Assignment 02

Software Security – IE5042

OAuth Authorization

Implementing a web application that consumes the service of OAuth Authorization Server and OAuth Resource Server

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SECTION I : Prerequisite

1. To run .php application install XAMPP or any other web server in to your computer.
2. To edit code snippet, install a Text editor (Notepad, Sublime text)

SECTION II : The Process of uploading a file to Google Drive using OAuth Authorization

a. Use XAMMPP server to run the application

Start XAMPP

After XAMMPP server started successfully, open the browser using the following url

http://localhost

b. Obtaining Credentials from the google API console

Go to Google API Console usin the following link.

https://console.developers.google.com

Create a new project and configure consent screen.

Here select user type as **External** and update App information.

Next generate credentials. Create OAuth client ID giving application type as Web Application and adding a suitable name.

Under the section Authorized JavaScript origins add the URI as http://localhost.

Under Authorized redirect URIs add the URL as our application URI as http://localhost/ProjectGoogle/upload.html which is our developed web application.

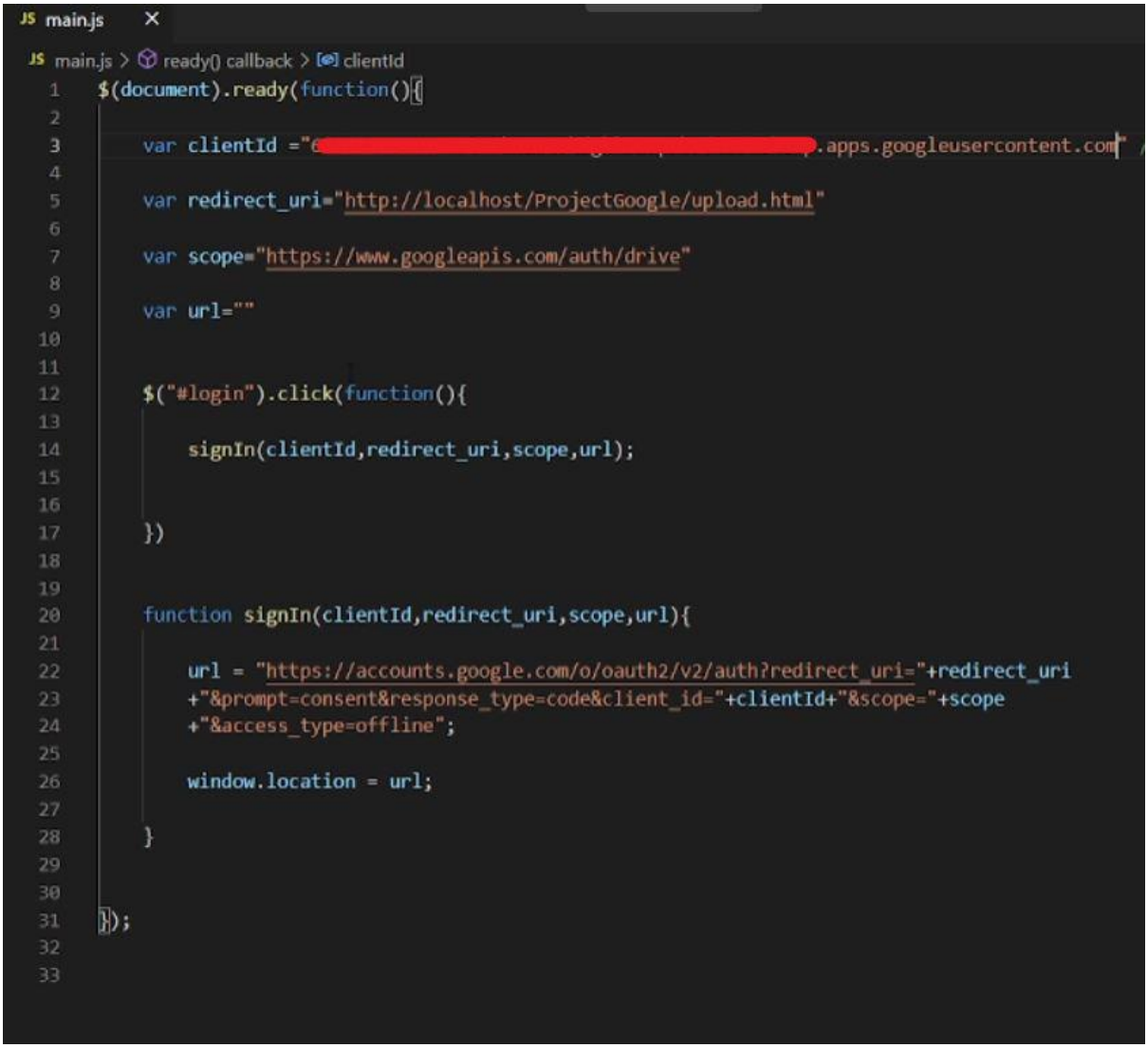
Finally Create OAuth client ID, Client Secret and save it in a separate location where it is accessible.

