

# Agenda

Overview

Test Plan

Findings

Expectation vs Satisfaction

Recommendations & Lesson Learned

Q&A

# Overview

## Product Introduction

Developer Console  
gsutil

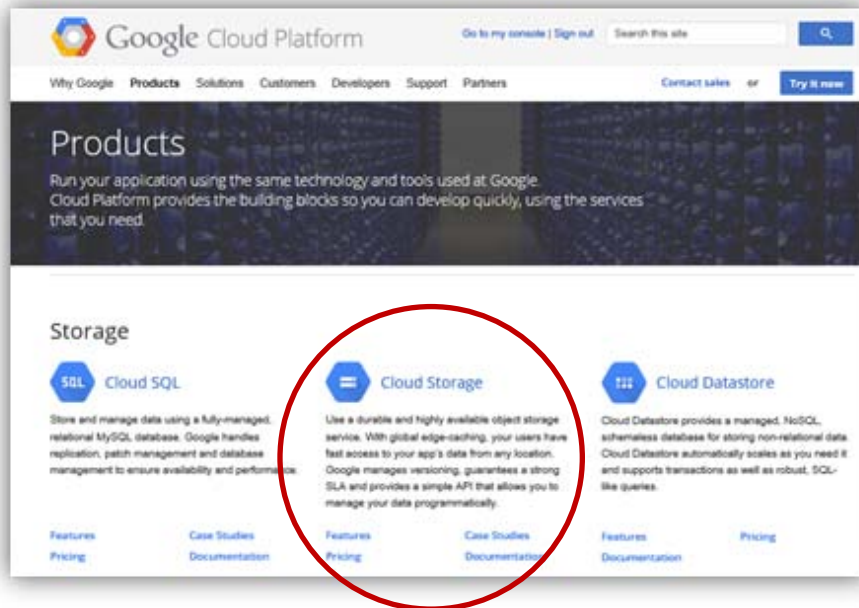
## Test Plan

Method  
Participant Profiles  
Testing Plan





# Google Cloud Platform





# Google Cloud Platform

Google offers two tools:

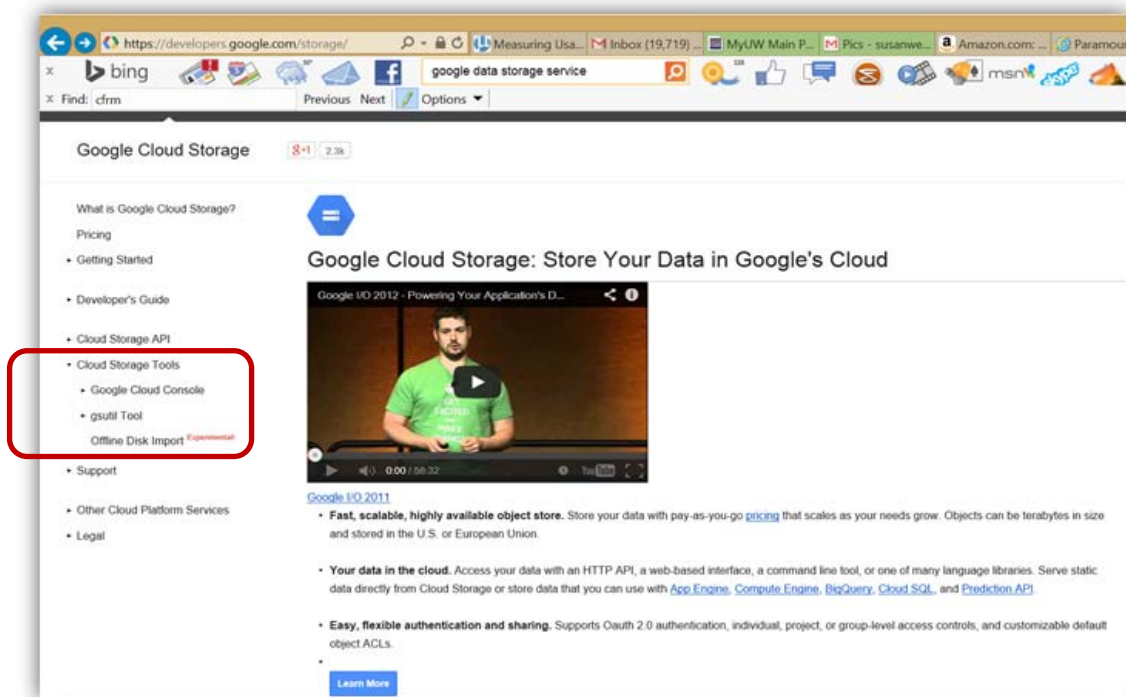
**Developer Console**

Web UI Component

**gsutil**

Python Application

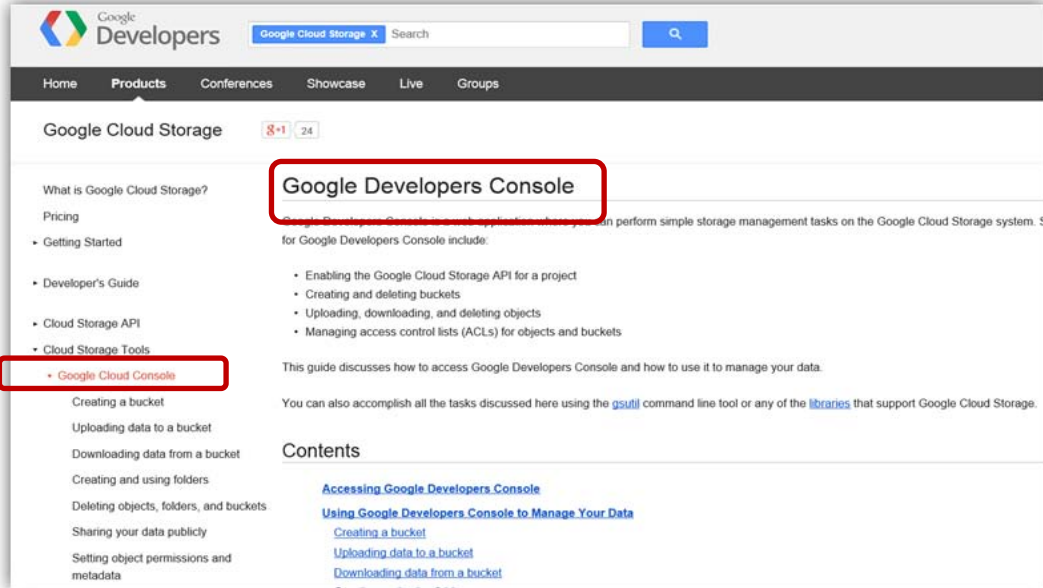
Command Line



## Developer Console - Web UI Component



# Product Introduction





# Participant Profiles

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## 8 Developers who understand how to use command lines

