Design Document

User Types

Guest

Guests may view all public pictures, but are unable to upload new pictures or download pictures. They are able to log in with a google account to access full member features

Member

Members must log in with a google account. Once that is done, they may view all public and private pictures. They will be able to download all pictures, and delete their own pictures. They can upload new pictures, the default will be public.

Administrator

An admin user can do everything a member can do as well as having the ability to delete all pictures. An admins uploads will be private by default.

Class Explanations

PictureBoxServlet

This class is responsible for handling the login and logout requests.
For login requests, it will redirect to a google login page which will return to this servlet. Then some session variables are set to track information about the current user. Namely, the current session id, users email, users' member type (admin or regular) and user id. It then redirects to the GetBlobs servlet to load and display the images.

When a logout request comes in, the servlet removes the session variables and calls the logout URL. The servlet gets loaded again and redirects to GetBlobs.

GetBlobs

This class is responsible for creating a list of images that will be displayed on the showPictures.jsp page.
It uses a BlobInfoFactory to get a list of all the blobs that have been uploaded, with the queryBlobInfos() method. It loops through each BlobInfo object that gets returned and creates a Datastore Key for each one. It uses this Key to get the corresponding Entity from Datastore and from the Entity, retrieves data about the image.
If the current image is marked as public or if the user is logged in, an Image (a custom class holding all the data about the image) is created and added to a List. After the loop has finished, the List is added to the session and redirects to showPictures.jsp.

Upload

This class is responsible for uploading files to Blobstore and data about the upload to Datastore.

It gets the file as a Blob and stores it on Blobstore. The servlet also creates a Datastore Key, creates an Entity from this Key and sets various properties on this Entity. It sets the owners id, owner's nickname, its privacy status and the blobkey. It then saves this Entity on the Datastore. It then redirects to GetBlobs.

DeleteImage

This class is responsible for deleting images and data from Blobstore and Datastore.
The Blobkey is passed as a string in a Http POST request. The servlet gets the string and creates a Key from this. It uses this key to get the Entity relating to the image. It then gets the actual Blobkey and uses BlobstoreService to delete the Blob. Then it deletes the Entity from Datastore.

Serve

This class is responsible for downloading Images.
The Blobkey is passed as a string in a Http POST request. The servlet gets the string and creates a Key from this. It uses this key to get the Entity relating to the image. It then gets the actual Blobkey and uses BlobstoreService serve() to download the image.

Guides

This class is responsible for redirecting the user to the correct User Guide html page based on their member status.
If the user is an admin, they are redirected to the admin_guide.html page. If they are logged in as a regular user they are redirected to the member_guide.html page. If they are not logged in they are redirected to the guest_guide.html page.

Image

This is a class to store information for each image. It stores:

- URL to serve the image
- Owners' id
- Owners Nickname
- Privacy status of image
- The name of the image file
- The Blobkey as a string

The class implements serializable to allow it to be added to a HttpSession.

showPictures.jsp

This page displays a list of images and information about it.
If the user is logged in then the user will be shown a button to download, and if they are able to delete the image, they get a delete button beside the image.

upload.jsp

This page allows users to select a file to upload and upload it. They can choose whether it should be public or private.

Getting the Project from Git

Clone the repository
https://github.com/JosephDevaney/DT2283Cloud.Devaney.Joseph.git into your workspace.

- Open Eclipse and select File->Import…
- Choose General->Existing Projects into Workspace
- Click Next
- Beside Choose Root Directory click Browse
- Navigate to the cloned repo and choose Ok
- Select project dt2283cloud-CA2
- Click Finish

You can then run the project locally by right clicking on the project name and selecting run as->Web Application.

Testing

Guest

To test only public images can be viewed by a guest, logout if you are logged in and check that the images are all public. There also should not be either a download or delete button available beside any pictures.

If you click on User Guide you should be directed to the guest user guide.

Member

To test some member functionality, log in with an account that isn't mark.deegan@dit.ie.

To test the upload functionality, try to upload without selecting a file. You should get an alert saying you can't. The private checkbox should not be clicked.
Now try uploading a file that isn't one of the ones in the previous alert.
Finally, try to upload an image. Try one as public and one as private. This should redirect you back to the main page where you can verify the upload worked.

At this point you should be able to notice that there are private images uploaded that weren't visible when you were logged out.

There should be a download button beside all images and a delete button beside the images you uploaded.

Clicking on Delete should refresh the page, and the image will no longer be there.

Clicking on Download should open the image by itself in the browser.

Clicking on the User Guide should direct you to the member guide page.

Admin

Log in as mark.deegan@dit.ie.

You should be able to do everything a member can do. Additionally, you will see a delete button beside every image.
On the upload page, the private checkbox should be ticked by default.

Clicking on User Guide should direct you to the admin guide page.