Go to Google Client Library. Next Enable the following APIs which are necessary for this process.

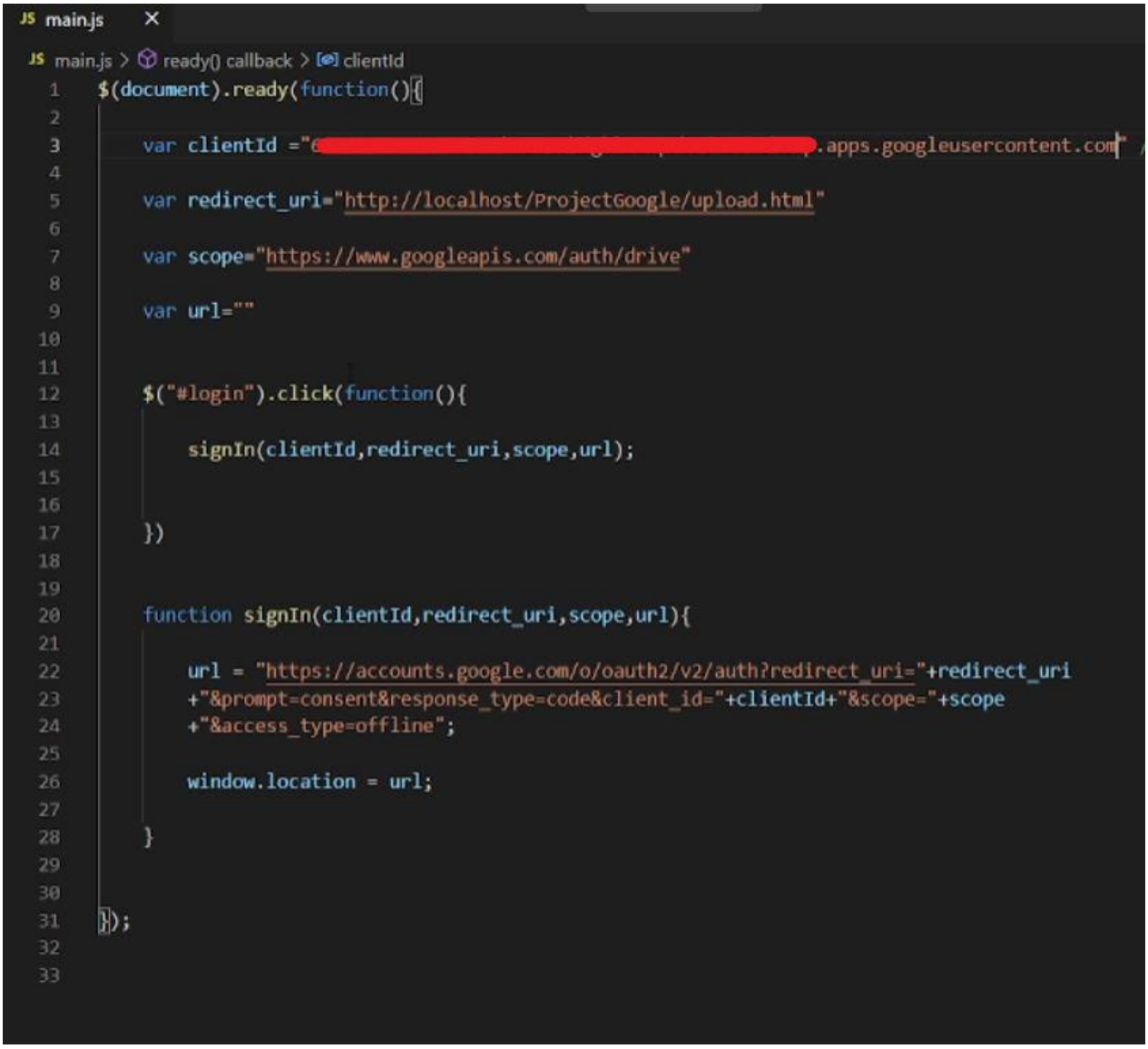
- Google Drive API
- Google+ API

c. Configure Web Application with tokens

Here, save the OAuth Client ID in .json file which is related to login and upload page as follows.