(developers/testers/TPM/DBA, small businesses, students, and startup companies)

### Users Category 1: Experienced

(Users who use or have used cloud storage services products)

Leverage discovery on how the features and tasks work

### Users Category 2: Novice

(Users with minimal or no exposure to any cloud services)

Gain insights of those who are new to the cloud experience; segment represents similar users who support small business and startup companies



# Method

## Baseline Measurement Research by Diagnostic Method

Use **within-subjects design**

Conducted **1.5 to 2.5 hours** sessions

## Think Aloud Protocol

Understand the thought process of a subject as participants use a product

## Capture Impression pre/post task

5E's of Use: Effective, Efficient, Engaging, Error Tolerant, Easy to Learn

## Techsmith Morae Software

Record participants' facial expression and the task





# Testing plan

## Survey Questions (online)

Online screener to assess experience level of participants

## Pre-Test Questions (5min)

Qualitative data about the participants' experiences

## Introduction to the Session (5min)

Overview of the test, consent forms, the task description

## Tasks (120min)

Each participant performed **13 tasks**: five for Developer Console and eight gsutil.

## Post-Test Questions (10min)

Use SUS for measuring participants' satisfaction level

## Open ended Questions (10min)

Inquire overall satisfaction/dissatisfaction and suggestion

# Findings

## Console

UI

Documentation(Concept/Terminology)

Functionality

## gsutil

Output/Messages

Installation

Documentation

Configuration



# Positive Findings

Five participants had a positive experience with the Basic Delete function (worked to delete an item). They added that the copy and move features were standard on gsutil only.

## **Developer Console:**

Three shared that adding emails to permissions was straightforward on the developer console and “able to add email to the account...”

Two highlighted Developer Console homepage that they were “glad to see access on API resource types and felt it was an important reference.”

## **gsutil:**

Two indicated, “commands in gsutil were standard in comparison with other developer tools



# UI

## UI Navigation actions

- No indication of location of the user on the UI.
- No obvious link to take user back to previous steps.

## Information Architect

- Overview Page - 5 / 8 Feedback
- Information presented irrelevant



No navigation to go back to main menu or previous page.

Irrelevant information displayed

The screenshot shows the Google Developers Console interface. On the left, there is a sidebar with navigation links: Overview, APIs & auth, Permissions, Settings, Support, App Engine, Compute Engine, Cloud Storage, Cloud Datastore, Cloud SQL, BigQuery, and Cloud Development. The main content area displays a welcome message and a 'Get started with...' section with links to 'Mobile Backend Starter' and 'Photofeed Java sample app'. On the right, there is a 'Projects' section with a 'CREATE PROJECT' button and a table listing projects.

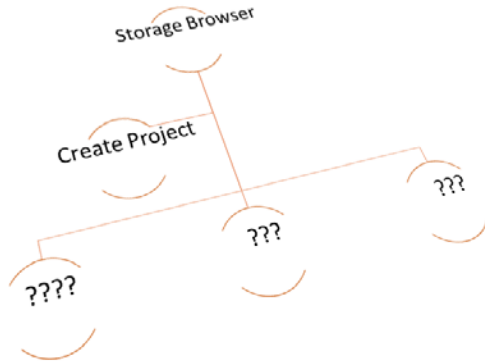
PROJECT NAME	PROJECT ID	REQUESTS	ERRORS	CHARGES
My Project	bustling-at-439	0	0	\$0.00
My Project 1	regal-eye-470	0	0	\$0.00
My Project 2	evocative-tower-472	0	0	\$0.00
My Project 4	iron-crown-513	0	0	\$0.00

# UI

## Presentation & Layout

No design hierarchy or mapping hierarchy

Project indication is here instead.



No structure on the layout.  
e.g. Storage Browser--  
>Project--> Bucket



# Documentation

**Intuitive issues, lacks documentation and explanation on language uses**

Needs online help and user guide with examples to explain

The screenshot shows the Google Developers Console for a project named 'My Project 2'. The interface includes a top header with the Google logo, 'Developers Console', and a user profile '+Sooyoung'. Below the header, the project details are shown: 'Project ID: totemic-winter-490' and 'Project Number: 422200031192'. On the right, it says 'Estimated charges this month: \$0.00'. A left sidebar contains a menu with 'Overview' (highlighted), 'APIs & auth', 'Permissions', 'Settings', 'Support', 'App Engine', 'Compute Engine', 'Cloud Storage', 'Cloud Datastore', 'Cloud SQL', 'BigQuery', and 'Cloud Development'. The main content area displays a welcome message: 'Welcome. Not sure what to do next?' followed by 'Get started with...' and two options: 'Mobile Backend Starter' (described as 'A ready to deploy, general purpose cloud backend with Android and iOS client libraries.') and 'Photofeed Java sample app' (described as 'A simple web app run on App Engine, Cloud Storage and your choice of Cloud Datastore or Cloud SQL.').

