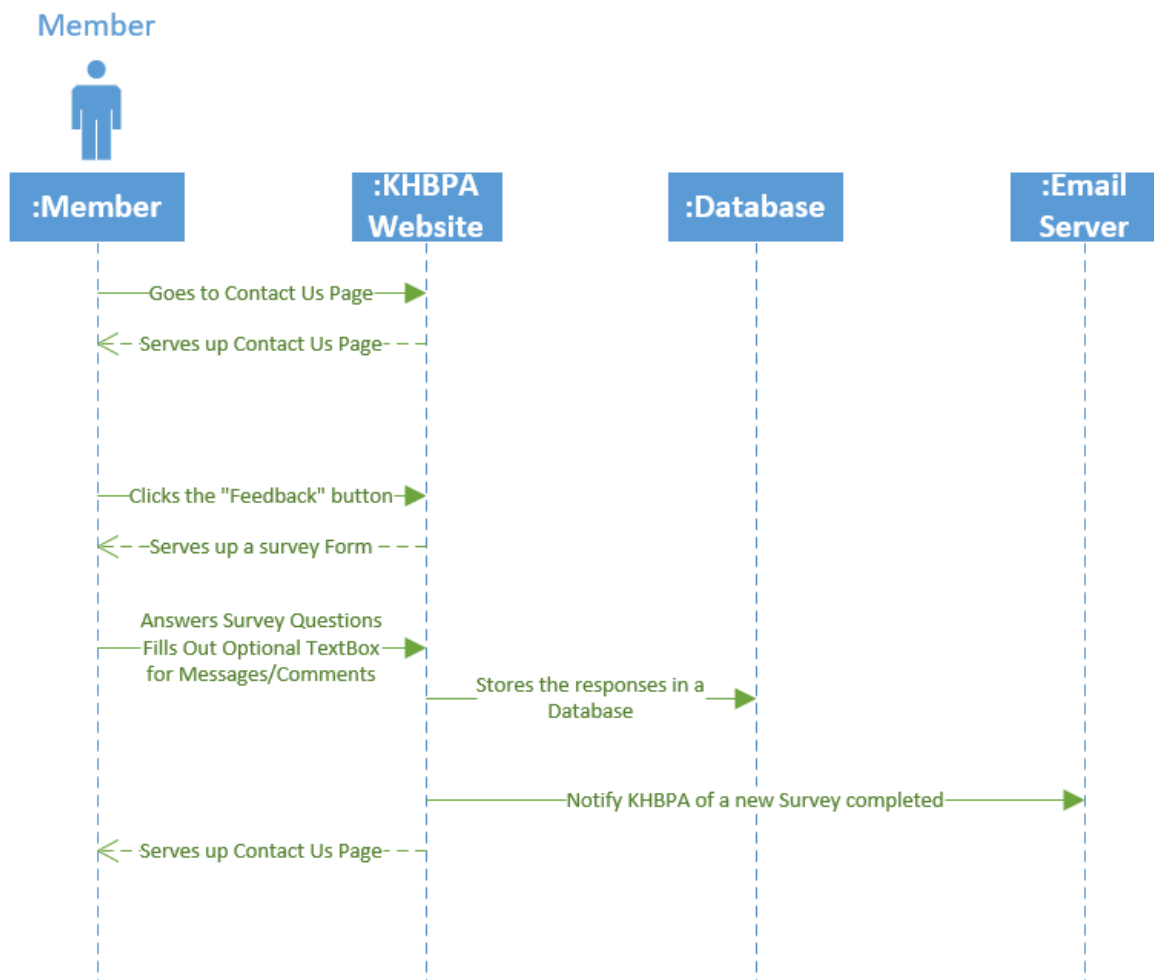
Postconditions:

A feedback survey is saved in a database and an administrator is notified.

Main Flow

1. Member goes to the contact us page.
2. System serves the contact us page.
3. Member clicks on the “Feedback” button.
4. System serves a survey form.
5. Member answers the survey questions.
6. Member enters comments/messages in the text area.
7. Member clicks submit button.
8. System successfully processes the fields.
9. System stores the fields in a database.
10. System notifies KHBPA administrator of a new feedback survey filled out via email.

Sequence Diagram



Use Case Specification: Request Calendar of Events

Brief Description

The User navigates to the Calendar page. The system serves up the Calendar page containing a calendar containing a list of event.

Preconditions:

None

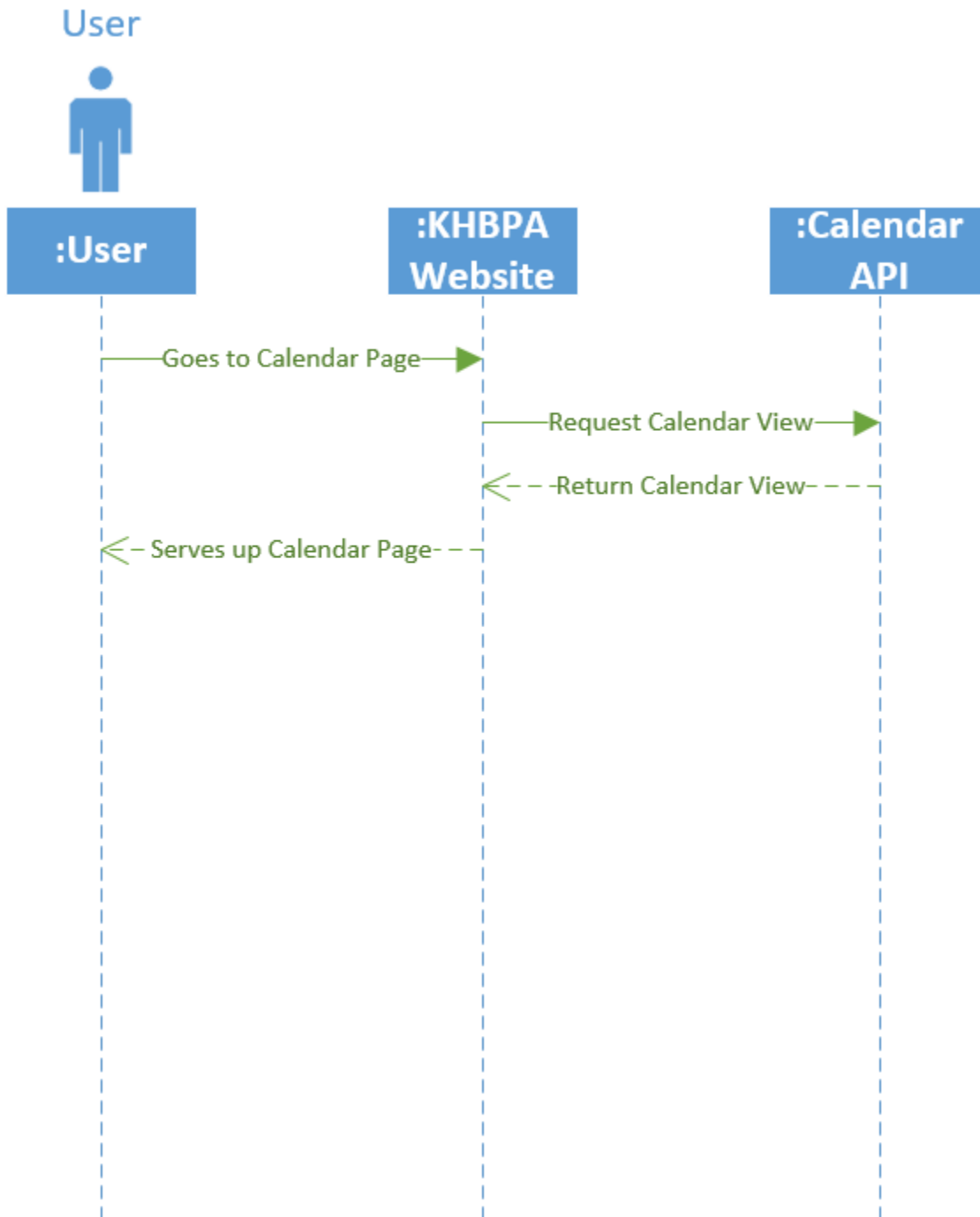
Postconditions:

The calendar and all events are displayed on the screen

Main Flow

1. User goes to the calendar page.
2. System serves the calendar page.

Sequence Diagram



Use Case Specification: Create Event

Brief Description

The admin navigates to the Calendar page. The system serves up the calendar page. The admin selects a date to create an event. The system serves up a form to create an event on that day. The admin fills out that form, which includes mandatory fields for the event title, event description, event location, and starting and ending times for the event. The admin submits a valid form. The server successfully processes the form to create a new event. This event is added to the calendar and an email blast is sent to notify all subscribers.

Preconditions:

User is signed into an administrator account.

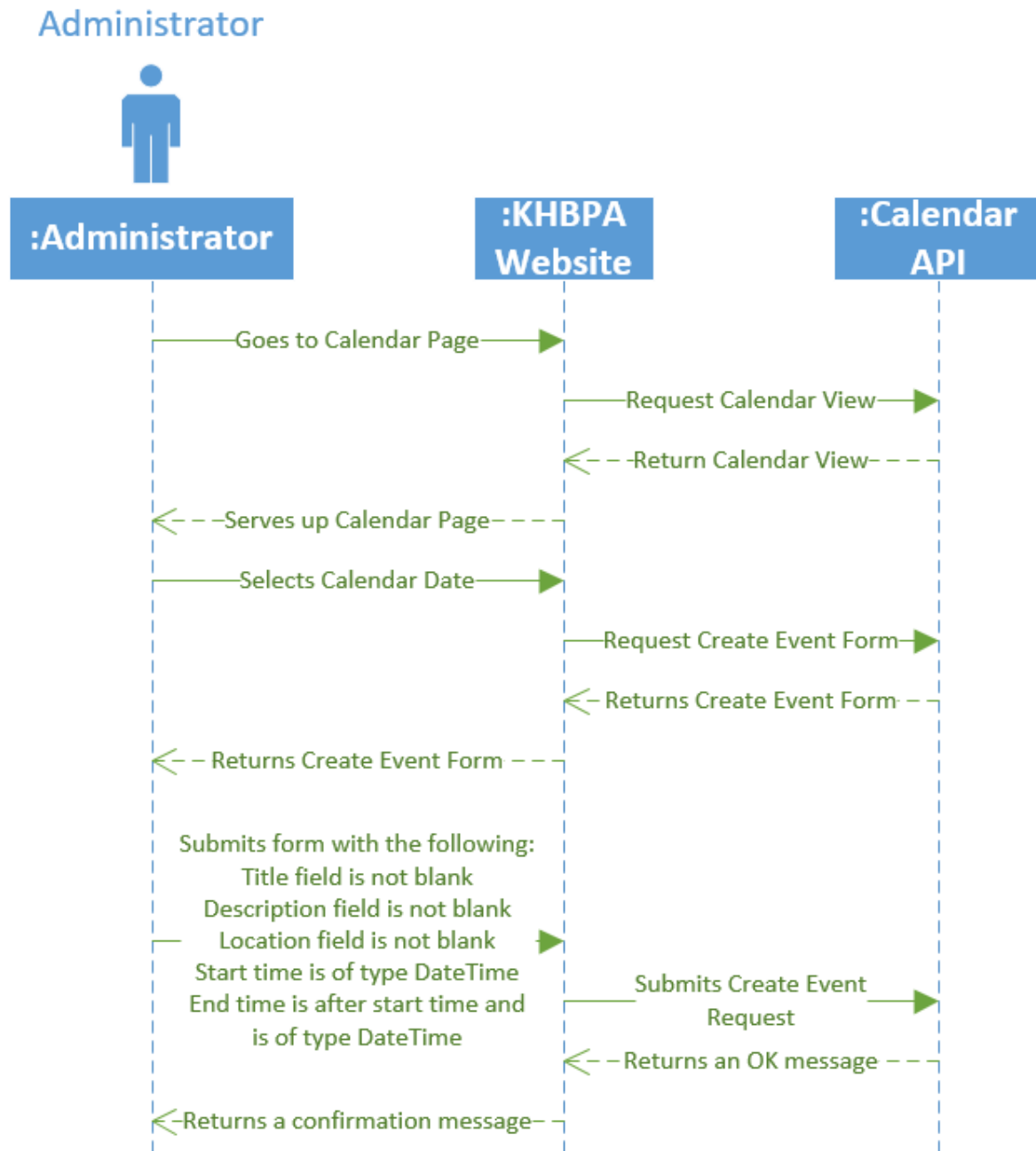
Postconditions:

An event is created with the information the administrator provided.

Main Flow

1. Admin goes to the calendar page.
2. System serves the calendar page.
3. Admin clicks on a day to create an event.
4. System serves a create event form.
5. Admin enters the event title.
6. Admin enters the event description.
7. Admin enters a location for the event.
8. Admin enters a starting time for the event.
9. Admin enters an ending time for the event.
10. Admin clicks submit button.
11. System successfully processes the fields to create an event.
12. System adds the event to the calendar.
13. System email blasts all subscribers.

Sequence Diagram



Use Case Specification: Request License Form

Description:

A user would like to view or fill out a license form. The license forms are uploaded to the server so that when a user requests one it can be downloaded and filled out immediately.

Main Flow:

1. User goes to the license form page
2. System serves the license form page
3. User clicks on a link to request a license form
4. System serves as the license form
5. User downloads form to view or print it
6. User prints the form fills out the required information
7. User faxes/emails form back to the KHPBA or mails form to the tracking office
8. System successfully processes this data
9. System determines if the user qualifies for a specific license
10. System adds user to list of licensed users

Preconditions:

None

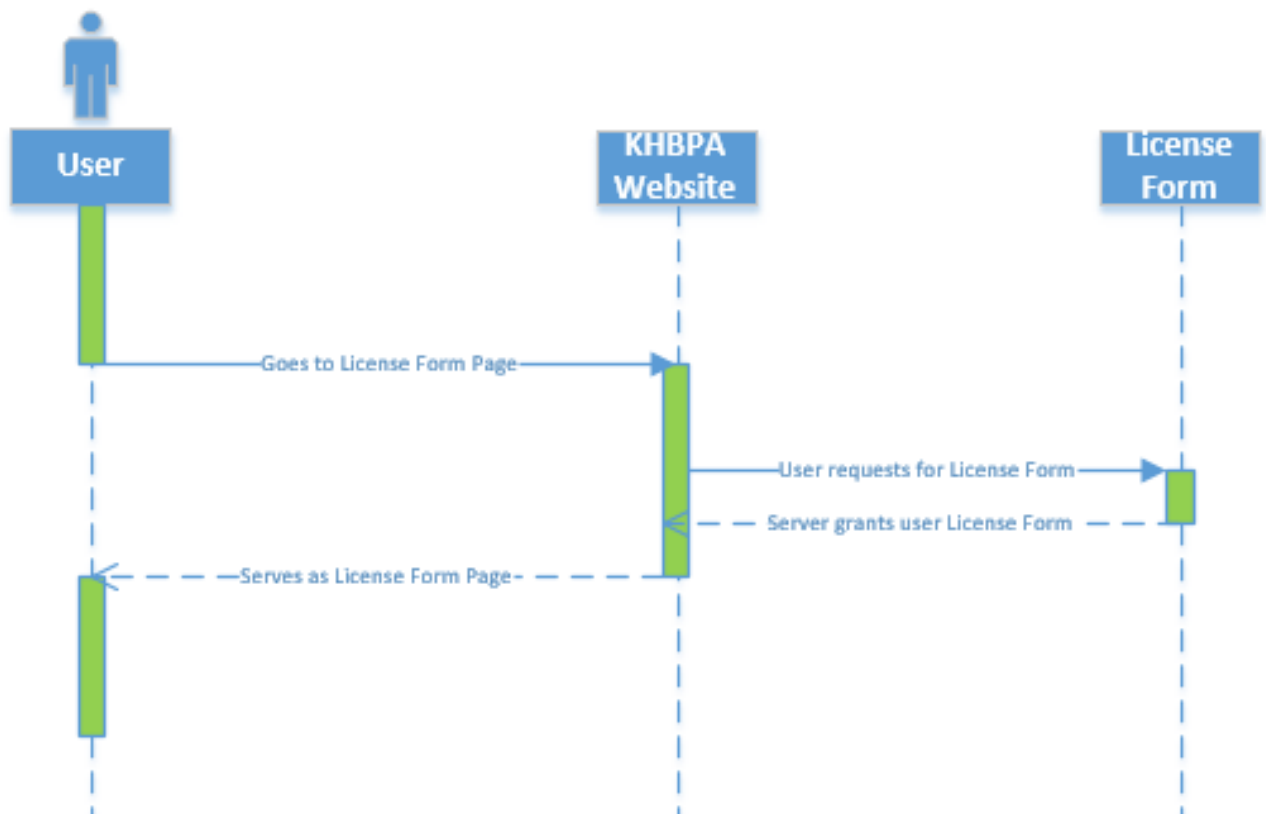
Postconditions:

User is now a licensed user.