Next save Client Secret in .json file which is related to redirect page of the web application as follows.

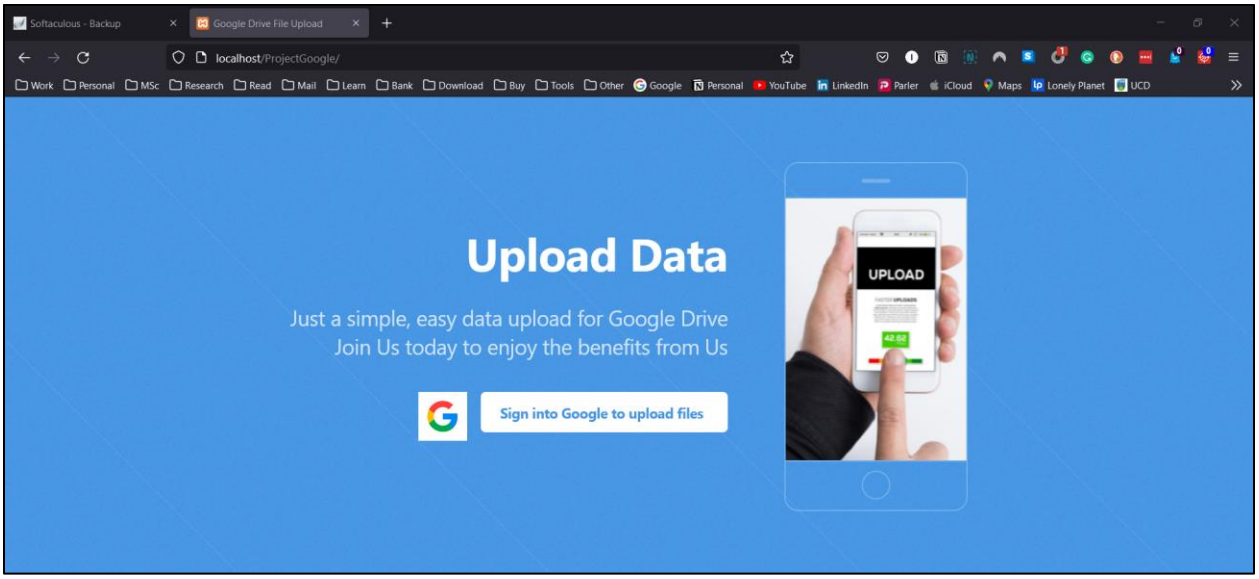

main.js
main.js > ready() callback > clientId
$(document).ready(function(){
var clientId ="[redacted].apps.googleusercontent.com"
var redirect_uri="http://localhost/ProjectGoogle/upload.html"
var scope="https://www.googleapis.com/auth/drive"
var url=""
$("#login").click(function(){
signIn(clientId,redirect_uri,scope,url);
})
function signIn(clientId,redirect_uri,scope,url){
url = "https://accounts.google.com/o/oauth2/v2/auth?redirect_uri="+redirect_uri
+"&prompt=consent&response_type=code&client_id="+clientId+"&scope="+scope
+"&access_type=offline";
window.location = url;
}
});