**Overview**

"The Console is not self explanatory; it is complex." (P4)

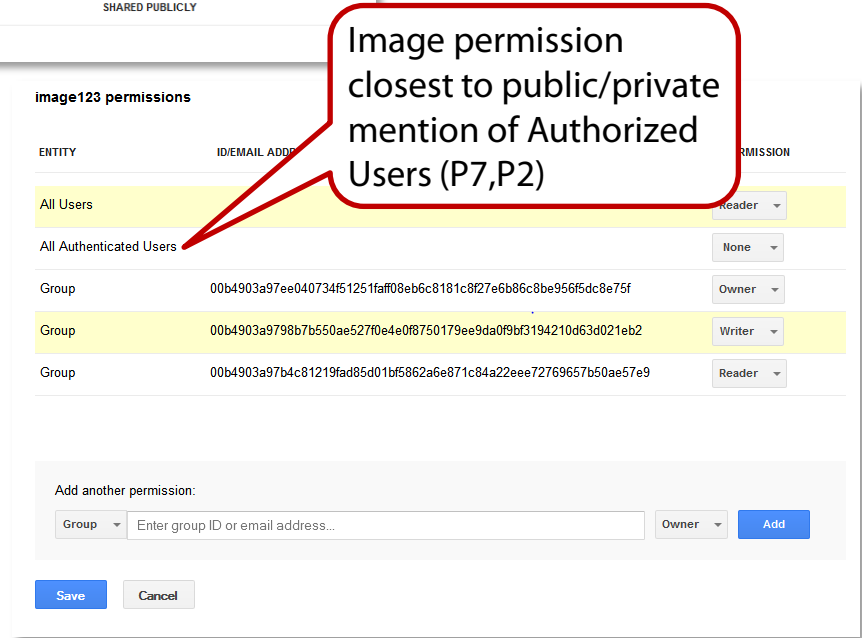
"Did not provide details on overview" (P7, P4, Q1)

# Documentation



## Permission Not Defined

Documentation needs to explain difference in permission roles and levels explain how works with members and/or objects



# Documentation

## Adding members it is unclear if private or public from options:

“edit,” “owner,” or “read” (P7, P2)

Does not indicate public or private option. (P7)

Add member

Email

Permission

- ☒ Is owner  
Can change project settings and manage team members.
- ☐ Can edit  
Can change project settings.
- ☐ Can view  
Can read all project settings and information.

"Private is confusing, ambiguous, or what does it mean? (P5, P6, P7, P8, Q5)

EMAIL	PERMISSION
66817665859@developer.gserviceaccount.com	Can edit ▼
metal-mariner-489@appspot.gserviceaccount.com	Can view ▼
vbriscoe4@gmail.com - you	Is owner



# Documentation

## Terminology

Nomenclature, commonality and learnability play key role in success

New Project

Project name My Project 4

Project ID supple-framing-517

Create Cancel

Naming of the Project was limited, navigation was a problem, the hierarchy was not understood (P6, P8)

Developers Console

riscoe NEW BUCKET

Home /

- ☐ image123
- ☐ testvib

Developers Console

riscoe NEW FOLDER Upload

Home / testvib /

NAME

- ☐ hello world/

Bucket, Folder, Project, File needs defining and order, participants question naming structure

# Documentation

## Project ID & Terminology

commonality and learnability play key role in success

New Project

Project name My Project 4

Project ID supple-framing-517

Create Cancel

"Why not autoload Project ID's; what purpose are they editable? Instead tool should recognize prior inputs in file names." (P6)

"Naming needs to be consistent between console and gsutil for Project ID's (P7)

Not sure how to create a project (P5)  
Project ID's are weird (P8,P3)

### Google Cloud Storage IDs

By default, members of your project can access Google Cloud Storage data as defined by their project roles. Each role is identified by the following group IDs that you can use to modify permissions for your objects.

You: 00b4903a970cab18dbd138951ce23cb0ab3449da8d10aceb06388ff2e90ea99e

Owners: 00b4903a97885a0d4f1da92a43c937ae711fe693296fcd16176222ed474f4d4

Editors: 00b4903a9766a016a3479ccbef1fde20a0e547a03aac251a4c492449a0272ed3

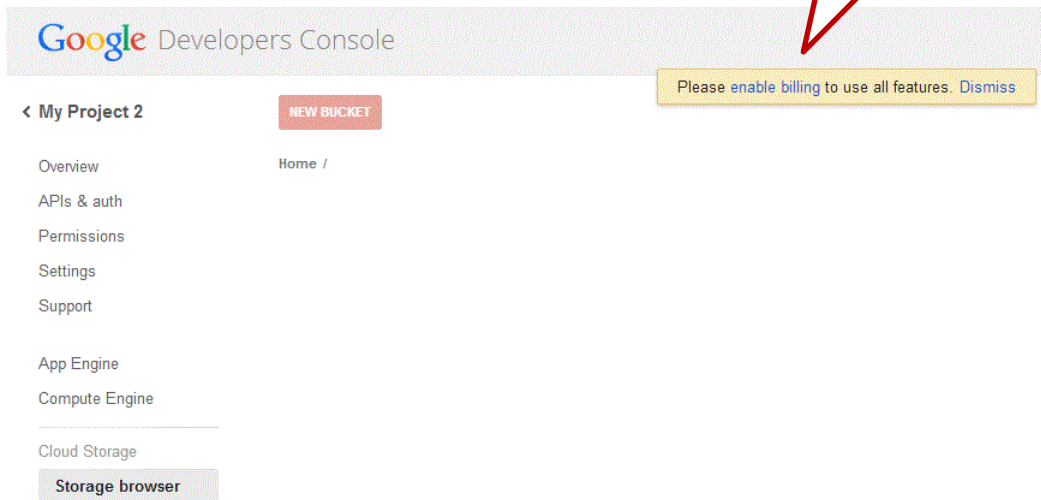
Team: 00b4903a97ea3fd42319a0023ecfe13f013153c0b5f454f7eae12a9ddcfb05c

# Functionality

## Object Permission.

Confusing definition for sharing and setup.

## Billing blocks further action





# Functionality

## User Interaction

How to do drag and drop in Google Docs





# Functionality

Why user has to know Project ID if you are deleting the project already? .

The screenshot displays the Google Developers Console interface. At the top, the header shows 'Google Developers Console' and the current project details: 'Project ID: bustling-art-469' and 'Project Number: 474283007499'. Below this, a blue callout box points to the project ID and name, stating 'Long project ID and name'.

The main content area shows a list of projects under the 'Projects' tab. The table has columns for 'PROJECT NAME', 'PROJECT ID', 'REQUESTS', 'ERRORS', and 'CHARGES'. The projects listed are 'My Project', 'My Project 1', 'My Project 2 Disabled', and 'My Project 4'. A blue callout box points to 'My Project 2 Disabled', stating 'Project is not removed from the list; only disabled'.