Alternate Flow:

The user does not enter all of the required fields in the document upon submission. Instead of the system successfully processing the form, the system validation of user input fails and request is not granted.

Sequence Diagram



Use Case Specification: Request Bill of Sale

Brief Description

A user would like a bill of sale document. To get one they must follow the documents link, then choose the Bill of Sale option. The bill of sale document is then sent to the user where it can be viewed or printed.

Main Flow:

1. User goes to the documents link
2. System serves as the documents link
3. User chooses the Bill of Sale option
4. System serves the bill of sale option
5. System sends the user the bill of sale document
6. User then has the option to view or print the document
7. User fills out required information
8. System successfully processes this data
9. System grants user's request

Alternative Flow:

A user does not enter all of the required fields to be qualified for a specific bill of sale, so request is not granted and an email notification is sent to the user.

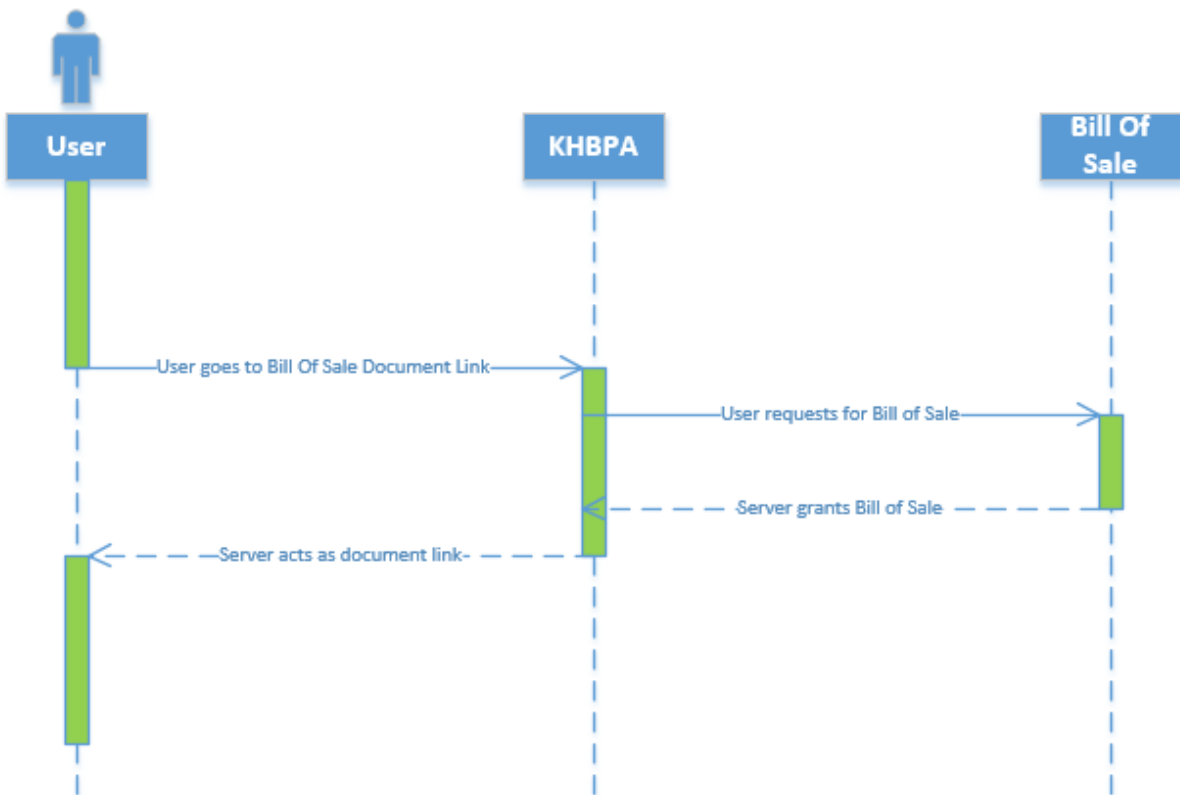
Preconditions

None

Postconditions

A user's bill of sale request is granted.

Sequence Diagram



Use Case Specification: Request Calendar of Events

Brief Description:

A user would like to see the current calendar of events. To do so they'll simply click the Events link and be directed to a page that shows all of the events currently posted on the calendar.

Main Flow:

1. User goes to events link
2. System serves as events link
3. User goes to page of events
4. System serves as page of events
5. User can view all of the events posted on the calendar

Alternate Flow

There are no events currently posted on the calendar, so the user may have the option to create an event.

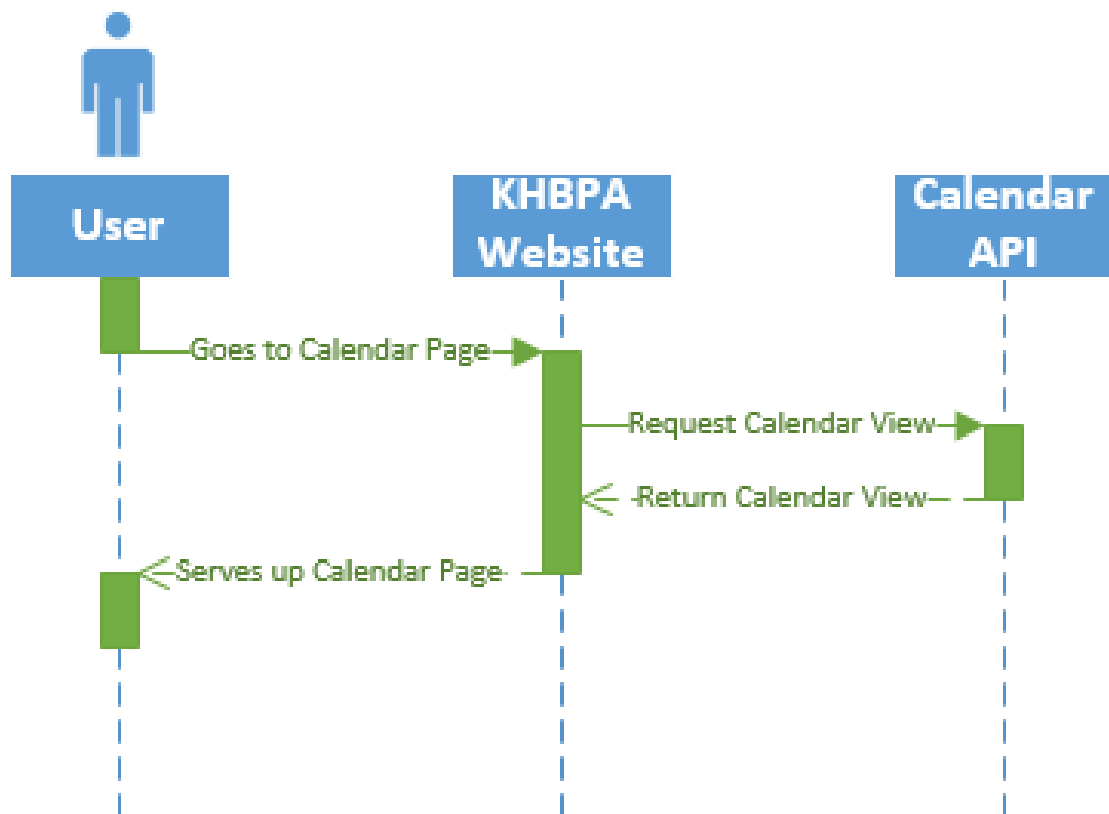
Precondition

None

Postcondition

A user can view all events.

Sequence Diagram



Use Case Specification: Request Photo Gallery

Brief Description:

A user would like to see the photo gallery. To do so they'll simply click the Photos link and be directed to a page that shows all of the photos that have been uploaded. The most recent of these photos might also be available from the main page so alternatively the user may simply click a link below photos on the main page to see the full gallery.

Main Flow:

1. User goes to a photos link
2. System serves as the photos link
3. User goes to a page where all photos have been uploaded
4. User can view photos from gallery

Alternate Flow

No photos are uploaded, so user has the option to upload a photo through a simple link.

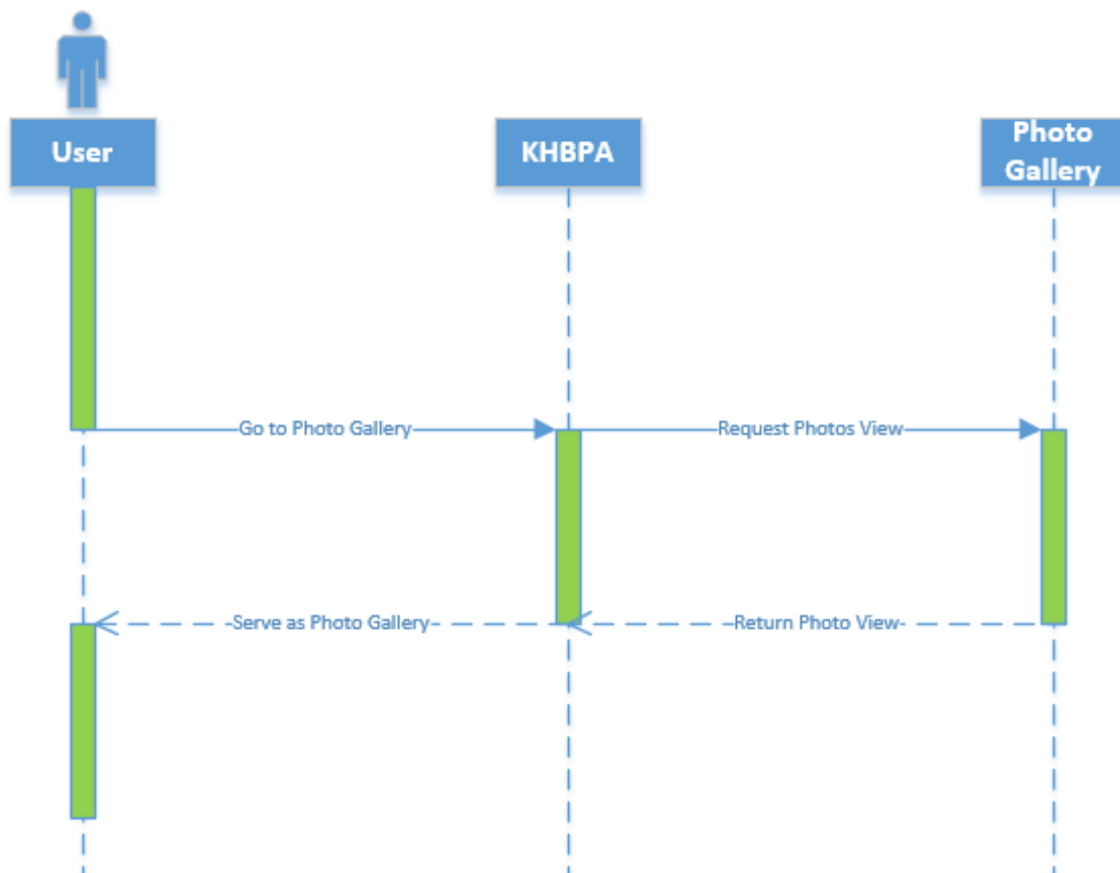
Preconditions:

None

Postconditions:

A user can view and upload photos in the full gallery.

Sequence Diagram



Use Case Specification: Posts a Link

Brief Description

An administrator would like to direct users to a page and therefore would like to post a new link. To do so they must enter a link title and a link address then submit. Once submitted, the new link appears in the links section of the page.

Preconditions:

Must have an Administrator Account.

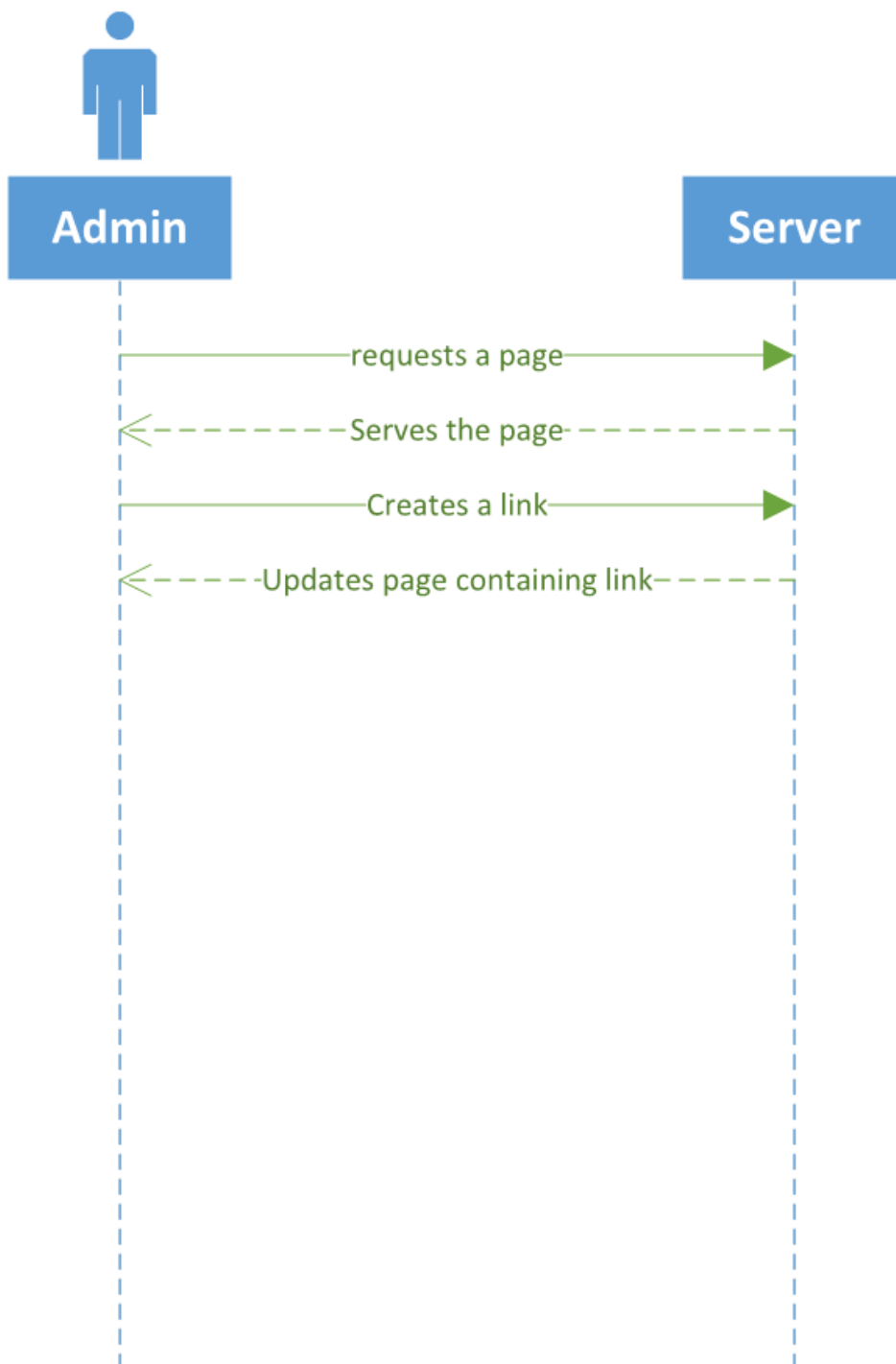
Main flow

1. System provides log on screen.
2. Administrator will log in using their administrator account.
3. System verifies that the log in is an administrator account.
4. Administrator will navigate to the page they want to add a link to.
5. System provides correct navigation to page.
6. Administrator adds link to the page in the desired location.
7. Administrator submits the changes.
8. System validates the url.
9. System allows for the update to go live.