d. Publishing and Testing the Process

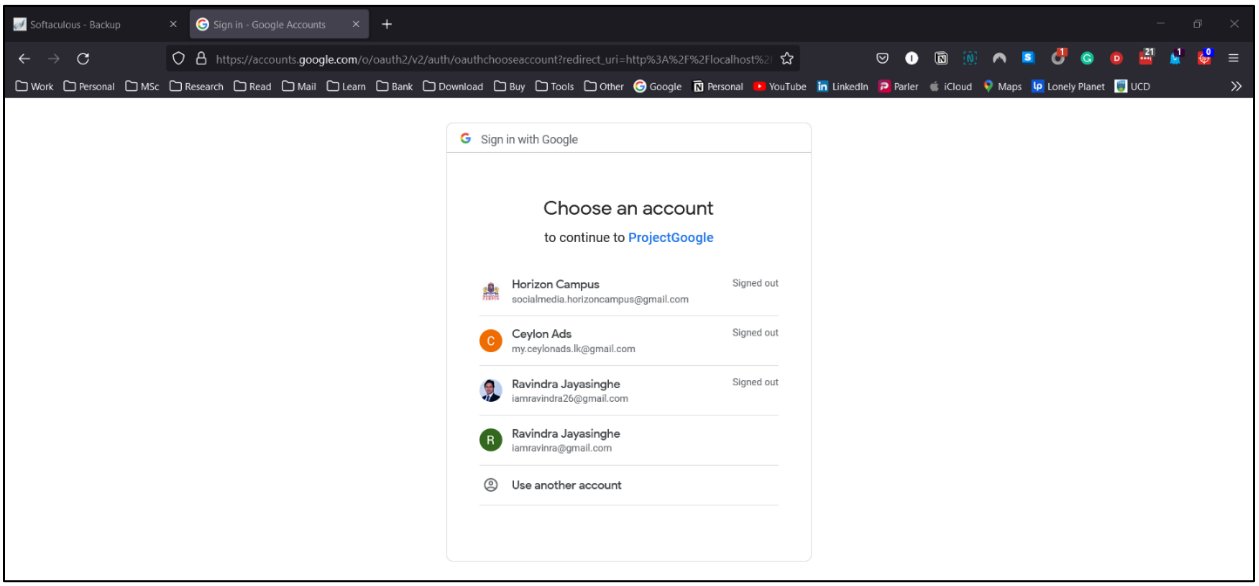
As the process still in testing mode, first need to Publish the application

Next Start testing the process.

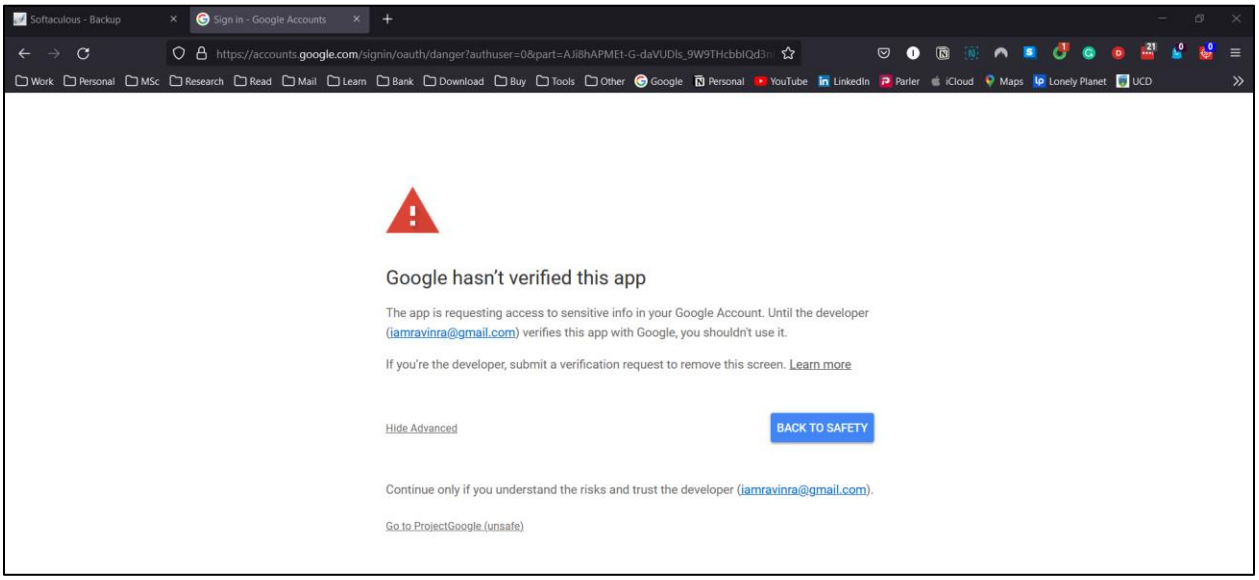
Now go to the URL http://localhost and click the button