On the right side, a 'Delete project "My Project 2"' dialog box is open. It contains a 'Project ID' input field and a 'Delete project' button. A red callout box points to the 'Project ID' input field, stating 'Project ID input field'.

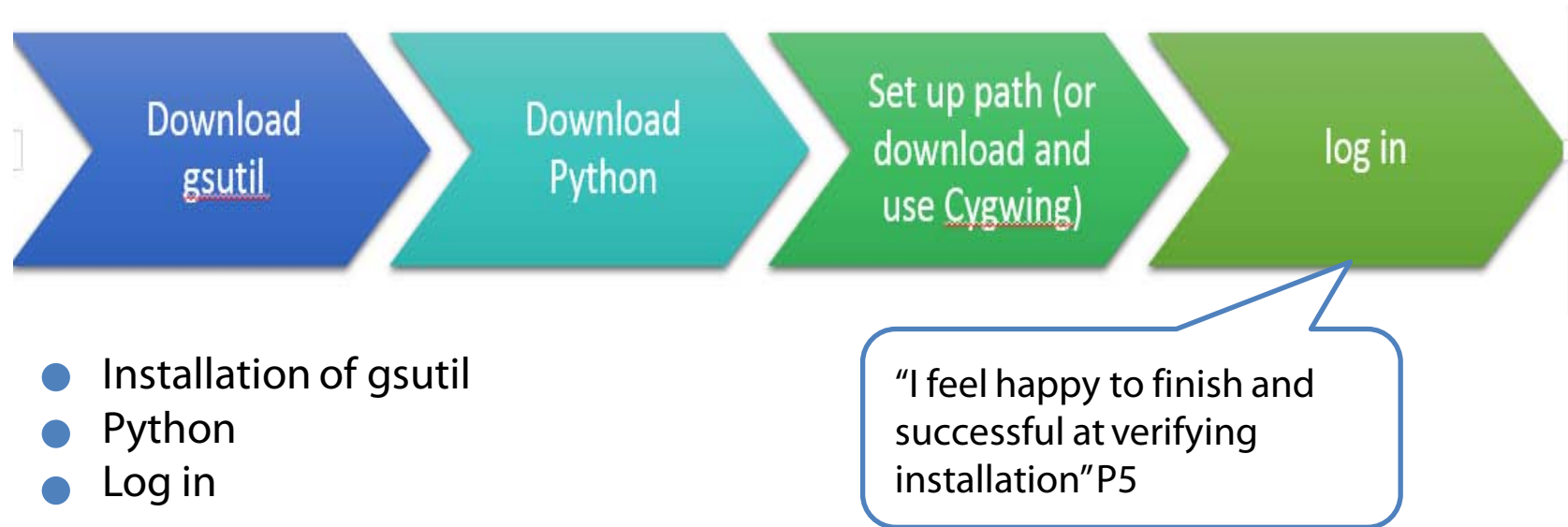
The dialog box also includes a 'Billing' section with a link to 'Enable billing to access the full set of services and increased usage limits'. Below this, it lists the consequences of deleting the project:

- When you click Delete project:**
  - All billing will stop for this project.
  - All traffic serving will be halted.
  - Any App Engine applications will be disabled and deleted.
  - All Compute Engine instances will be terminated.
  - Any data in Compute Engine, Cloud Storage, App Engine Datastore and Cloud SQL will become inaccessible.
  - Project owners will be notified by email of the impending deletion.
  - Any project owner may undo the deletion at any time within 7 days.
- After the 7-day waiting period:**
  - The project will be deleted, including all data, billing and permissions information.
  - You will not be able to restore your project.

At the bottom of the dialog, it says 'To delete project "My Project 2", type your project ID: evocative-tower-472'.

# Installation SW

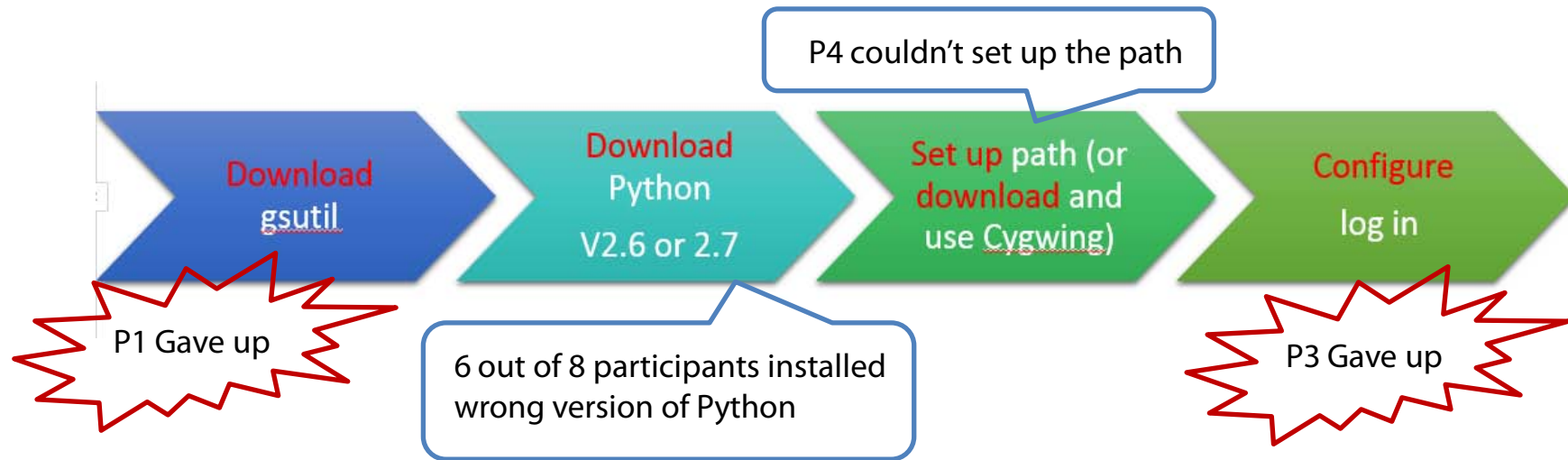
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# Installation SW