Postconditions

A new link is on the site

Sequence Diagram



Use Case Specification: Votes on a Poll

Brief Description

A user wishes to vote on a poll created by a KY HBPA admin. The poll itself will be embedded in the main page in the polling section, so for users voting is as simple as clicking one of the options and the “Vote” button

Primary Actors

User

Preconditions

None

Main Flow

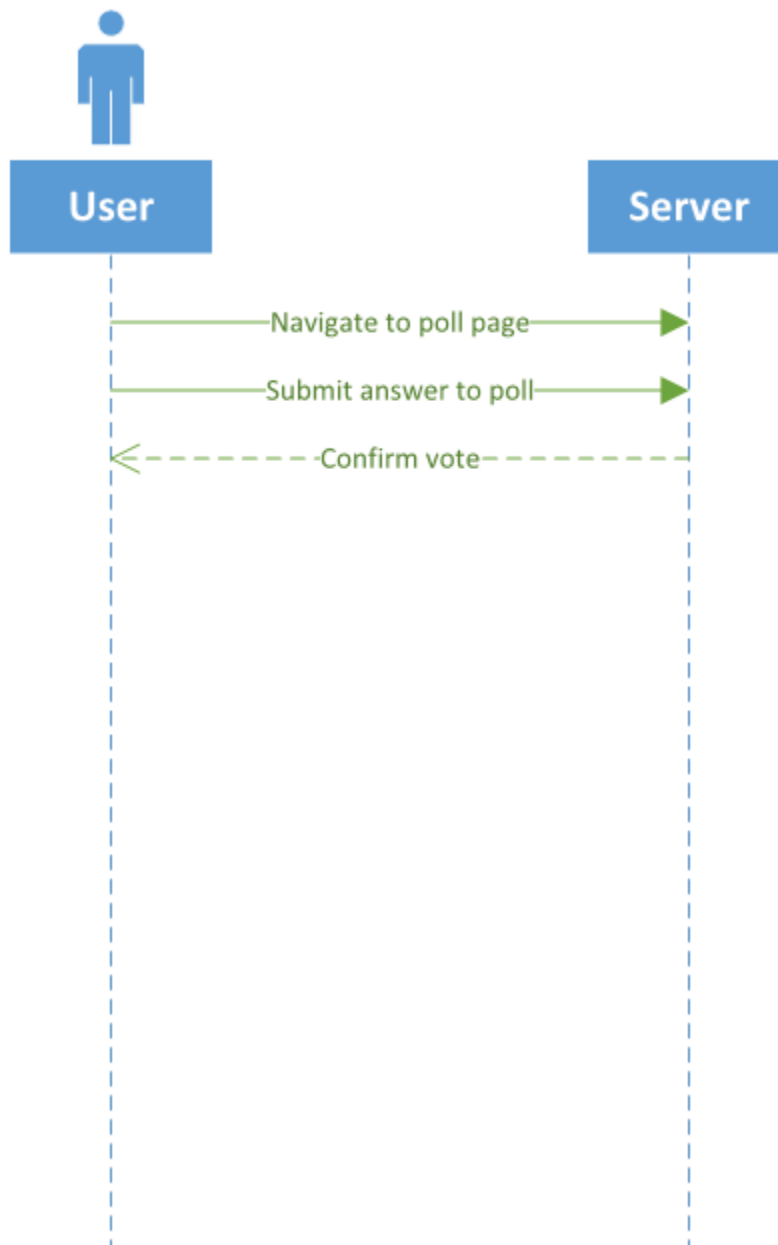
1. User will navigate to the polling page
2. System provides the current poll
3. User selects their response
4. System provides a mark indicating choice
5. User submits their response
6. System provides an acknowledgement that their vote has been submitted

Postconditions

The user has voted on the poll

The user cannot vote again

Sequence Diagram



Use Case Specification: Uploads a Picture

Brief Description

A member would like to upload a KY house racing related picture to the public gallery. To do so the member selects the picture and uploads it to the server. Once on the server, the picture is visible to all KY HBPA administrators who can approve it to be posted. Once approved, the picture appears in the gallery.

Preconditions:

1. The user must be logged into the system.
2. The administrator must be logged into the system.

Main Flow

1. User navigates to the photo gallery page.
2. System provides proper navigation to the page.
3. User clicks on the "Submit a Photo" button.
4. System provides pop-up dialog box prompting an upload.
5. User selects desired photo.
6. System downloads photo.
7. System stores photo for Administrator approval.
8. Administrator goes to photo page.
9. System provides proper navigation to the page.
10. Administrator views newly uploaded photos.
11. Administrator approves of photos.
12. System updates page with newest photos.

Postconditions

New photo(s) have been added to the gallery.

Alternative Flows

NoUpload

Alternative Flow: NoUpload

Brief Description

The system does not receive a picture to upload when the user tries to navigate away from the page

Primary Actor

User

Preconditions

1. The user has not selected a picture to upload

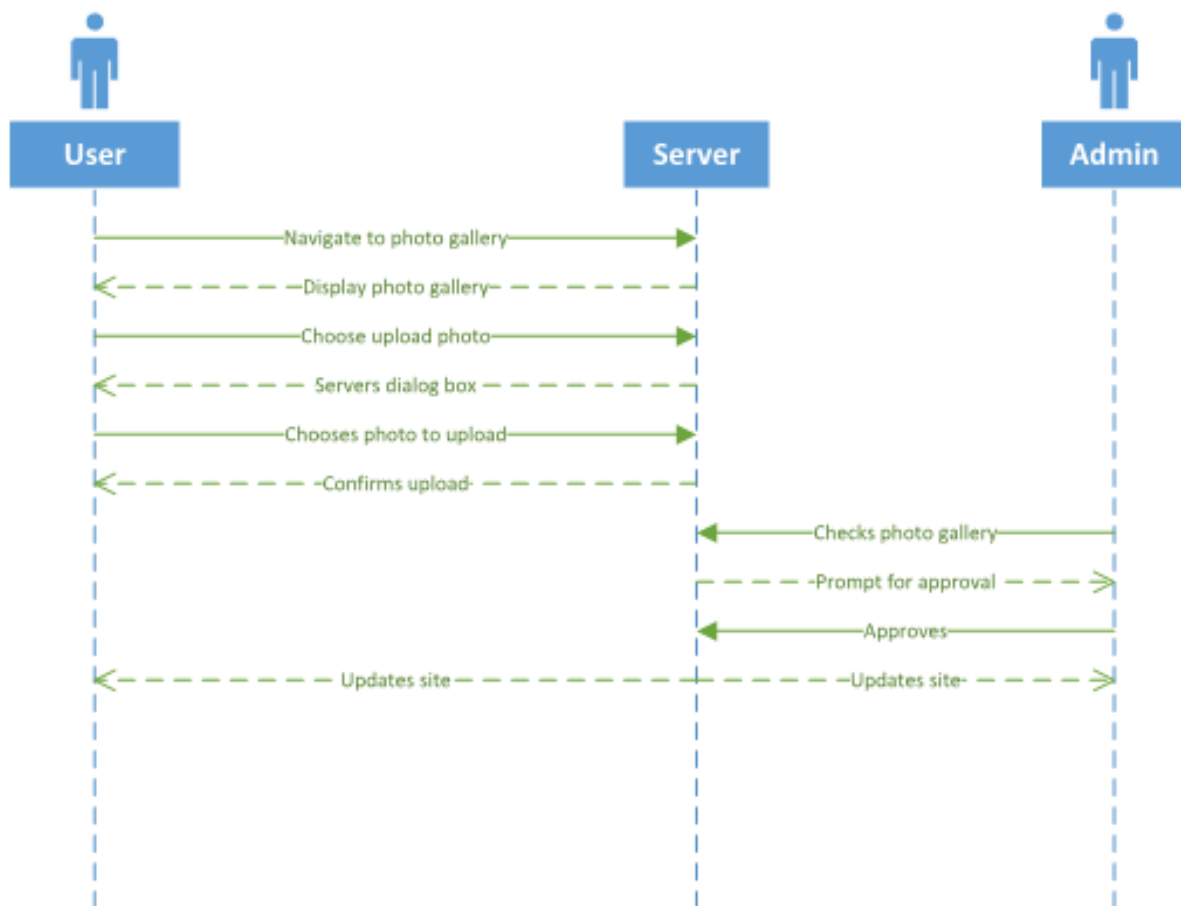
Alternative Flow

1. The alternative flow begins after step 4 of the main flow
2. The system informs the user that they have not yet selected a picture to upload

Postconditions

None

Sequence Diagram



Use Case Specification: Submits Benefits Form

Brief Description

A member would like to submit a benefits form. From the benefits page, they'll click a link to fill out the form, once filled out and submitted, the form will go to the KY HBPA where it will await approval.

Primary Actors

Member

Preconditions

Member is logged on

Main Flow

1. Member will go to benefits page
2. System provides benefits form to fill out
3. Member fills out information online
4. Member submits form
5. System provides storage for the form

Postconditions

The member has submitted a benefits form for approval.

Alternative Flows

1. NotLoggedIn
2. FormIncomplete

Alternative Flow: NotLoggedIn

Brief Description

The system does not recognize that the user is signed in

Primary Actor

Member

Preconditions

1. The user has not logged in

Alternative Flow

1. The alternative flow begins before step 3
2. The system informs the user that to access page completely the user must log in
3. The system prompts for user to log on

Postconditions

User is logged in and can continue

Alternative Flow: FormIncomplete

Brief Description

The system sees that the member has not finished filling out the form

Primary Actor

Member

Preconditions

2. Their form has some sort of missing information in it

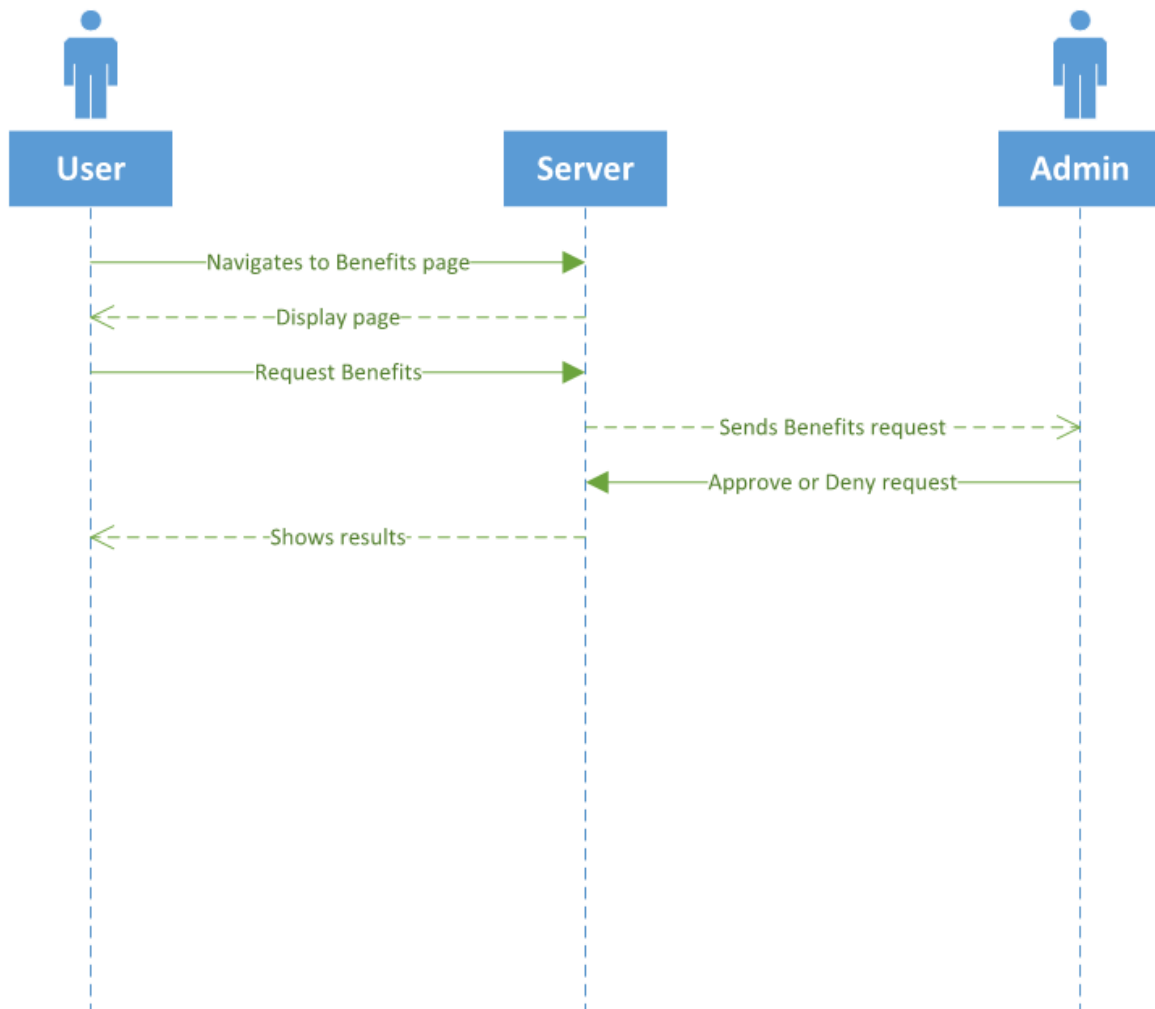
Alternative Flow

4. The alternative flow begins after step 4 of the main flow
5. The system informs the user that they have left blank areas in required spaces

Postconditions

The form highlights or otherwise indicates what areas need to be completed.

Sequence Diagram



Use Case Specification: Search News Archive

Brief Description

A user would like to search through the news archives, so they enter a search term into the Search box on the news page and click “Search”. The user is presented with all of the news items relevant to their query in a scrollable list.