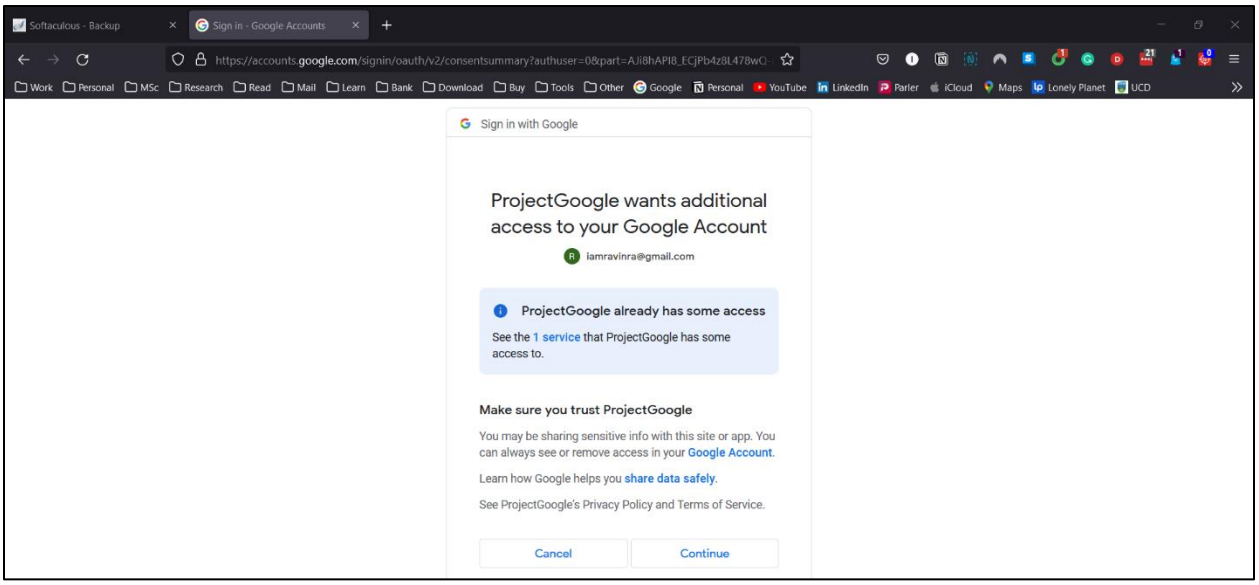
The button link moves to the Google Account Sign In page. Login to your existing Google account.



Next proceed with Google verification

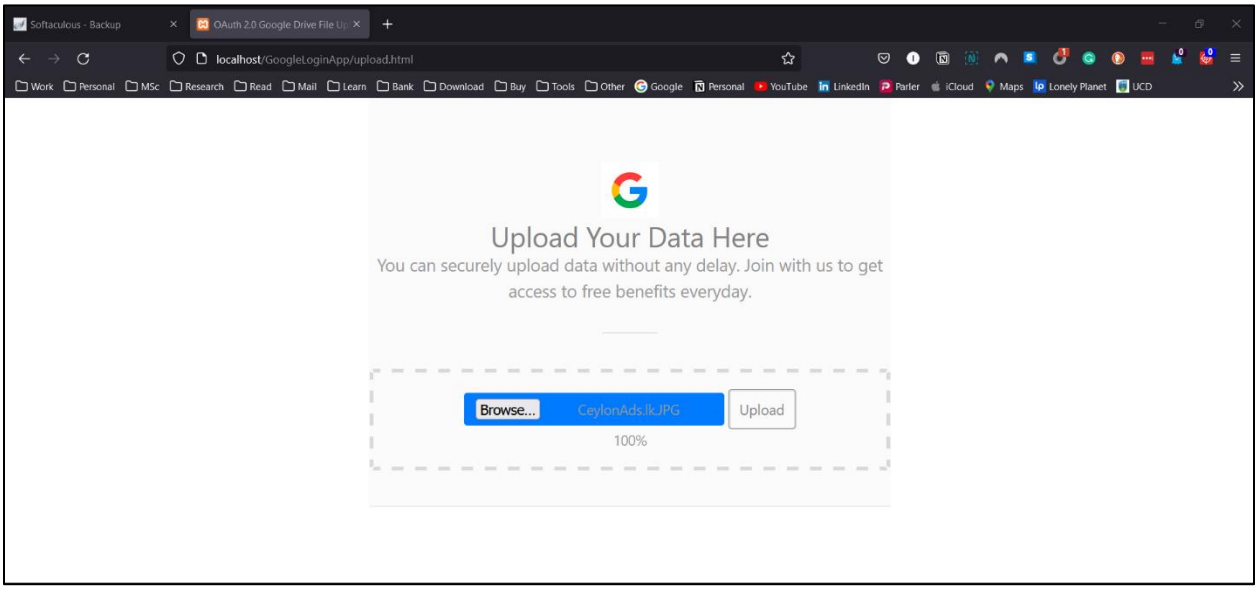


After providing requested access permission you can continue by clicking continue button.