Cumbersome to Install: Complicated process to install





# Installation gsutil

## Instruction is not clear.

P2 Command to install not found

P6,P7: Use console to verify installation

The screenshot shows the 'gsutil' installation instructions page. It is divided into three main sections: '1. Sign up', '2. Install gsutil', and '3. Create a Google Cloud Storage bucket using gsutil'. Section 2, 'Install gsutil', is the focus of the callouts. It includes a sub-section 'a. Download and install gsutil.' with a command to download the tool. A blue callout points to this command, stating 'P2 Command to install not found'. Below this is sub-section 'b. Add gsutil to your path.' with a command to add the tool to the PATH. A blue callout points to this command, stating 'P6,P7: Use console to verify installation'. Below that is sub-section 'c. Authenticate to the Google Cloud platform.' with a command to run 'gsutil config'. A red callout points to this section, stating 'P3,P4, P7: documentation problem: no command line for log in'. At the bottom, section 3 is partially visible.

1. Sign up

- a. If you don't already have one, [sign up for a Google account](#).
- b. Create a Google Cloud Storage enabled project via the [Google Cloud Console](#).

2. Install gsutil

[gsutil](#) is a command line tool that you can use to access Google Cloud Storage. It requires [Python 2.6.x](#) or [2.7.x](#).

[Installing on Linux or Mac OS X](#) [Installing on Windows](#)

a. Download and install gsutil.

Download and extract [gsutil](#) into your `HOME` directory using the following command:

```
$ curl http://storage.googleapis.com/pub/gsuite.tar.gz | tar xvfz -C "$HOME"
```

b. Add gsutil to your path.

Add the following line to your `~/.bashrc` file on Linux or Windows with Cygwin, or to your `~/.bash_profile` on Mac OS X and restart your terminal for the changes to take effect.

```
export PATH="$PATH:~/gsutil"
```

c. Authenticate to the Google Cloud platform.

When prompted for a project ID, use the one you created in Step 1.

```
$ gsutil config
```

3. Create a Google Cloud Storage bucket using gsutil



# Installation Python

P7: "hard to find the old version"

The screenshot shows the Python Software Foundation website. The header includes the Python logo, a search bar, and links for 'Socialize' and 'Sign In'. The main navigation bar contains links for 'About', 'Downloads', 'Documentation', 'Community', 'Success Stories', 'News', and 'Events'. On the left, there is a 'Tweets' section with several tweets from @ThePSF. The main content area is titled 'Download Python' and states that the current production versions are Python 2.7.6 and Python 3.3.5. It provides instructions on how to choose between versions and lists download links for various operating systems and architectures.

**Download Python**

The current production versions are [Python 2.7.6](#) and [Python 3.3.5](#).

Start with one of these versions for learning Python or if you want the most stability, they're both considered stable production releases.

If you don't know which version to use, try Python 3.3. Some existing third-party software is not yet compatible with Python 3; if you need to use such software, you can download Python 2.7.x instead.

For the MD5 checksums and OpenPGP signatures, look at the [detailed Python 3.3.5 page](#):

- [Python 3.3.5 Windows x86 MSI Installer](#) (Windows binary -- does not include source)
- [Python 3.3.5 Windows X86-64 MSI Installer](#) (Windows AMD64 / Intel 64 / X86-64 binary [1] -- does not include source)
- [Python 3.3.5 Mac OS X 64-bit/32-bit x86-64/386 Installer](#) (for Mac OS X 10.6 and later [2])
- [Python 3.3.5 Mac OS X 32-bit \(386\)/PPC Installer](#) (for Mac OS X 10.5 and later [2])
- [Python 3.3.4 compressed source tarball](#) (for Linux, Unix or Mac OS X)
- [Python 3.3.5 xzipped source tarball](#) (for Linux, Unix or Mac OS X, better compression)

the link to find authorization code.

P4: "It is lousy, not a good UX..."



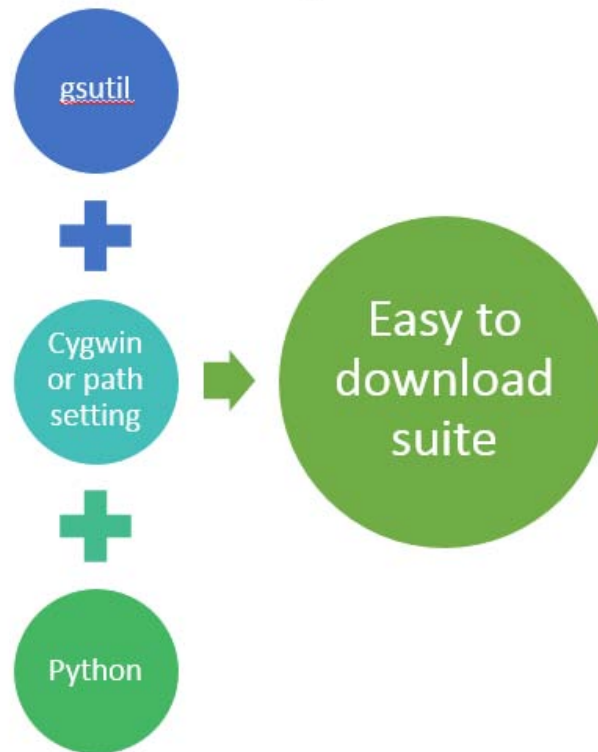


# Installation Suggestion

## **Suggestion:**

**Have it bundle up into a suite  
Or a PIP**

Need clear instruction for log in:  
What to do to log in?  
What is authorization code?