Primary Actors

User

Preconditions

None

Main Flow

1. User will navigate to the News Page
2. System will provide News Page
3. User clicks the search box
4. System indicates that user may type in query
5. User enters query
6. User clicks the search button
7. System looks through archived news for information
8. System provides page of relevant articles
9. User selects desired article
10. System provides the page

Postconditions

The user has found the desired news article

Alternative Flows

1. NoArticle
2. NotValidTerm

Alternative Flow: NoArticle

Brief Description

The system cannot find a relevant news article

Primary Actor

User

Preconditions

None

Alternative Flow

1. The alternative flow after step 7 in the main flow
2. The system informs the user that there is no article found matching the search
3. The system prompts for user for another search

Postconditions

None

Alternative Flow: NotValidTerm

Brief Description

The system sees that the user has entered too generic a search

Primary Actor

User

Preconditions

None

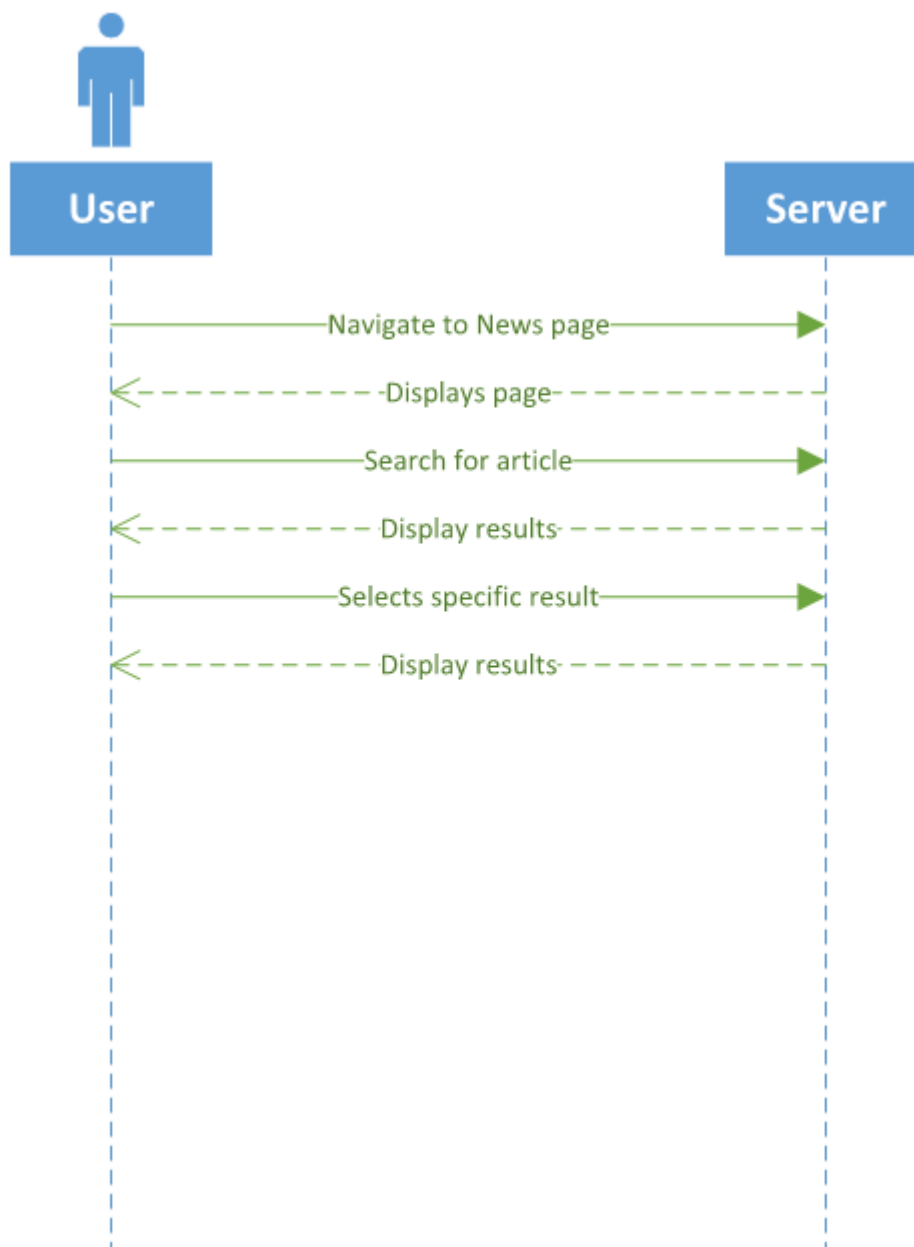
Alternative Flow

4. The alternative flow begins after step 5 of the main flow
5. The system informs the user that they have entered too generic of a search term
6. The system prompts the user to give more information

Postconditions

The search has become more specific

Sequence Diagram



Use Case Specification: Requests Medication Information

Brief Description

A user would like to view or print medication info. To do so they simply click the medication info button from the documents section and select any of the uploaded medication information documents. From there the document is sent to the user where it can be viewed and printed

Primary Actors

User

Preconditions

User is signed into their account

Main Flow

1. User navigates to the Request Documents page
2. System provides the page
3. User selects the needed page(s)
4. System provides a PDF view of the documents
5. User selects to print documents
6. User selects to download documents
7. System transfers the pdf to the user

Postconditions

The user has the needed documentation

Alternative Flows

1. NotLoggedIn

Alternative Flow: NotLoggedIn

Brief Description

The system does not recognize that the user is logged in

Primary Actor

Member

Preconditions

1. The user has not logged in

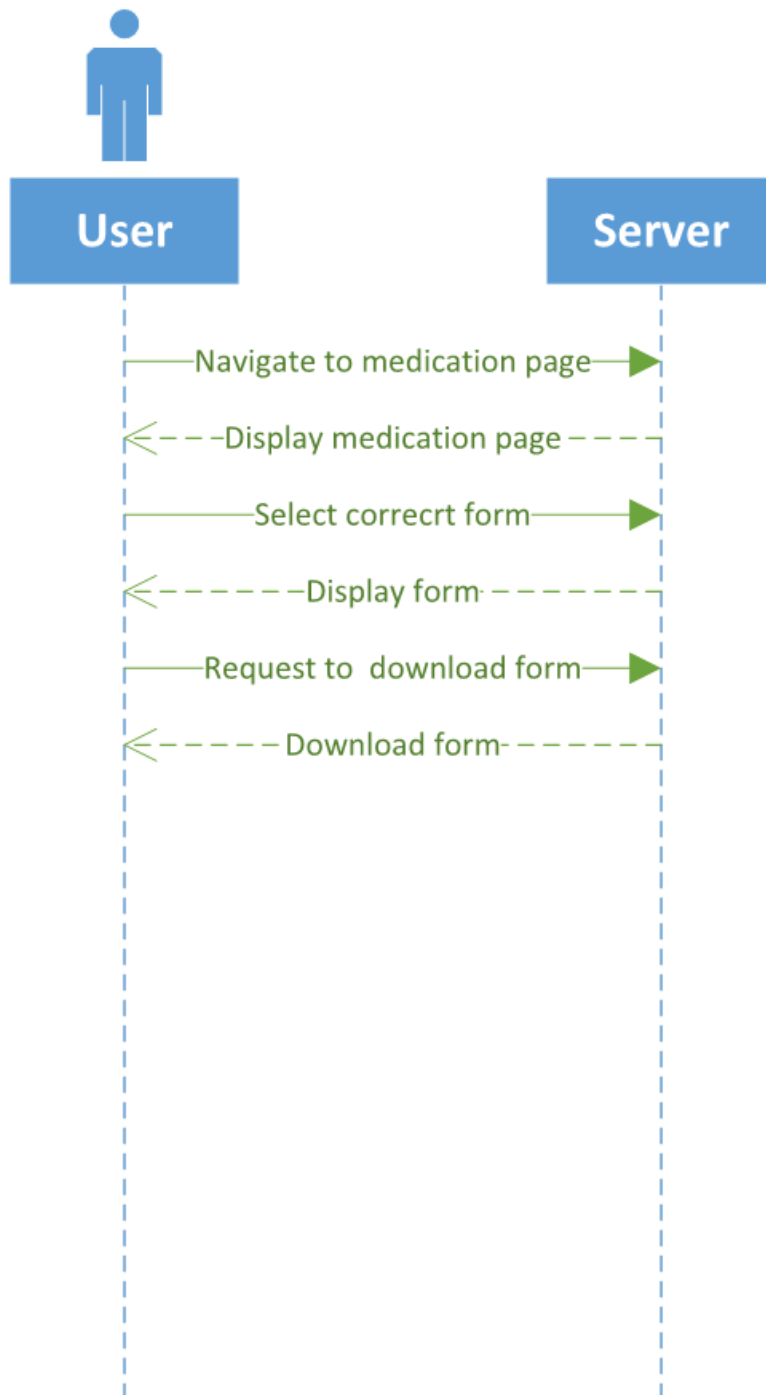
Alternative Flow

1. The alternative flow begins after step 3 of the main flow
2. The system informs the user that they must be logged in to request documents
3. The system prompts for a log in.

Postconditions

None

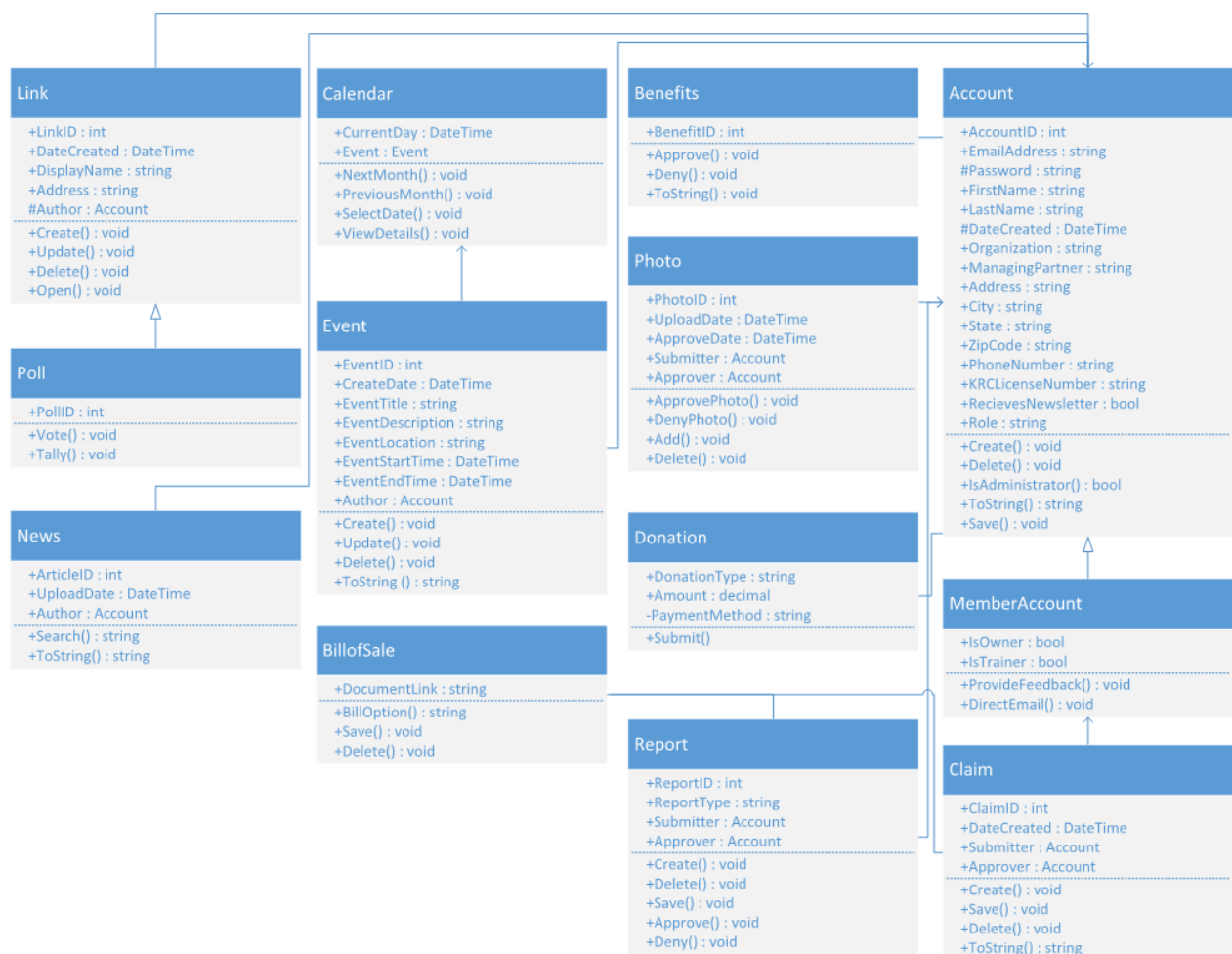
Sequence Diagram



Class Diagram

Explanation

The class diagram is a visual representation of the classes that will be used to build the system. Below, we model the classes and their relationships to visually demonstrate the interconnectivity of this system. This class diagram is dependent on the 'Account' class leaving signatures in other classes to mark who authored and approved what. It was derived using CRC Cards.



CRC Cards

Explanation

Class Responsibility Collaborator Cards, or CRC Cards for short, were used in their inception as tools to teach object oriented programming concepts. Since then, they were adopted into UML design as a high-level concept of how a system will interact and be set up. At the top, the name of the class is listed. On the right actions that this class will be able to perform, and the left shows the classes that this class can interact with.

Cards

Account	
Knows Name	Donation
Knows Login Information	Claim
Knows Profile Information	Report
Can Edit Information	Photo
Makes a Donation	Event
Can be an Administrator	Link
Can file a Claim	News
Can file a Report	
Can post a Photo	
Can approve a Photo	
Can post an Event	
Can post a Link	
Can post a News Article	

Donation

Knows Donor	Account
Knows Amount	
Knows Payment Method	

Claims

Can Be Submitted by an Account	Account
Can be Approved by an Account	

Reports

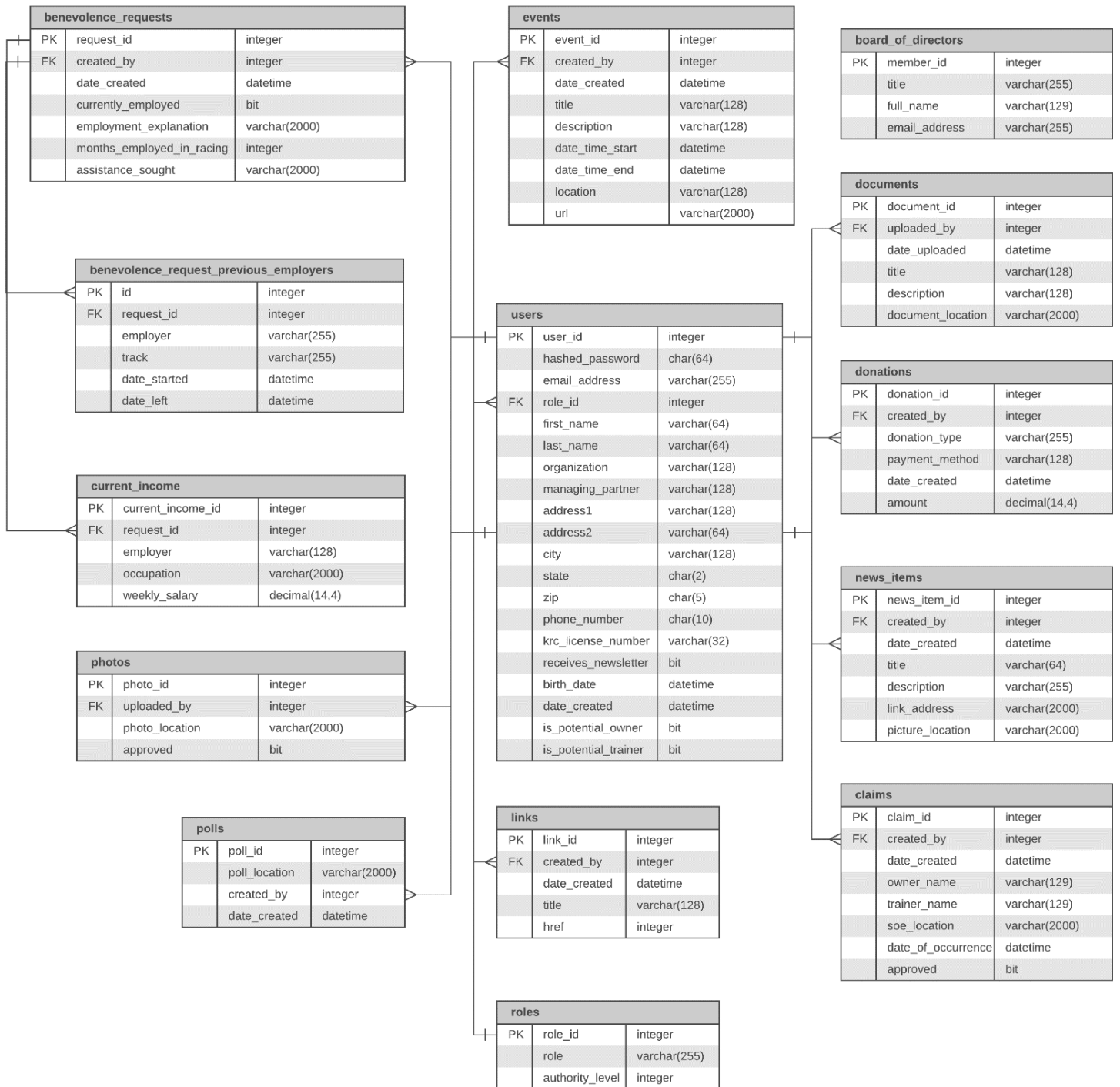
Can Be Submitted by an Account	Account
Can be Approved by an Account	

Database Design and Data Definitions

Explanation

The database design below is in the third normal form (abbreviated 3NF). In simple terms, this means that each field in each table depends directly on the primary key and only on the primary key. Attributes related to each atomic entity are stored in their own tables. For example all users have roles, and roles have authority levels. So you could say that all users have authority levels, but the authority level is dependent on the role, **not** on the user. For this reason *roles* is its own table, and each user has a role id. Doing this eliminates transitive dependence which is very important for ensuring relational integrity and data consistency. This entity relationship diagram was created from the class diagram through analysis of each classes' attributes and methods. Each attribute that requires long term persistence has a corresponding field in the ERD. So each attribute is roughly related to each field and each class is roughly related to each table.