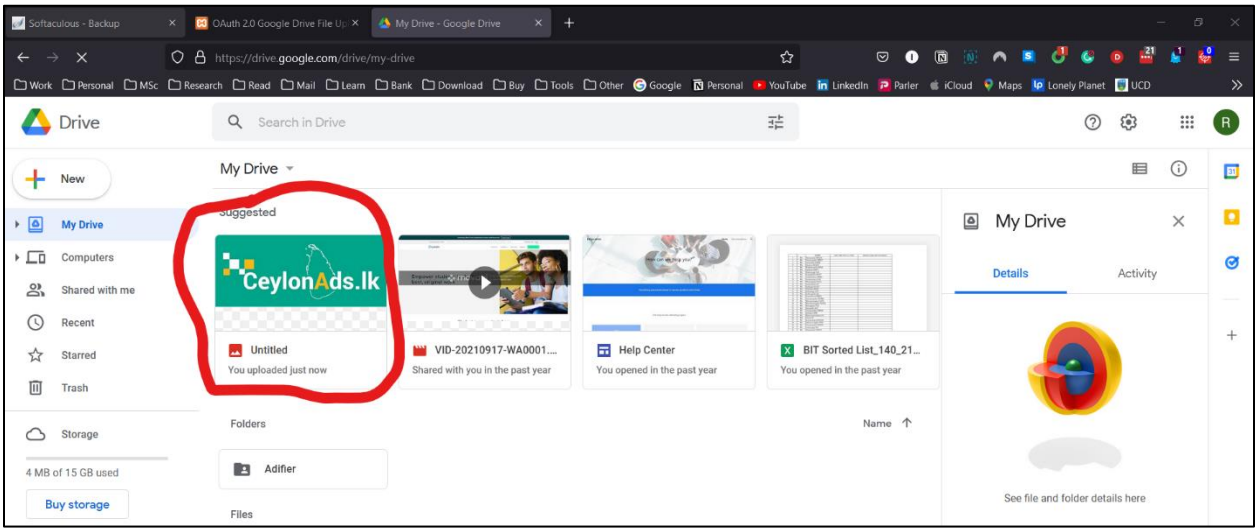


Next you will redirect to File Upload page.