# Output/Messages

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## **Verification:**

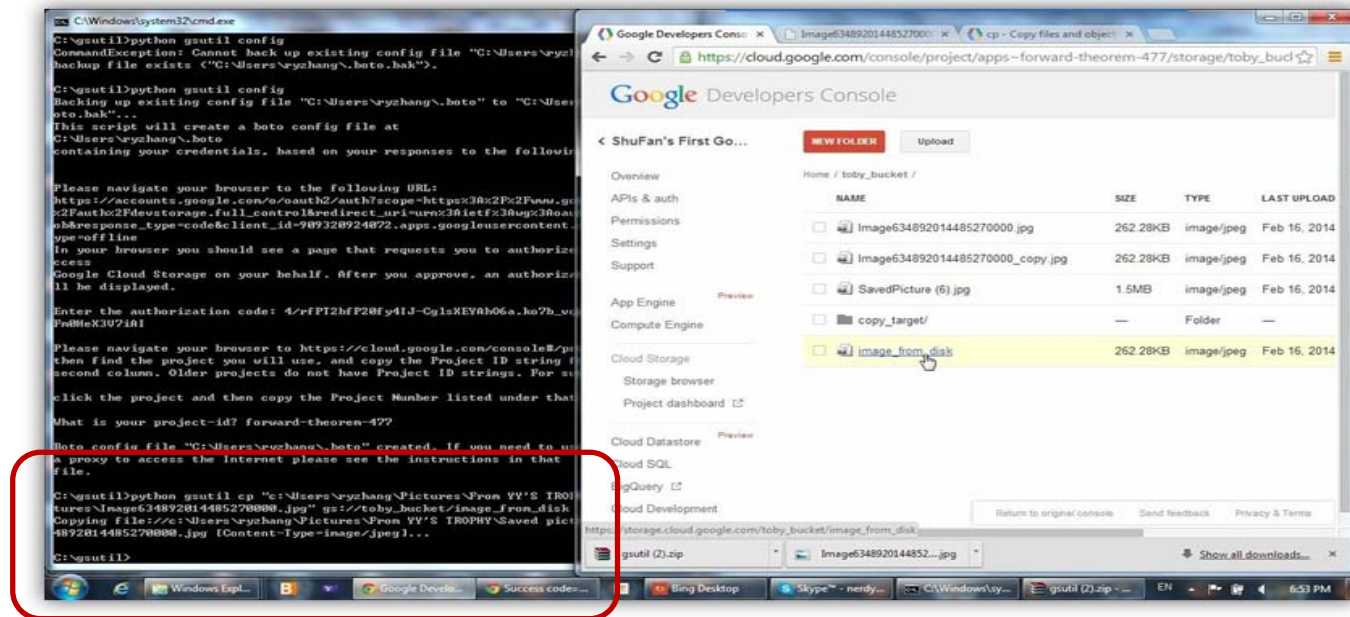
Verify if they logged in and finish a task

## **Message Output/ Feedback:**

Need useful feedback

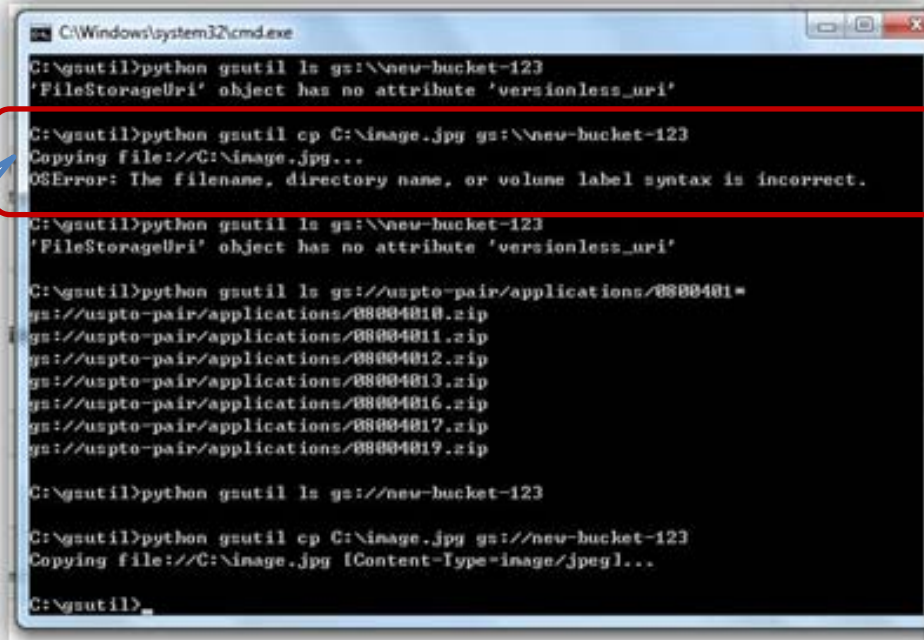
# Output/Messages

## No Feedback at all



# Output/Messages

"The error message is useless..." P2



```
C:\Windows\system32\cmd.exe

C:\gsutil>python gsutil ls gs:\\new-bucket-123
'FileStorageUri' object has no attribute 'versionless_uri'

C:\gsutil>python gsutil cp C:\image.jpg gs:\\new-bucket-123
Copying file:///C:/image.jpg...
OSError: The filename, directory name, or volume label syntax is incorrect.

C:\gsutil>python gsutil ls gs:\\new-bucket-123
'FileStorageUri' object has no attribute 'versionless_uri'

C:\gsutil>python gsutil ls gs://uspto-pair/applications/0800401=
gs://uspto-pair/applications/08004010.zip
gs://uspto-pair/applications/08004011.zip
gs://uspto-pair/applications/08004012.zip
gs://uspto-pair/applications/08004013.zip
gs://uspto-pair/applications/08004016.zip
gs://uspto-pair/applications/08004017.zip
gs://uspto-pair/applications/08004019.zip

C:\gsutil>python gsutil ls gs://new-bucket-123

C:\gsutil>python gsutil cp C:\image.jpg gs://new-bucket-123
Copying file:///C:/image.jpg [Content-Type=image/jpeg]...

C:\gsutil>
```

# User's Feedback

"Not sure if logged in"

- Upload, delete and move objects
- List your buckets and objects
- Share objects and buckets

## Step 1: Create a bucket

First, create two buckets in your project with unique bucket names named cats and dogs:

```
gsutil mb gs://cats gs://dogs
```

**Note:** If you are running gsutil on a Windows operating system, you must type `python gsutil mb gs://cats gs://dogs`.

Choose bucket names that are unique when you create them to avoid the following error:

```
Failure: GSCreateError: 409 Conflict
BucketNameUnavailableThe requested bucket name is not available. The bucket namespace is shared by all users of the system. Please select a different name and try again.
```

It means that the bucket names cat or dog are already taken in the entire Google Cloud Storage system. Someone else has already created buckets named cats or dogs, so you won't be allowed to create another bucket with the same name. You'll have to modify the bucket names so that they are unique, but you must also follow the [bucket naming guidelines](#).