Entity Relationship Diagram



Data Dictionary

benevolence_request_previous_employers

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	id	auto-numbered unique identifier for a benevolence_request_previous_employers record	integer	
FK	request_id	unique identifier of the related benevolence request	integer	
	employer	name of previous employer	varchar	255
	track	name of track where requestor was previously employed	varchar	255
	date_started	the date employment started with this employer	datetime	
	date_left	the date employment ended with this employer	datetime	

benevolence_requests

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	request_id	auto-numbered unique identifier for a benevolence request	integer	
FK	created_by	user_id of benevolence request creator	integer	
	date_created	date and time of benevolence request creation	datetime	
	currently_employed	true if the requestor is currently employed, false otherwise	bit	
	employment_explanation	text explanation of the reason the requestor is not employed, if currently_employed is false	varchar	2000
	months_employed_in_racing	total number of months the requestor has been employed in racing	integer	
	assistance_sought	the type of assistance the requestor is seeking	varchar	2000

board_of_directors

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	member_id	unique identifier of a board member	integer	
	title	board member's title	varchar	255
	full_name	board member's full name	varchar	129
	email_address	board member's email address	varchar	255

claims

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	claim_id	unique identifier of a claim	integer	
FK	created_by	user_id of the claim creator	integer	
	date_created	date and time of claim creation	datetime	
	owner_name	name of horse owner involved in claim	varchar	129
	trainer_name	name of horse trainer involved in claim	varchar	129
	soe_location	statement of euthenasia location in UNC format	varchar	2000
	date_of_occurrence	date and time of claim-relevant event occurrence	datetime	
	approved	true if claim is approved, false otherwise	bit	

current_income

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	current_income_id	auto-numbered unique identifier for a current_income record	integer	
FK	request_id	unique identifier of the related benevolence request	integer	
	employer	name of current employer	varchar	255
	occupation	title of current occupation	varchar	2000
	weekly_salary	weekly salary in dollars	decimal	14,4

documents

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	document_id	unique identifier of a document	integer	
FK	uploaded_by	user_id of document uploader	integer	
	date_uploaded	date and time document was uploaded	datetime	
	title	title of document	varchar	255
	description	description of document	varchar	128
	document_location	location of document in UNC format ex: \\Server\Volume\File	varchar	128

donations

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	donation_id	unique identifier of a donation record	integer	
FK	created_by	user_id of donator	integer	
	donation_type	type of donation (one time, recurring, etc..)	varchar	255
	payment_method	method of payment (credit card, paypal)	varchar	255
	date_created	date and time donation was made	datetime	
	amount	donation amount	decimal	14,4

polls

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	poll_id	unique identifier of a poll	integer	
FK	created_by	user_id of poll creator	integer	
	poll_location	url of poll	varchar	2000
	date_created	date and time donation was made	datetime	

events

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	event_id	unique identifier of an event record	integer	
FK	created_by	user_id of event creator	integer	
	date_created	date and time of event creation	datetime	
	title	title of event	varchar	64
	description	description of event	varchar	128
	date_time_start	start date and time of event	datetime	
	date_time_end	end date and time of event	datetime	
	location	location (address) of event	varchar	128
	url	url of event website, if relevant	varchar	2000

news_items

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	news_item_id	unique identifier of a news item	integer	
FK	created_by	user_id of the news item poster	integer	
	date_created	date and time the news item was posted	datetime	
	title	title of the news item	varchar	128
	description	text description of the news item	varchar	128
	link_address	URL the news item points to where relevant	varchar	2000
	picture_location	location of news item related picture in UNC format (where relevant)	varchar	2000

photos

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	photo_id	unique identifier of the photo	integer	
FK	uploaded_by	user_id of the photo uploader	integer	
	photo_location	location of the uploaded photo in UNC format ex: \\Server\Volume\File	varchar	2000
	approved	true or false indicator of current approval status for a photo	bit	

roles

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	role_id	unique identifier of a role	integer	
	role	name of the role (administrator, member)	varchar	255
	authority_level	numeric indicator of relative power level of a given role	integer	

links

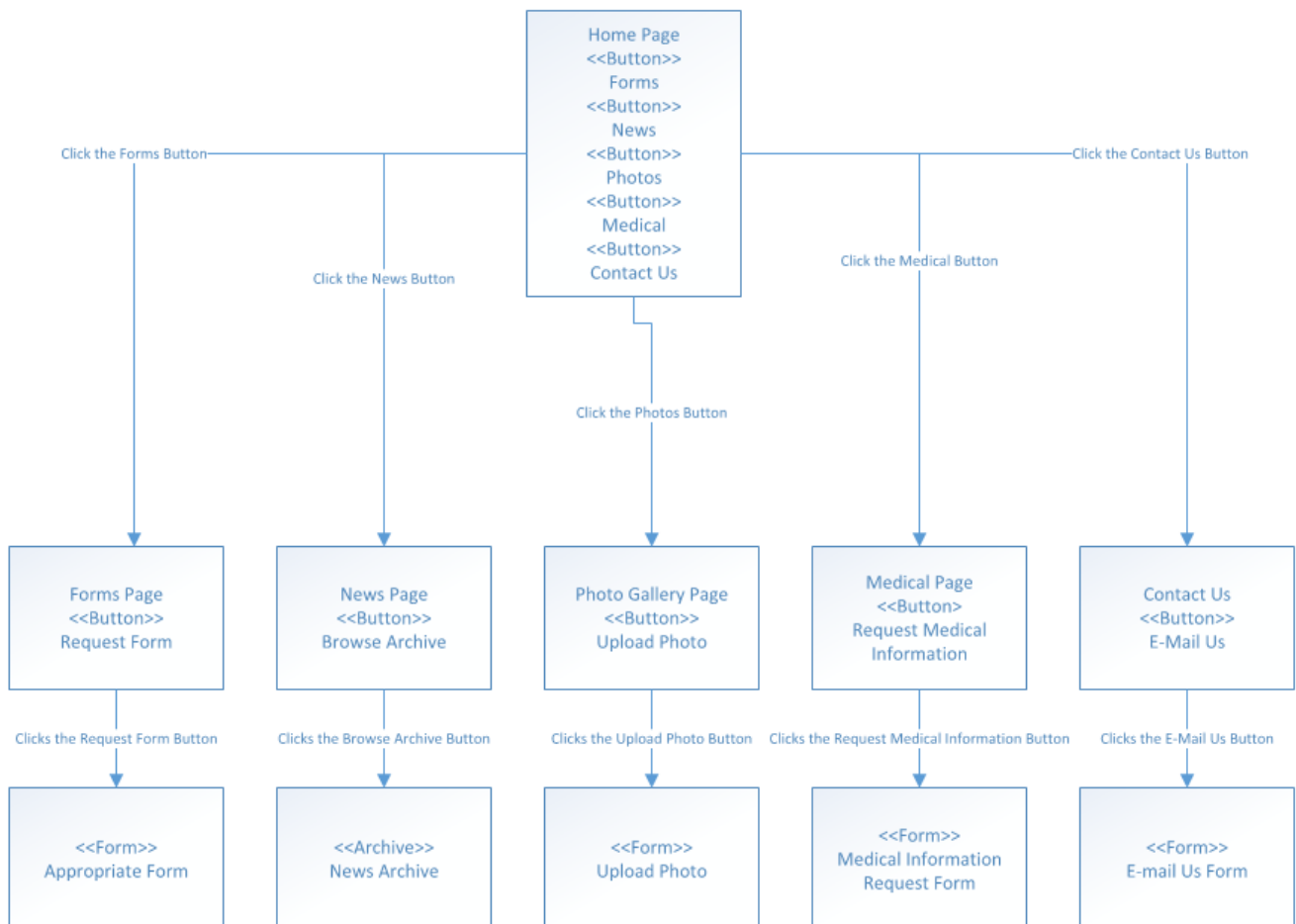
KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	link_id	unique identifier of a link item	integer	
FK	created_by	user id of the link creator	integer	
	date_created	date and time link was created	datetime	
	title	title of the link	varchar	128
	href	URL reference the link points to	varchar	2000

users

KEY	ATTRIBUTE NAME	DESCRIPTION	DATA TYPE	SIZE
PK	user_id	auto-numbered unique identifier for a user	integer	
	hashed_password	hashed password tied to user account	char	64
	email_address	email address of user	varchar	255
	role_id	user's role in system (member, administrator, etc...)	integer	
	first_name	user's first name	varchar	64
	last_name	user's last name	varchar	64
	organization	user's organization (stable, corporation, syndicate, farm)	varchar	128
	managing_partner	user's managing partner	varchar	128
	address1	user's street address	varchar	128
	address2	line 2 of user's address (apt / suite / bldg)	varchar	64
	city	user's city	varchar	128
	state	user's state	char	2
	zip	user's zip code	char	5
	phone_number	user's phone number	char	10
	krc_license_number	user's Kentucky racing commission license number	varchar	32
	receives_newsletter	true if the user has checked that they would like to receive the newsletter, false otherwise	bit	
	birth_date	user's date of birth	datetime	
	date_created	date user account was created	datetime	
	is_potential_owner	true if the user has indicated that they are a potential owner	bit	
	is_potential_trainer	true if the user has indicated that they are a potential trainer	bit	

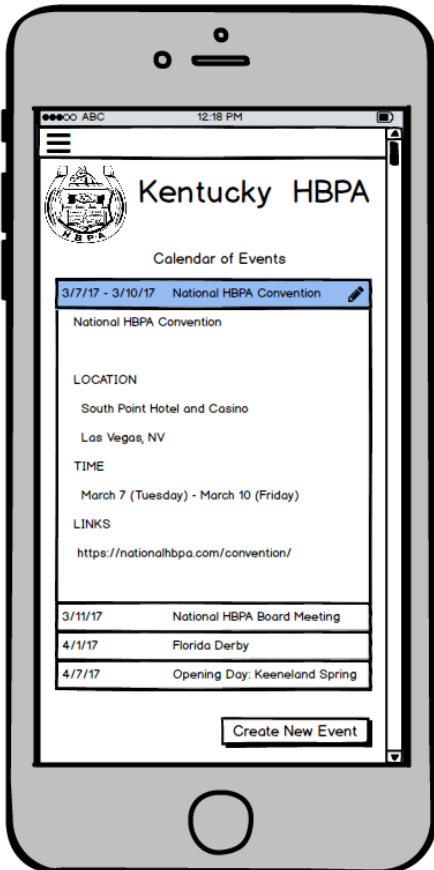
User Interface

Navigation Diagram

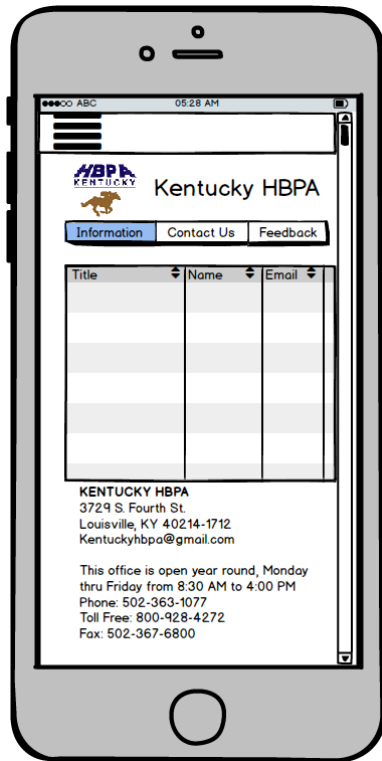


Screen Layouts

This following section will be featuring screen layouts, this is how we imagine the site to look when taking in and displaying information that either the user or admin gives. We divide these prototypes into two different kinds, reports which give information, and forms which need to be given information.



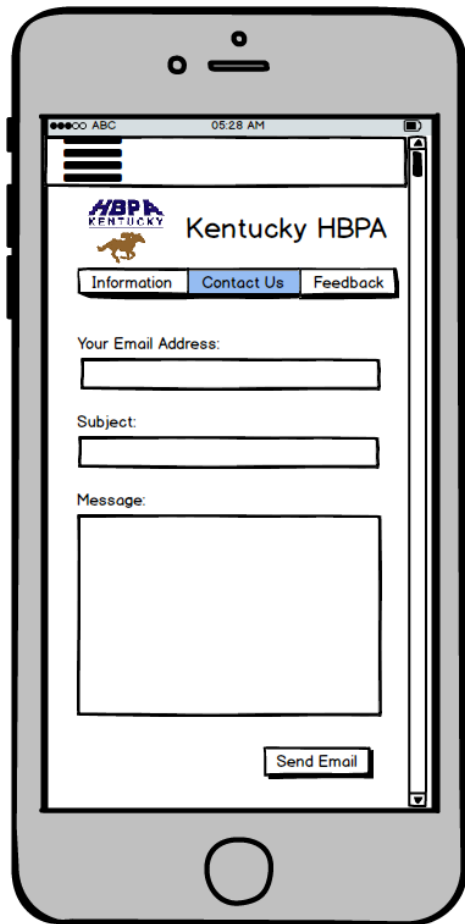
This is the layout we will use to display a calendar of events. In this prototype, we have already set up a fictitious event and filled in all needed areas. One of the big features that the Kentucky HBPA wanted was an easy to use calendar and we believe that this one will work just fine.



This will be what the contact us page will look like. This report will obviously be filled in with actual people from the Kentucky HBPA, but for now we have it as an unpopulated table. It will allow for easy lookup of Kentucky HBPA administrators.

The image shows a smartphone screen with a survey form. At the top, the status bar shows 'ABC' and '05:28 AM'. The app header features the 'HBPA KENTUCKY' logo and the title 'Kentucky HBPA'. Below the header are three tabs: 'Information', 'Contact Us', and 'Feedback'. The main content area contains two survey questions, each with five radio button options: 'Very Good', 'Good', 'Average', 'Poor', and 'Very Poor'. Below the questions is a text input field labeled 'Comments/Messages (Optional):'. At the bottom right of the form is a 'Submit Survey' button.

This is a form for giving feedback to the administrators about whatever it is you may be asking. This will be very similar to the form that will be used to poll your membership basis. Surveying the membership population was certainly one of the main points they stressed as well.



This will be another contact us, this time in a form instead of a report. This will allow a user to send an e-mail to the Kentucky HBPA and ask them any potential questions they may have.

The image shows a mobile app interface for 'Kentucky HBPA'. The app has a status bar at the top with 'ABC' and '12:30 PM'. The main header features the 'Kentucky HBPA' logo and title. Below the header is a 'NEW EVENT' section. The form contains the following fields:

- Start Date:** A date picker showing '3/15/2017'.
- End Date:** A date picker showing '3/15/2017'.
- Event Title:** A text input field containing 'A Fun Event'.
- Event Description:** A text input field containing 'Getting together to do fun things'.
- Location:** A text input field containing '123 Fake St. Louisville, KY, 40208'.
- Link:** A text input field containing 'https://www.funHBPAevent.com'.
- Start Time:** A time picker showing '3:00' and 'PM'.
- End Time:** A time picker showing '5:00' and 'PM'.