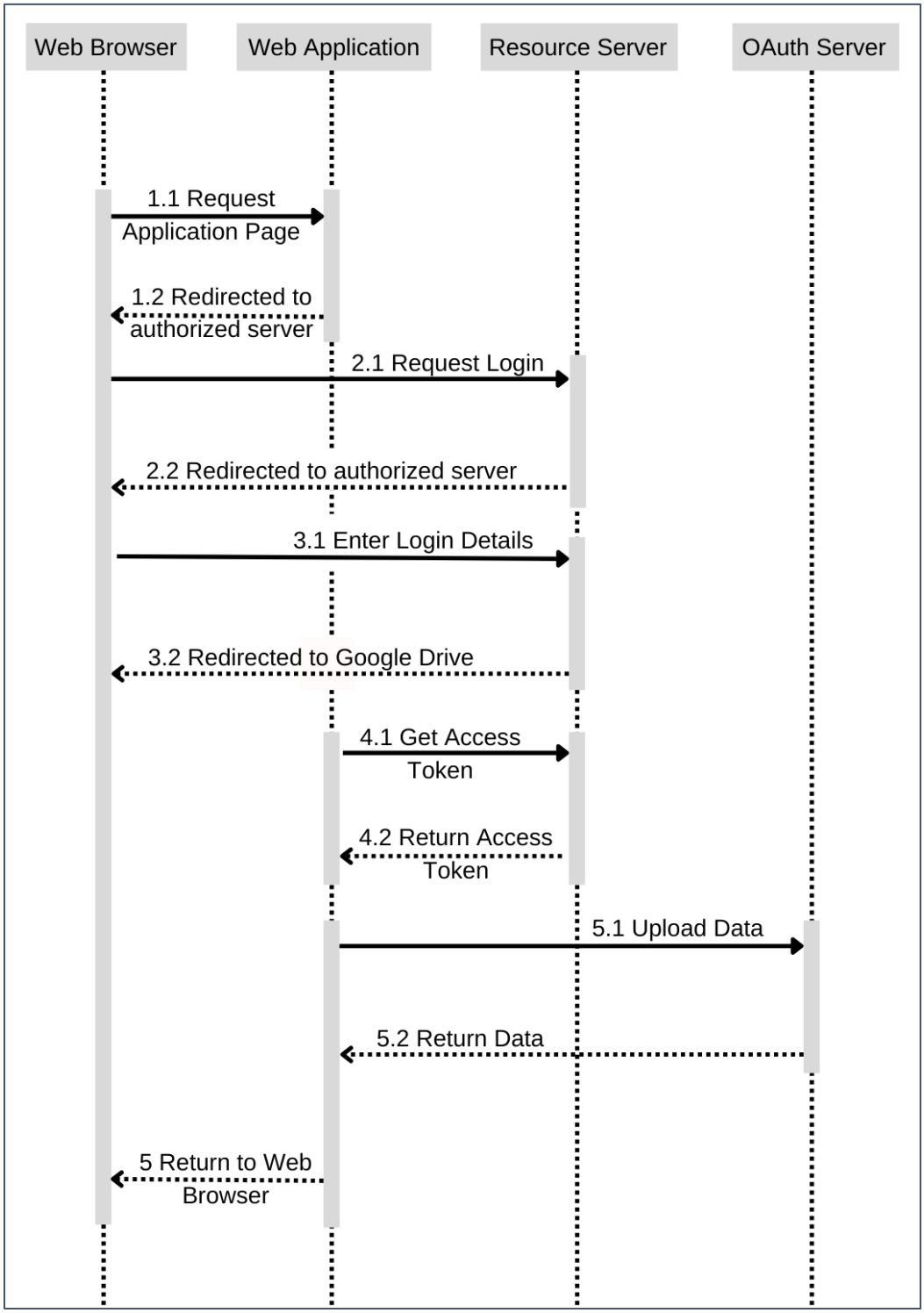
Here, browse the computer and select a file and perform the upload.



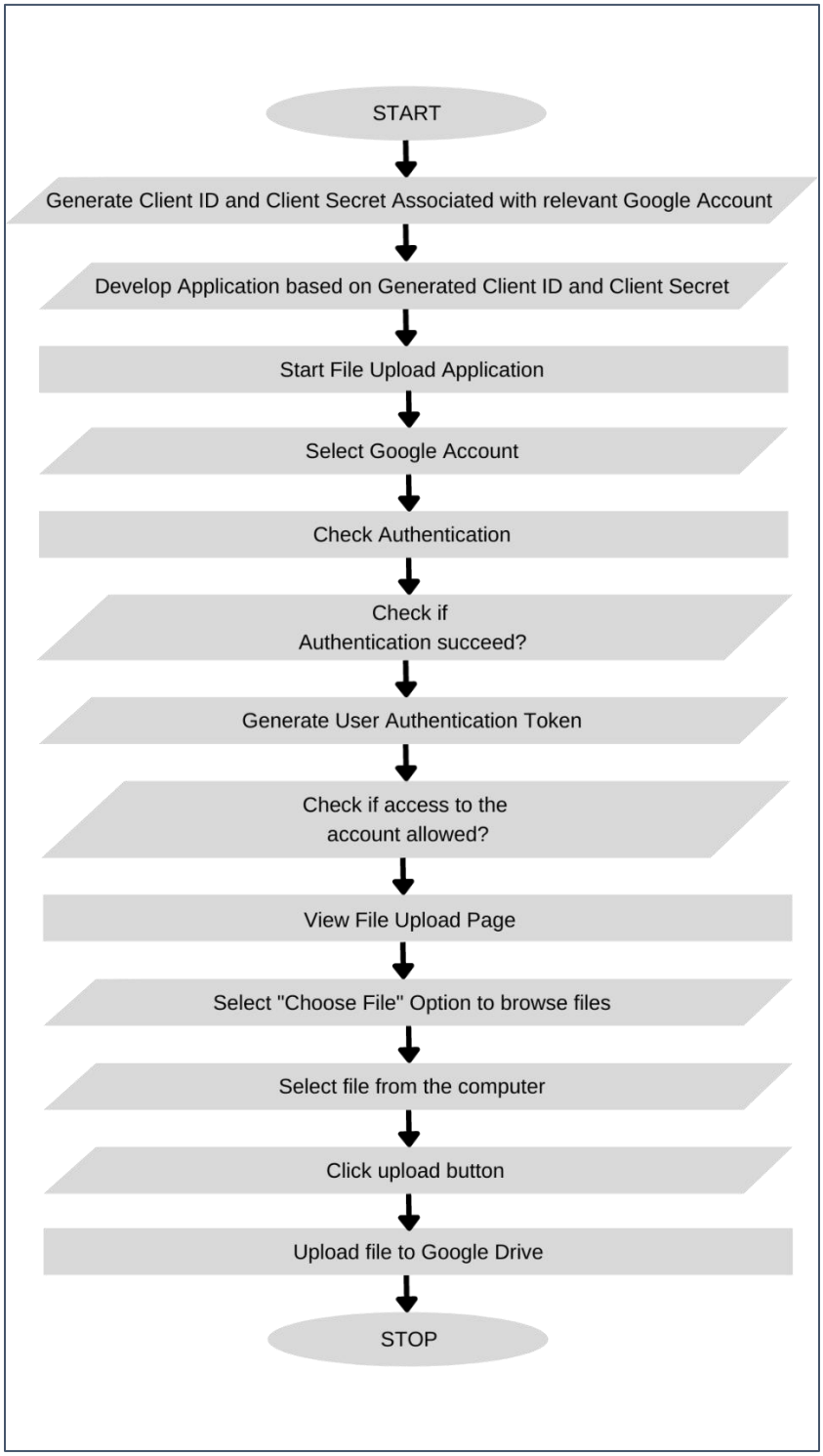
Finally, you can see the uploaded file in your Google drive as follows.