It is also possible to specify a location constraint so that your bucket is created in a geographical location by including the `-l` flag. For more information, see [Specifying Bucket Locations](#).

```
C:\Windows\system32\cmd.exe

c:\Python27>python C:\gsutil\gsutil mb gs://cats
Creating gs://cats/...
Failure: GSCreateError: 409 Conflict
<?xml version='1.0' encoding='UTF-8'?><Error><Code>BucketNameUnavailable</Code><Message>The requested bucket name is not available. The bucket namespace is shared by all users of the system. Please select a different name and try again.</Message></Error>.

c:\Python27>python C:\gsutil\gsutil mb gs://test
Creating gs://test/...
Failure: GSCreateError: 409 Conflict
<?xml version='1.0' encoding='UTF-8'?><Error><Code>BucketNameUnavailable</Code><Message>The requested bucket name is not available. The bucket namespace is shared by all users of the system. Please select a different name and try again.</Message></Error>.

c:\Python27>python C:\gsutil\gsutil ls gs://uspto-pair/applications_
```



# Documentation

## Online Tutorial by examples

No indication of where the user is.

Felt “annoyed” to go outside of the tool and on the Web to look for information

Felt “annoyed” to go outside of the tool and on the Web to look for information

Felt “annoyed” to go outside of the tool and on the Web to look for information.

Disliked documentation

By Commands

ls  
cp  
defacl  
du

```
-u <id|email>:<perm>  
-g <id|email|domain|All|AllAuth>:<perm>  
-d <id|email|domain|All|AllAuth>
```

ls  
mb  
mv  
notification  
perfdiag  
rb  
rm  
setmeta  
stat  
test  
update

Get

The “acl get” command gets the ACL XML for a bucket or object, which you can save and edit for the acl set command.

Set

The “acl set” command allows you to set an Access Control List on one or more buckets and objects. The simplest way to use it is to specify one of the canned ACLs, e.g.,

```
gsutil acl set private gs://bucket
```

or

```
gsutil acl set public gs://bucket/object
```

What is “Private”?





# Configuration

## Language

It should have standard language within command line world.  
The tab should mirror UI with the command line

## Delete

If the bucket is not empty,  
user cannot delete the bucket.  
Requires user to delete every item  
in the bucket in advance.

"It's time consuming" (P8)  
"repetitive, feel tedious" (P6)

```
dev          Contributing Code to gsutil
metadata     Working With Object Metadata
naming       Object and Bucket Naming
options      Top-Level Command-Line Options
prod         Scripting Production Transfers
projects     Working With Projects
subdirs      How Subdirectories Work
support      Google Cloud Storage Support
versions     Object Versioning and Concurrency Control
wildcards    Wildcard Names

Use gsutil help <command or topic> for detailed help.

C:\gsutil>\python27\python gsutil rb gs://hcdfinance
Removing gs://hcdfinance/...
GSResponseError: status=409, code=BucketNotEmpty, reason="Conflict", messag
e bucket you tried to delete is not empty."

C:\gsutil>\python27\python gsutil rb gs://he_
```

## User's Feedback

**““Would need to hire an intern.”**



# Configuration: system configuration

## **Copy Links, Project ID, and URL**

Copy URL from command browser is hard to complete is cumbersome

“A lot of back and forth to copy link and project ID to the browser.” (P4)

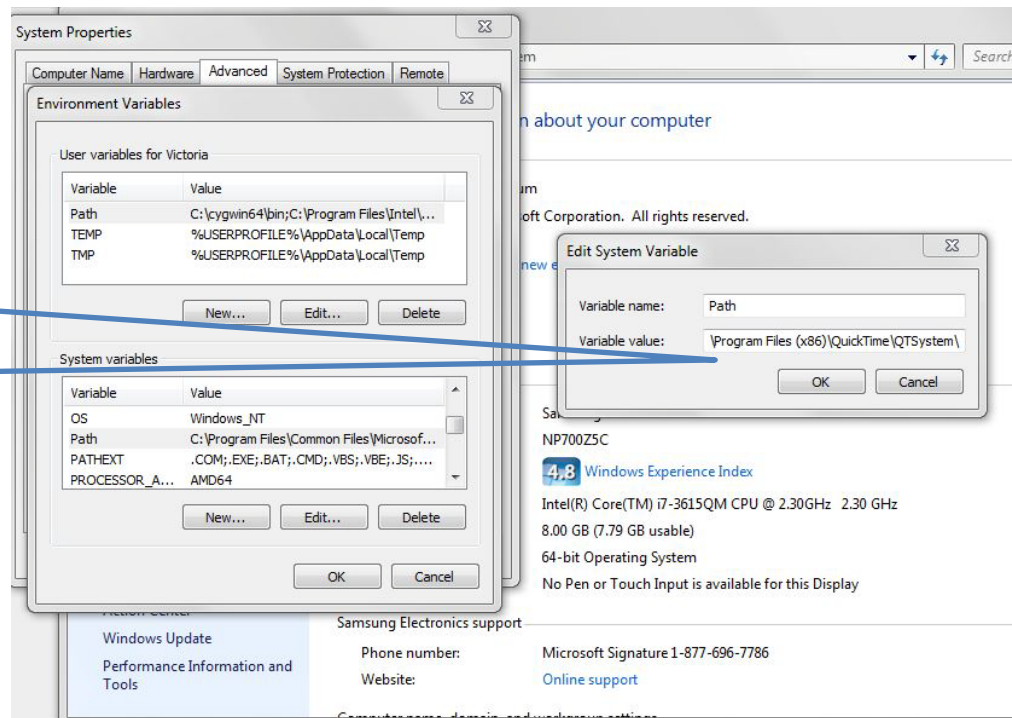


# Configuration

## Adding Path

Add path in command line is troublesome.