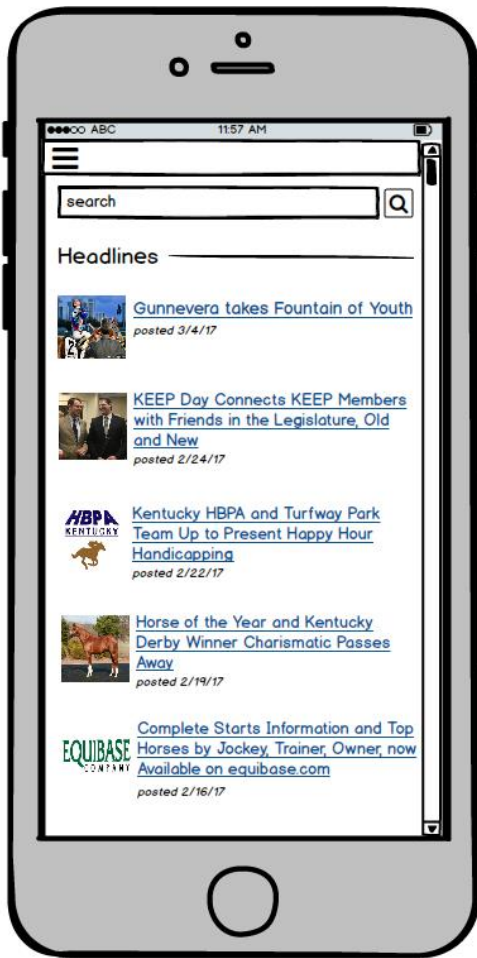
At the bottom of the form is a 'Create Event' button.

Here we have the create an event in form, unlike the previous prototype, this will be what we imagine the screen will look like when someone is creating an event. It will be simple enough, just pick dates and give it a title and description with a location.

The image shows a smartphone screen with a form titled "Kentucky HBPA BENEFIT". The form is designed for mobile use with large, clear input fields. At the top, there is a status bar showing "ABC" and "08:20 AM". The form header includes the Kentucky HBPA logo and the title "Kentucky HBPA". Below the title, the word "BENEFIT" is centered. The form contains the following fields and sections:

- Full Name** and **Social Security #**: Two input fields side-by-side.
- Address**: A single-line input field.
- City**, **State**, and **Zip Code**: Three input fields. The State field is a dropdown menu showing "(State)".
- Phone Number** and **Date of Birth**: Two input fields side-by-side.
- Employer Information Section**: A section titled "Please list the employers for whom you have worked in the past 90 days:". It contains a table with columns: **Employer**, **Track**, **Date Started**, and **Date Left**. Below the table is a button labeled "Add another employer".

Here is the form layout for the submit benefits. In this view you can see what will be needed, such as your name, SSN, address and so on. We believe that with the ease of access and use, it will encourage more people to sign up with the Kentucky HBPA.



This will be our report view for when a user searches through the news and what we believe the screen should look like afterwards. This page allows for a clean view of whatever articles a person may need, as well as a sample picture to help discern what the article may be about.

***ABC 08:20 AM

Horsemen Helping Horseman

I AM A MEMBER OF THE KENTUCKY HORSEMAN'S BENEVOLENT AND PROTECTIVE ASSOCIATION. I UNDERSTAND THAT I AM ENTITLED TO ALL BENEFITS ESTABLISHED BY THE HBPA FOR ITS MEMBERS.

Name

First Name Last Name

Stable, Corporation, Syndicate, or Farm (if applicable)

Managing Partner

Address

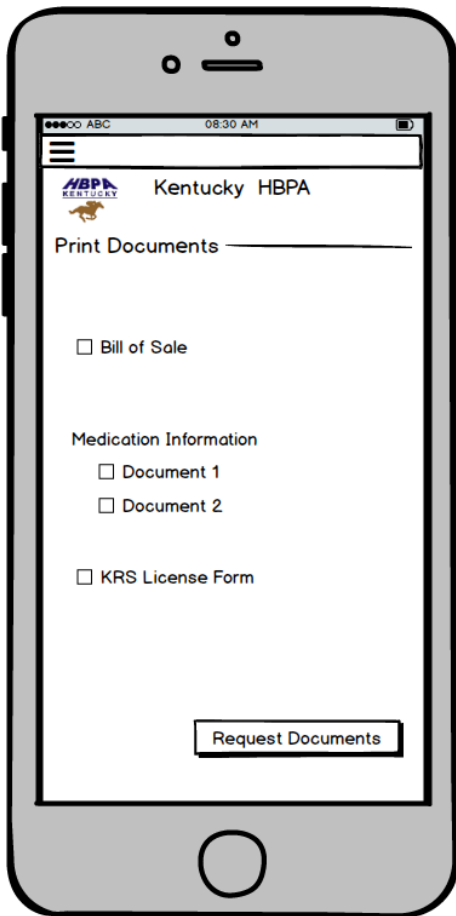
City State Zip Code

(State)

Primary Phone Number E-mail Address

Password

This will be our form view for joining the Kentucky HBPA, once again requiring people to input the information in the following fields. This will allow for administrators to easily pull up all needed info once the form is completed and let the back-end database store the new account easily.



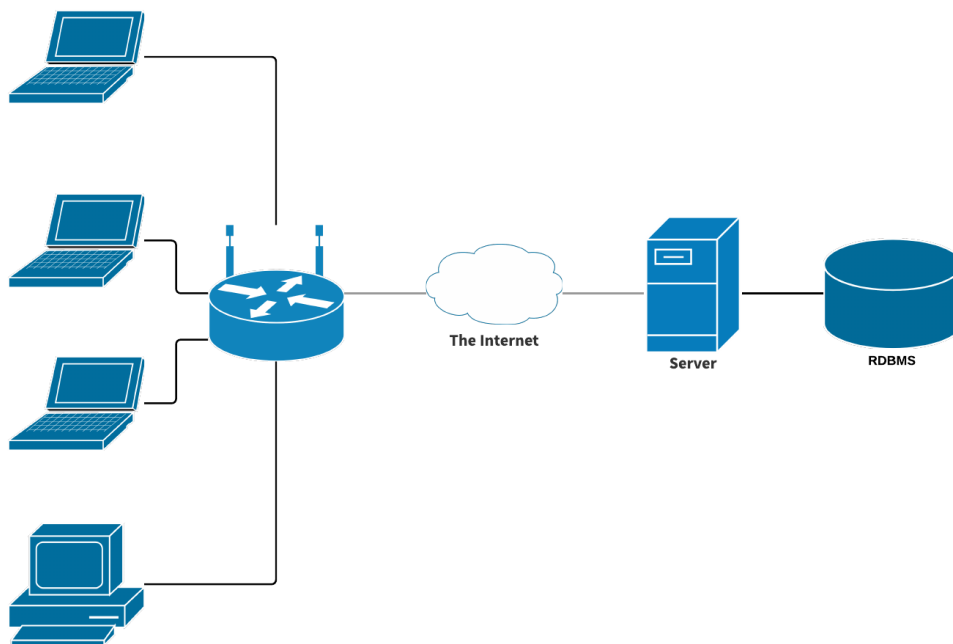
This will be our form view for when the members want to find some document or report and be able to print it out. Being able to select multiple ones to download lets the user just have one quick trip to the site where he or she can get all the documents they may need in on

Physical Architecture Design

Explanation

The physical architecture consists of client machines (desktops and laptops) connected wirelessly to a router. This router allows for external access to the internet and web server. The web server is hosted by a third party and serves as both a web server and a database server. This is a two-tiered architecture.

Diagram



System Software Specifications

Specification	Standard Client	Standard Web Server	Standard Application Server	Standard Database Server
Operating System	Windows Microsoft Edge	Linux	Linux	Linux
Special Software	Office 365 MS OneDrive Acrobat Reader	Apache	PHP	MySQL

Procedures for Non-functional Requirements

Non-Functional Requirements

1. The website content will be easily editable by employees of KHBPA.
2. The website will be visually distinct from similar organizations.
3. The system will be secure from outside attack
4. System data will be backed up every 24 hours with the last 3 backups being stored in separate locations
5. Data transferred to and from the server will be encrypted via SSL
6. Sensitive user data stored on the server will be encrypted with PGP
7. Permissions to application data will only be modifiable by an administrator
8. System must maintain full traceability of transactions
9. The system will maintain relational integrity in the database
10. The system will maintain 99% uptime
11. The system will be accessible from any location and at any time

Designed Procedures for Non-Functional Requirements

1. We will use wordpress to make the website easily editable.
2. We will use a visually distinct color palette from the current one and avoid navy blues.
3. We will secure from outside attack by using encryption and sanitizing data inputs.
4. We will back up our data automatically using a wordpress plugin.
5. SSL will provide encrypted transmissions.
6. PGP will protect and encrypt local desktops.
7. We will have a property 'IsAdministrator' which will need to be true in order to perform certain operations in the system.
8. The system will record all transactions, only containing Member Info, date of transaction, and amount.
9. Most RDBMSs enforce relational integrity on their own. The front end will notify the user of a failed input should one occur.
10. By maintaining a reliable internet connection and choosing a web host wisely.
11. By hosting our system in the cloud, data can be accessed from anywhere. SSL will prevent interception of data transfers on the go.

Gantt Chart

Narrative

This Gantt Chart has been organized in chronological order of task assignments for each class deadline and the times we began the tasks and had them done by. Everyone in the group Serious Business has done their fair share of use cases in previous iterations as well as other deliverables which were dependent upon those use cases, and we were able to make this portion of the development project successful because organizing group meetings outside of class as well as individual spare time was not a problem. Fortunately we have been able to keep our desired schedule up until the end of this semester and most importantly leading up to the presentation dates. We believe our new ideas and solutions will help the Kentucky HBPA reach their goals.

Chart

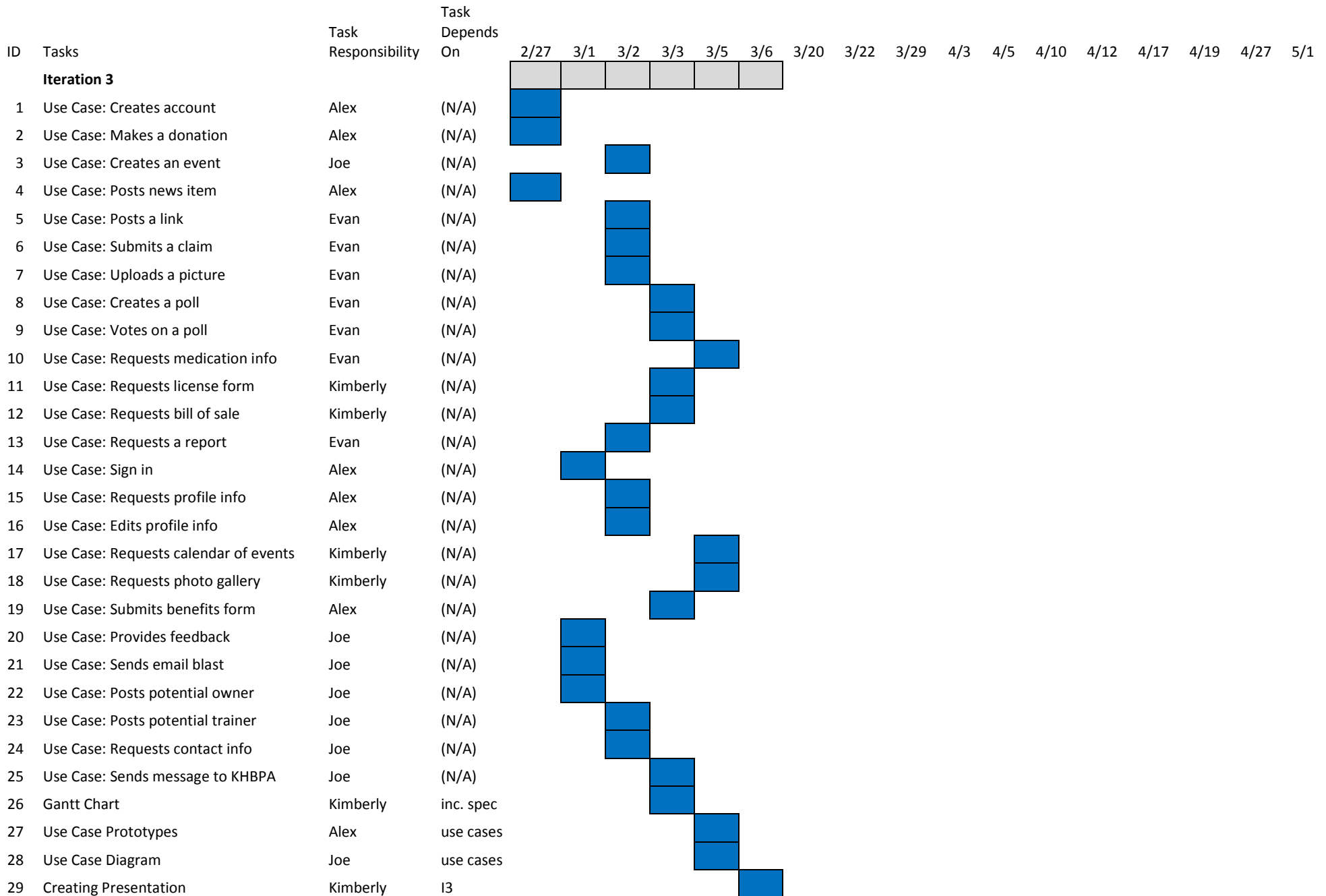


Chart (cont...)

