Programming Assignment-3
Design Document
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Google App Engine

- Google App Engine provides platform as service where in users are allowed to host the web application on the Google servers.
- GAE has 3 types of storage APIs
  - Memcache, which is high performance scalable web applications often use a distributed in-memory data cache in front of or in place of robust persistent storage for some tasks.
  - Google Cloud Service (GCS), which is used to store large amount of data on cloud. It allows your application to store and serve your data as opaque blobs known as "objects".
  - Blob store API allows your application to serve data objects, called blobs. Blobs are much larger than size of objects in data store service. Blobstore creates a blob from the file's contents and returns an opaque reference to the blob, called a *blob key,* which you can later use to serve the blob.

Creating the files

- In this assignment, we have to create 411 files as an input of Google App Engine(GAE).
- In the program, 100 files of 1kb, 100 files of 10kb, 100files of 100kb, 100 files of 1MB, 10 files of 10MB and 1 file of 100MB are generated.
- All the files have only 100 bytes per line as mentioned in the requirement.

Operations performed and their design :

- **Upload (key)**
  - By using this function we can insert file with file name key in memcache,GCS and blobstore.
  - If the file size is less than 100kb, then it is being inserted in memcache otherwise it will be uploaded in blobstore and GCS.
  - User can upload multiple files from local machine and can upload on app engine.
  - On click of upload, JSP uses the url to upload all files from memcache, GCS and blobstore.
  - Redirected page will give uploaded time in millisecond.
- **Find(key)**
  - Enter the name of the file in the textbox, whichever you want to find.
  - By clicking find it will start searching in blob storage.
  - It will generate iterator object which has all the file's names.
  - And it will compare this names with input name.
- **delete(key)**
  - It will find the blob key whichever file you want to delete from blobstore.

- Now using this key and blobstoreservice object, it can delete file from the blob storage.

- **showall()**
- On click of the showall() it will generate iterator of type blobinfo and store all the file names in the iterator object.
- By iterating this object, we can get list of all files.

- **Download(key)**
- It will show the content of the file.
- It will find the blob key whichever file you want to download from blobstore.
- Now using blob key and **blobstoreservice.serve(blobkey,response)** function, it show the content of the file.
- **Extra Credit:**
- **Checkcache(key)**
  - Using **memcacheservice** object we can check weather the file is exist in cache or not.
- **Clearallcache()**
- Using **memcacheservice** object we can remove all the files