“It should be automated, have it linked together; though it could be a Window's problem.”(P8)



# Wrap up

## **Expectation vs Satisfaction**

5E's of Usability

SUS

## **Recommendation**

Overall Recommendation

Lessons Learned

Next Steps





# Expectation vs Satisfaction

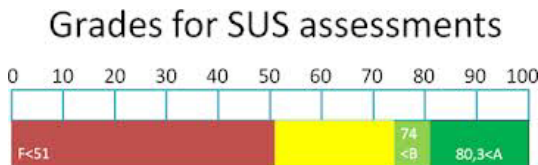
Comparison of Expectations Before/After Tasks

## 5E's of Use

It is a simple method to gauge and visualize the balance of needs for each dimension and help with actionable recommendations

## Systems Usability Scale

SUS is a simple, widely used 10-statement survey



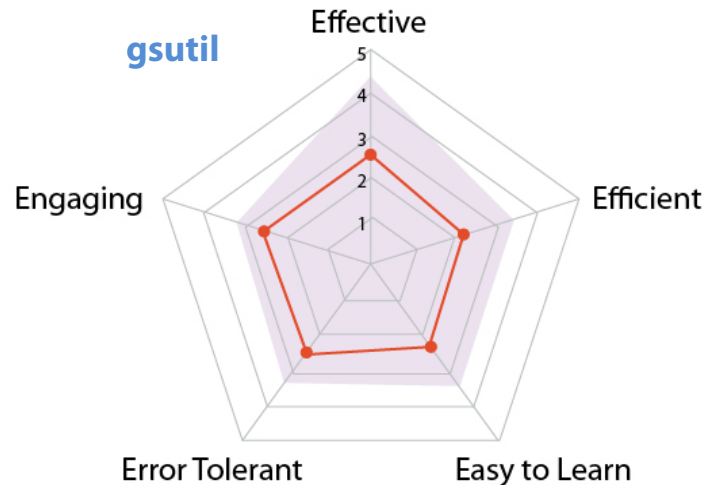
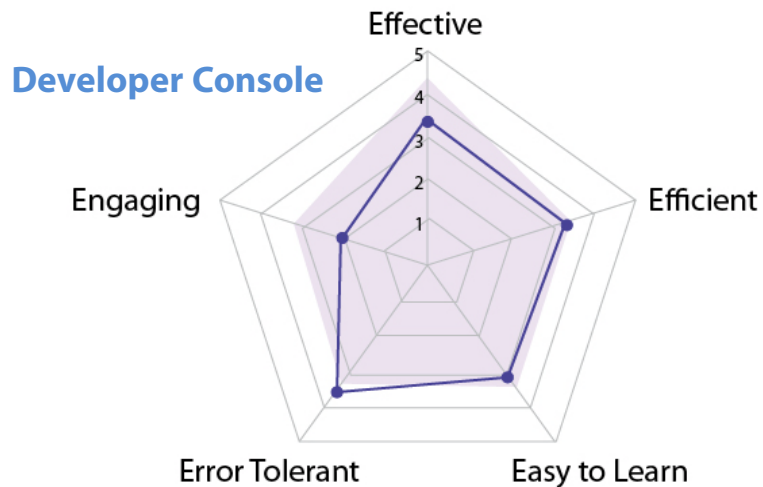
Grades according to Jeff Sauro in *Measuring Usability with the System Usability Scale (SUS)*. Where the limits for a C and a D are not clear.





# 5E's of Usability

Expectation score before gsutil task sections and comparison scores after gsutil task section experiences



\* Gray = Pre-expectation before task/ Line = Satisfaction after task / 1 = low not E / 5 = high very E

# Systems Usability Scale (SUS)

# 44.3

1 quote from SUS

## SUS

P1(pilot test) n/a

P2: 45

P3: 37.5

P4: 45

P5: 47.5

P6: 62.5

P7: 37.5

P8: 35

## Grades for SUS assessments



Grades according to Jeff Sauro in *Measuring Usability with the System Usability Scale (SUS)*. Where the limits for a C and a D are not clear.





# Overall Recommendation - General Suggestion

## Google Like Products

Save/Copy/Paste/Click/Design, etc.



+Vina



Search



Mail



Drive



Calendar

## Project Dashboard

### Beta/Trails

Or, how free would be incentive to use.

### Videos



"Download should work like gmail for console." (P8) "Be more like gdrive on how to use for example copy and paste"



# Overall Recommendation - General Suggestion

## Pricing

- Five users shared price important comparison with other products. Indicated desire to pay less than others.
- Suggest take the Walmart undercut policy approach Project Dashboard

"Walmart pricing structure would help with marketing these services."



## Billing

- Provide examples and information on cost structure understand cost impacts and see visible values.
- Billing links that show real-time ticker as funds accrue.



# Overall Recommendation - Console

Priority	Product Area	Category	Subcategory
P1	Functionality	User Interaction	<ul style="list-style-type: none"><li>· Fix Overview page to display correct information and unblock users from other pages.</li><li>· Add mapping hierarchy to the file structure and design layout.</li><li>· State Message: Show message displays of user actions</li></ul>
P1	Documentation	Terminology and Nomenclature	<ul style="list-style-type: none"><li>· Clarify on the usage of ProjectID, Object Permission, and Private</li><li>· Add definitions for these terms and use consistent terms for the names.</li><li>· Add online Help and examples on how-to use the Console</li></ul>



## User's Feedback

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**“ I know it is not a test about me,  
but I feel that I was in a job interview.”**



# Lessons Learned

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## Tools and Equipment

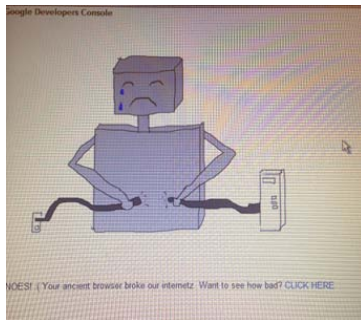
- Software-Morae
  - Issues with video and audio
  - Lack of consistent face captures.
- Hardware - Old PC (LUTE)
  - Broken system
  - Administrative Rights

## Time to Task/Completion

- Tasks overload.
- Task questionnaires too long

## Data Analysis

- Huge amount of data to evaluate in short duration
    - Methods of data breakdown.
- Affinity diagram



# Next Steps

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## Pricing

- Polish data and review findings with client
- Possible opportunity to present to Google's product teams.