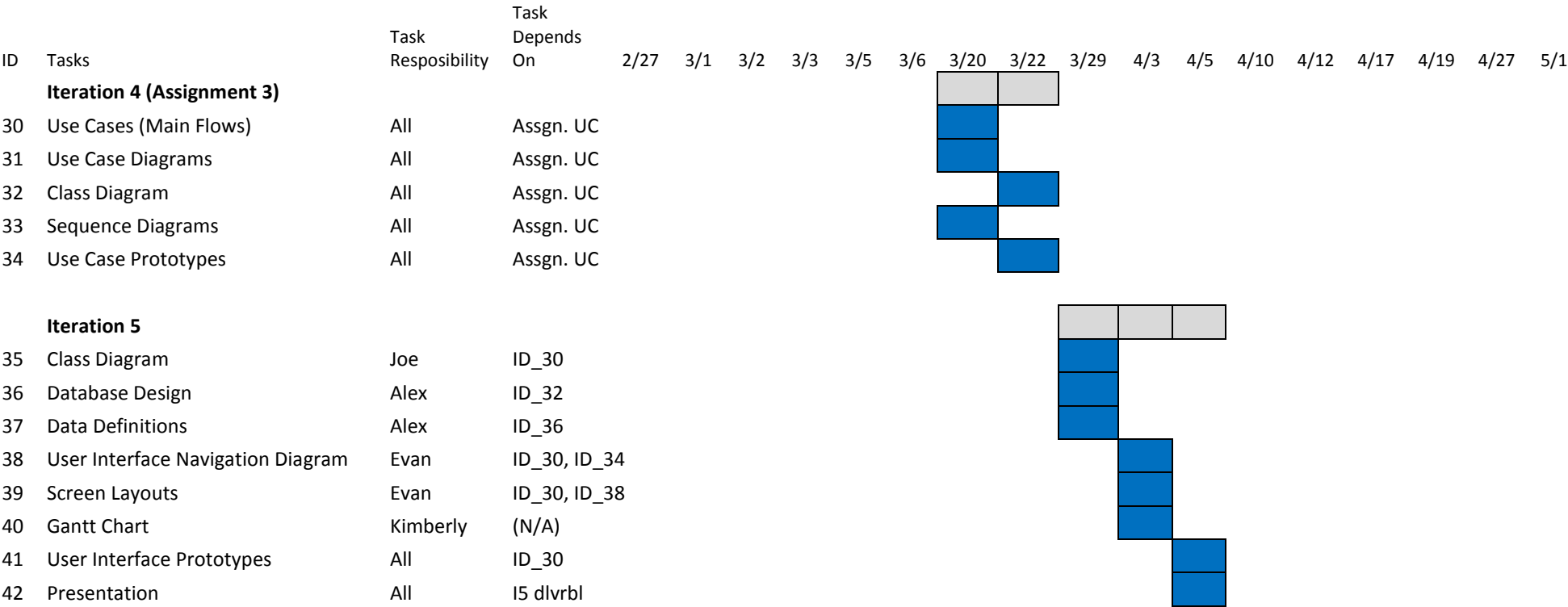
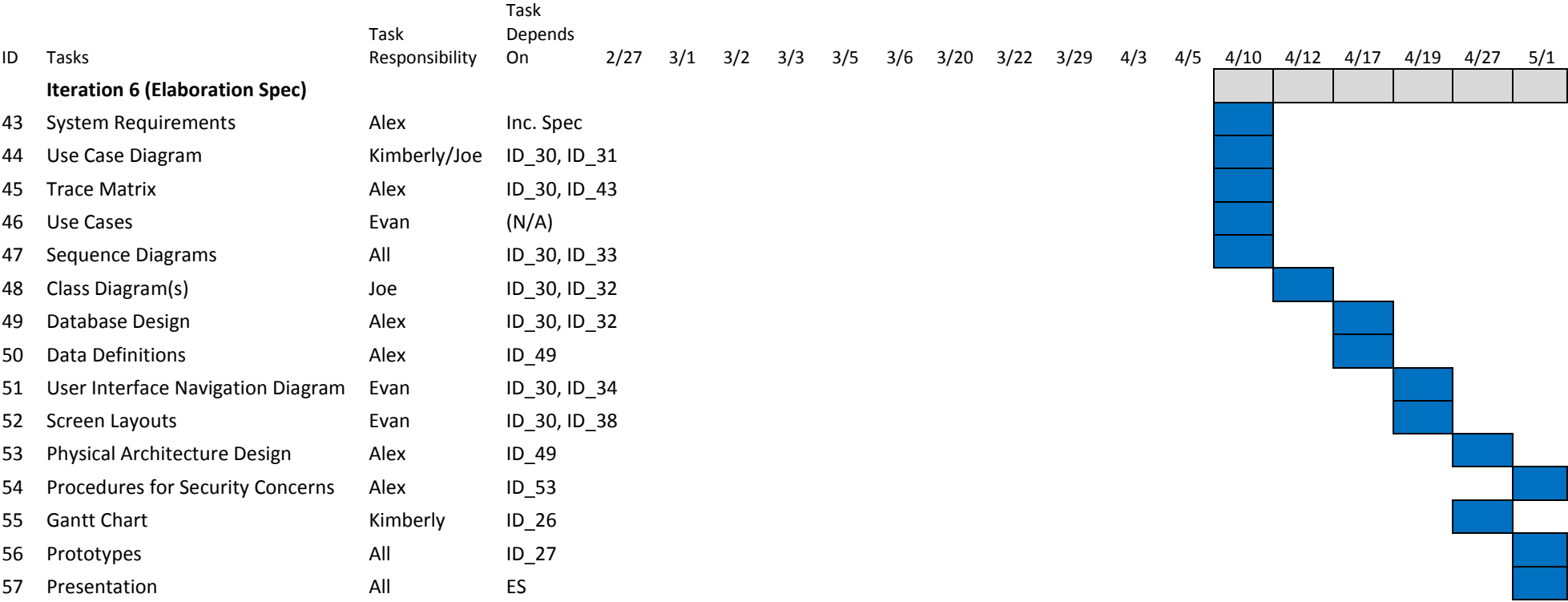


Chart (cont...)



Prototypes

Prototype: Create Account

The image displays two mobile app prototypes for 'Horsemen Helping Horseman', connected by a blue arrow indicating a flow from registration to confirmation.

Prototype 1: Registration Form

Header: Horsemen Helping Horseman

Text: I AM A MEMBER OF THE KENTUCKY HORSEMAN'S BENEVOLENT AND PROTECTIVE ASSOCIATION. I UNDERSTAND THAT I AM ENTITLED TO ALL BENEFITS ESTABLISHED BY THE HBPA FOR ITS MEMBERS.

Form Fields:

- Name: First Name, Last Name
- Stable, Corporation, Syndicate, or Farm (if applicable):
- Managing Partner:
- Address:
- City: (State) (dropdown), Zip Code:
- Primary Phone Number: E-mail Address:
- Password:

Prototype 2: Confirmation Screen

Text: Which best describes you?

Options: ☐ Owner ☐ Trainer ☐ Owner & Trainer

Text: KRC License #

Text: Signature

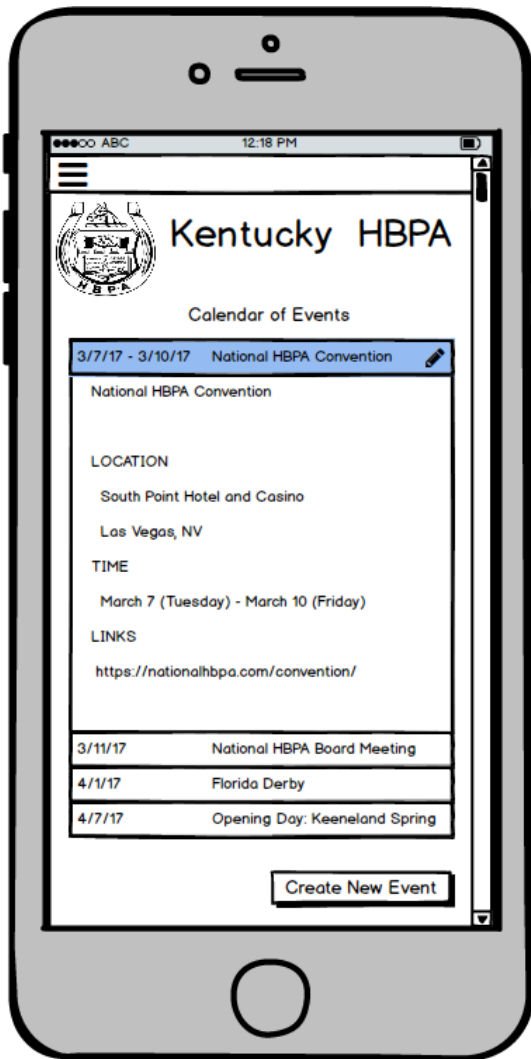
Text: Click here to sign electronically

Text: I hereby appoint the Kentucky Horseman's Benevolent and Protective Association, Inc. to act as my sole and exclusive agent and representative for the purpose of negotiating and executing, or refusing to execute, with Thoroughbred race tracks in Kentucky any and all contracts relating to Thoroughbred Racing in the state. By this appointment, I hereby revoke any and all previous authorities given by me for similar purposes.

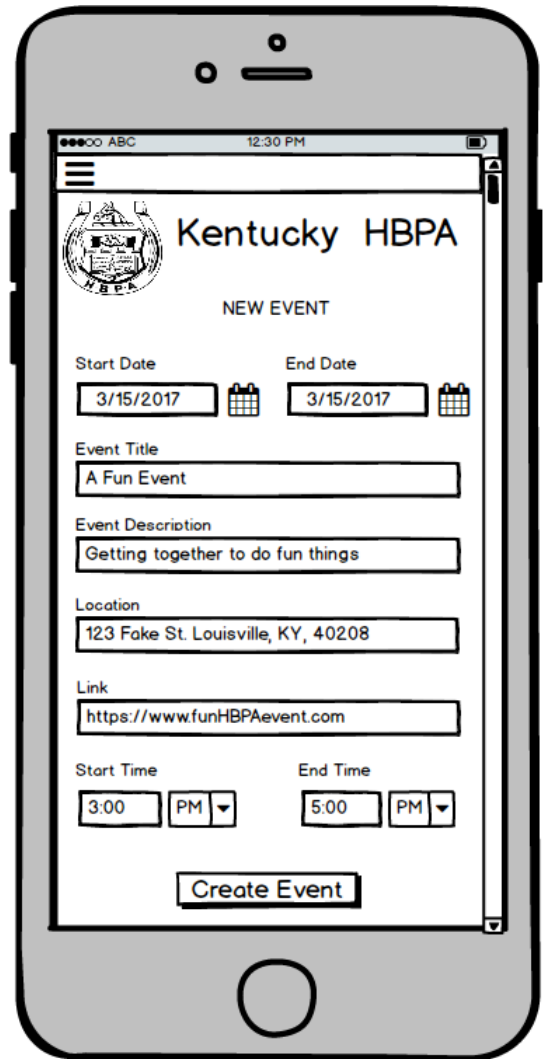
Text: ☐ I agree

Text: Join Now

Prototype: Create an Event

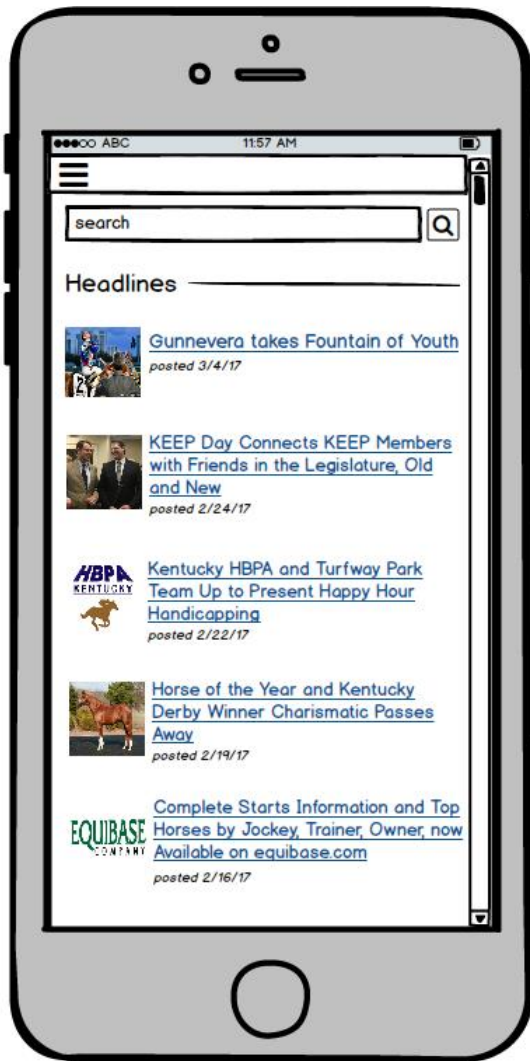


Screen 1

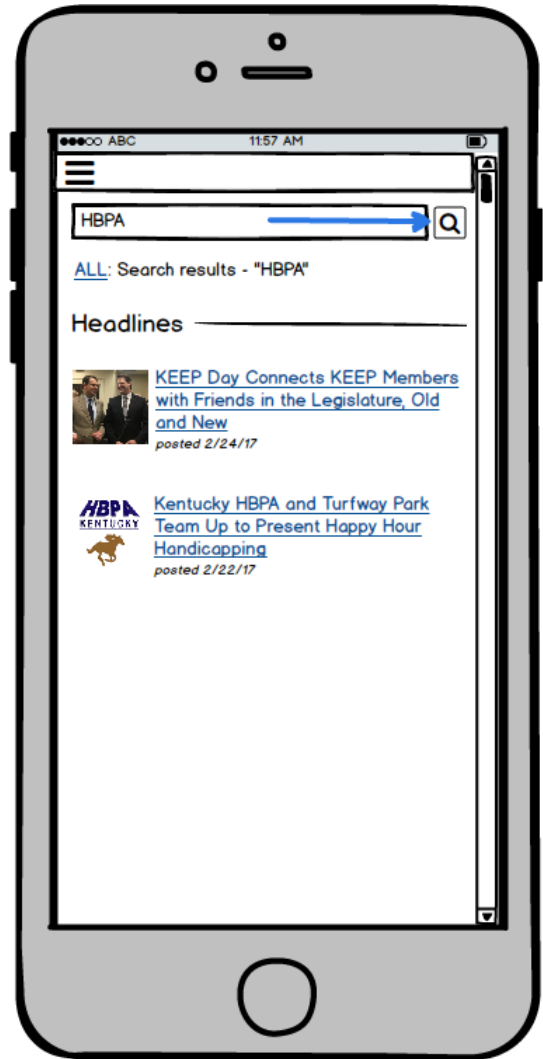
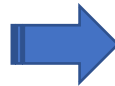


Screen 2

Prototype: Search News Archives

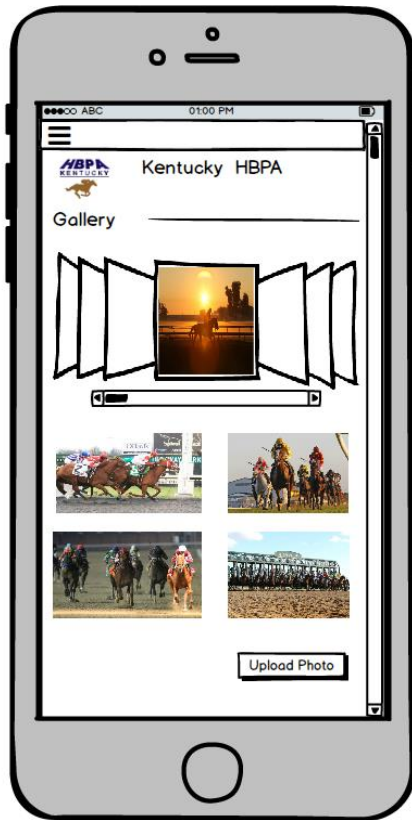


Screen 1

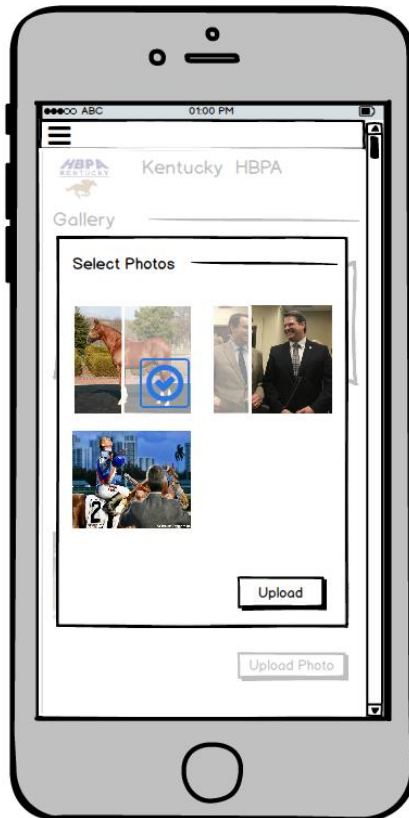


Screen 2

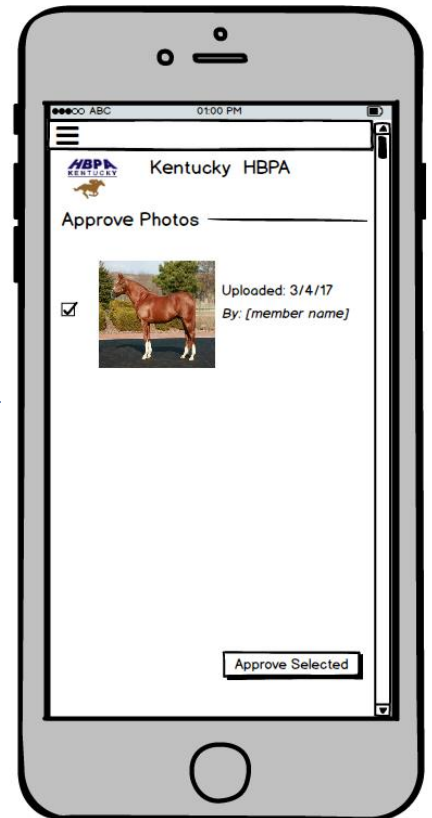
Prototype: Upload a Photo



Screen 1

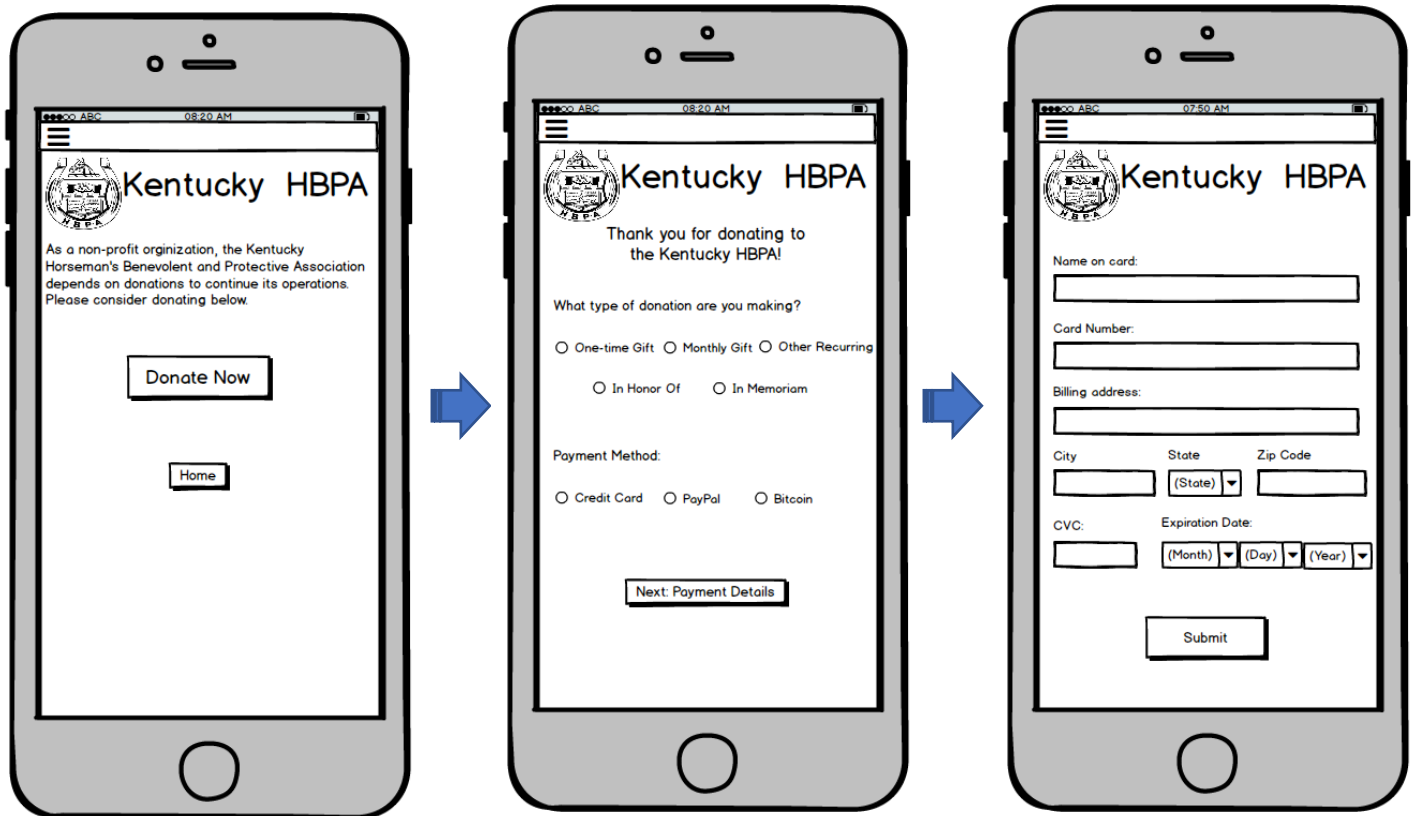


Screen 2



Screen 3

Prototype: Makes a Donation



Prototype: Posts a News Item



Prototype: Submits a Claim

ABC 08:49 AM

HBPA KENTUCKY Kentucky HBPA

Submit Claim

Owner's Name

Trainer's Name

Statement of Euthenasia

Please print the [statement of euthenasia](#) then have it signed by a licensed veterenarian before uploading it below

Upload File...

☐ I agree to the [terms and conditions](#)

Submit

Prototype: Signs In

ABC 09:01 AM

HBPA
KENTUCKY

Kentucky HBPA

Sign In

E-mail Address

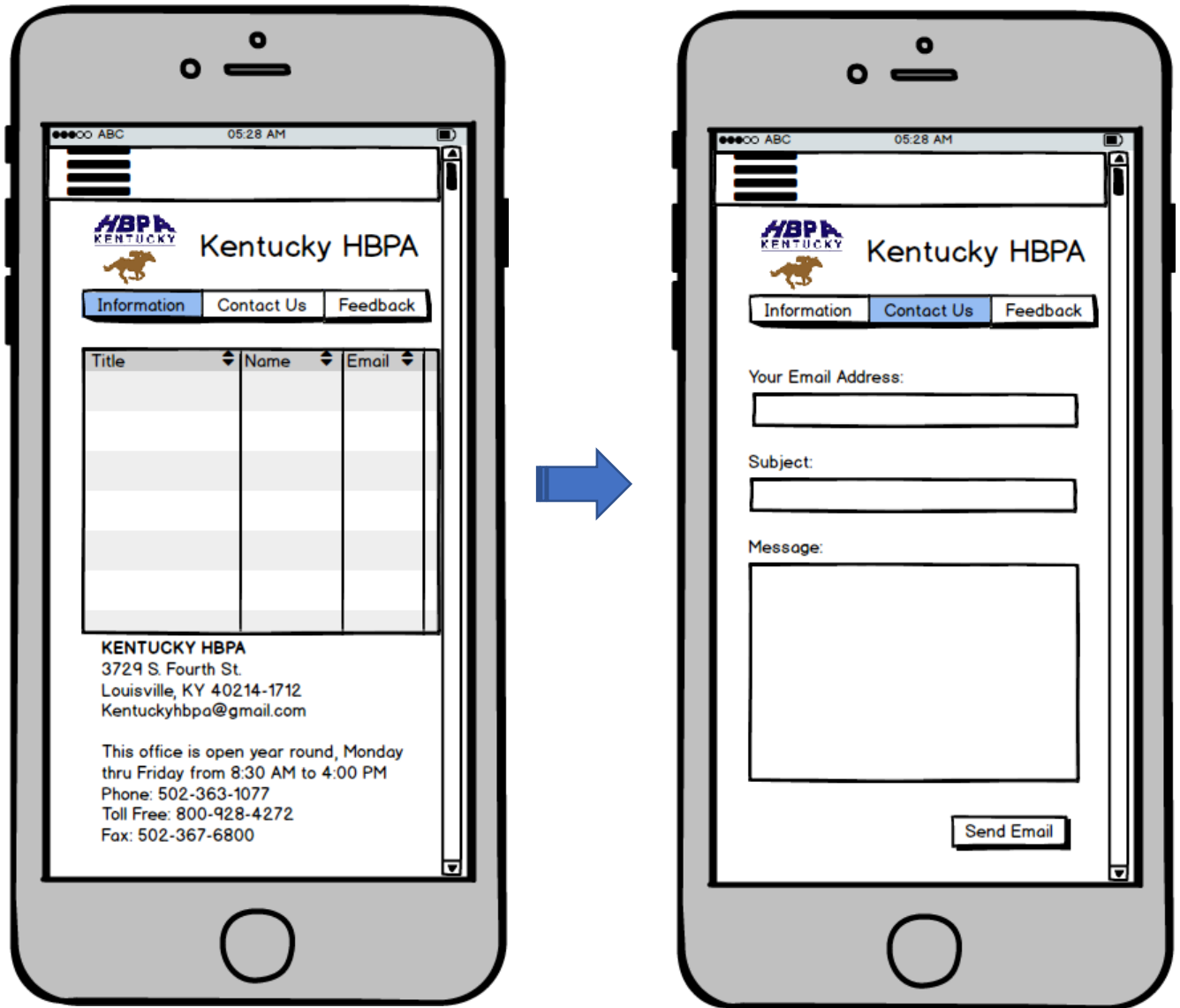
Password

Sign In

[Forgot Password?](#)

Create an Account

Prototype: Contact KY HBPA



Prototype: Provide Feedback

05:28 AM

Kentucky HBPA

Information Contact Us Feedback

Title	Name	Email

KENTUCKY HBPA
3729 S. Fourth St.
Louisville, KY 40214-1712
Kentuckyhbpa@gmail.com

This office is open year round, Monday
thru Friday from 8:30 AM to 4:00 PM
Phone: 502-363-1077
Toll Free: 800-928-4272
Fax: 502-367-6800

05:28 AM

Kentucky HBPA

Information Contact Us Feedback

Survey Question 1:

☐ Very Good
☐ Good
☐ Average
☐ Poor
☐ Very Poor

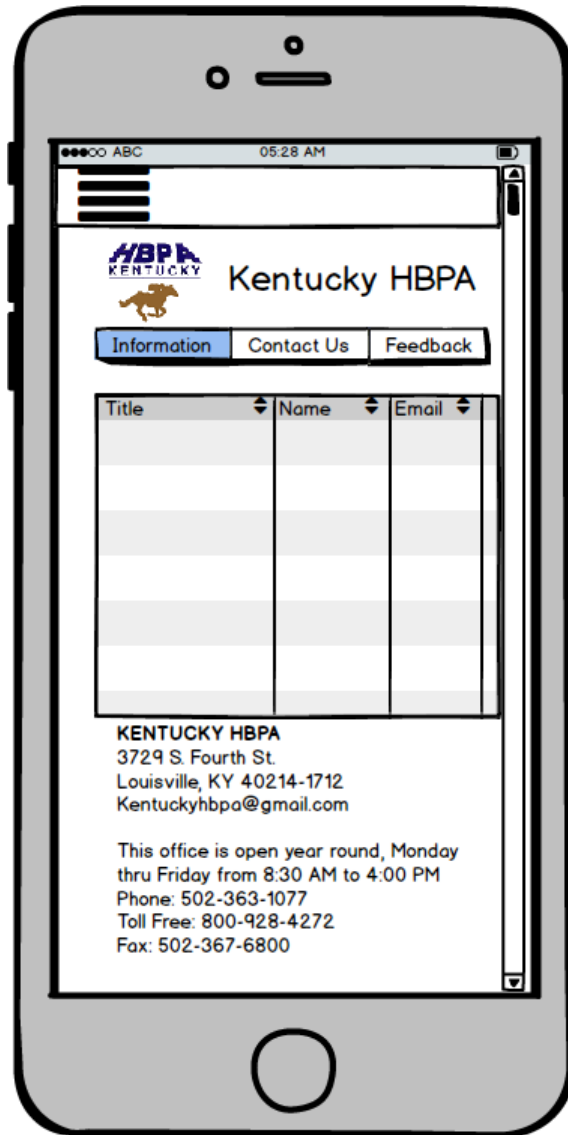
Survey Question 2:

☐ Very Good
☐ Good
☐ Average
☐ Poor
☐ Very Poor

Comments/Messages (Optional):

Submit Survey

Prototype: Request Contact Info



Prototype: Submit Benefits Form

The prototype consists of three sequential screens for the Kentucky HBPA benefits form, connected by blue arrows indicating the flow of the user journey.

Screen 1: Registration

Kentucky HBPA

BENEFIT

Full Name Social Security #

Address

City State Zip Code

Phone Number Date of Birth

Please list the employers for whom you have worked in the past 90 days:

Employer	Track	Date Started	Date Left
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Screen 2: Employment Status and Income

Kentucky HBPA

Are you currently employed?

☐ Yes ☐ No

If no, please explain:

Please list all income that you currently earn on and off the racetrack:

Employer	Track	Weekly salary before taxes:
<input type="text"/>	<input type="text"/>	<input type="text"/>

Screen 3: Employment Duration and Assistance

Kentucky HBPA

How long have you been employed in the racing industry in Kentucky?

Years and/or Months

What sort of assistance are you seeking?

Prototype: Request Medication Information

Prototype of a mobile application interface for requesting medication information. The screen displays the following elements:

- Header: HBPA Kentucky logo and text "Kentucky HBPA".
- Section Title: "Select Documents".
- Document Selection List:

Medication Information	<input type="checkbox"/>
Bill of Sale	<input type="checkbox"/>
KRS License Form	<input type="checkbox"/>
- Action Button: "Request Documents".

Prototype: Request License Form

The image shows a mobile app prototype for requesting a license form. The interface is displayed on a smartphone screen. At the top, the status bar shows signal strength, 'ABC', the time '10:14 PM', and battery level. Below the status bar is a hamburger menu icon. The main header area features the 'HBPA KENTUCKY' logo on the left and the text 'Kentucky HBPA' on the right. The main content area is titled 'Select Documents' and contains a list of three items, each with a checkbox to its right:

- Medication Information ☐
- Bill of Sale ☐
- KRS License Form ☐

At the bottom of the screen, there is a button labeled 'Request Documents'.

Prototype: Request Bill of Sale

ABC 10:14 PM

HBPA
KENTUCKY

Kentucky HBPA

Select Documents

Medication Information	<input type="checkbox"/>
Bill of Sale	<input type="checkbox"/>
KRS License Form	<input type="checkbox"/>

Request Documents

Prototype: Request Profile Info

HBPA KENTUCKY

Kentucky HBPA

Edit Profile

First Name

Last Name

Stable, Corporation, Syndicate, or Farm (if applicable)

Managing Partner

Address

City State Zip Code

Primary Phone Number E-mail Address

KRC License Number:

I am an:

☐ Owner ☐ Trainer

☐ Owner & Trainer

Prototype: Edit Profile Info

HBPA KENTUCKY

Kentucky HBPA

Edit Profile

First Name

Last Name

Stable, Corporation, Syndicate, or Farm (if applicable)

Managing Partner

Address

City State Zip Code

Primary Phone Number E-mail Address

KRC License Number:

I am an:

☐ Owner ☐ Trainer

☐ Owner & Trainer

Prototype: Creates a Poll

ABC 10:16 PM

HBPA KENTUCKY Kentucky HBPA

Create a Poll

Question 1

☐ Open Ended Question
☒ Use Number Scale (1 - 7)
☐ Use Custom Answers

Question 2

☐ Open Ended Question
☐ Use Number Scale (1 - 7)
☒ Use Custom Answers

Answer 1

Answer 2

+ Add Another Answer

Create Poll

Prototype: Votes on a Poll

ABC 10:16 PM

HBP KENTUCKY Kentucky HBPA

Opinion Poll

Question 1

Rank how you feel about the current KHBPA website on a scale of 1-7?

- ☐ 7 - Absolutely terrific
- ☐ 6 - Very good
- ☐ 5 - Good
- ☒ 4 - Average
- ☐ 3 - Bad
- ☐ 2 - Very Bad
- ☐ 1 - Absolutely terrible

Question 2

Describe how we could make our website better.

Submit

Prototype: Posts a Link

The image shows a mobile app prototype for 'Kentucky HBPA'. The app is displayed on a grey smartphone frame. The screen has a status bar at the top with 'ABC' and '10:16 PM'. Below the status bar is a hamburger menu icon. The app header features the 'HBPA KENTUCKY' logo (a horse head) and the text 'Kentucky HBPA'. The main content area is titled 'Post a Link' and contains three input fields: 'Title', 'URL', and 'Description'. The 'Description' field is a larger text area. A 'Submit' button is located at the bottom right of the form. The app is styled with a clean, minimalist design using black outlines and a white background.

HBPA KENTUCKY Kentucky HBPA

Post a Link

Title

URL

Description

Submit