SECTION III : Sequential Diagram for the Process of OAuth Authorization using Web Application

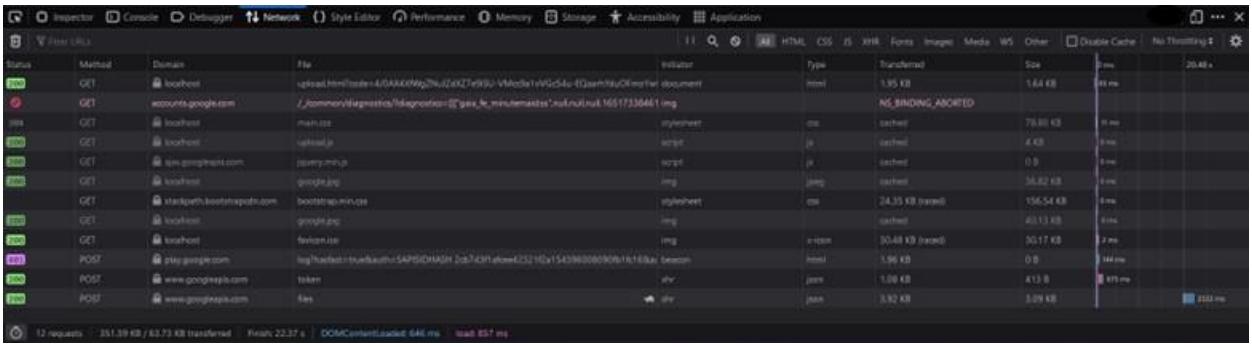


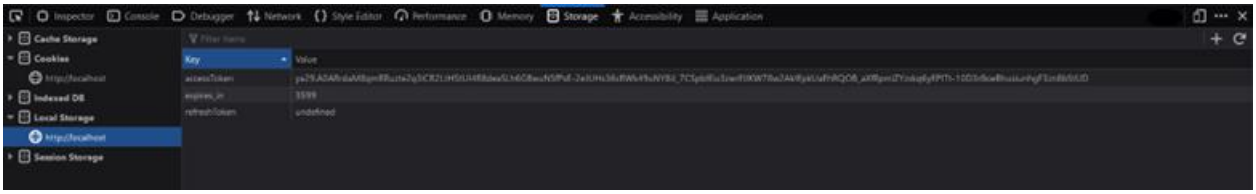
SECTION IV : Sequential Diagram for the Process of OAuth Authorization using Web Application



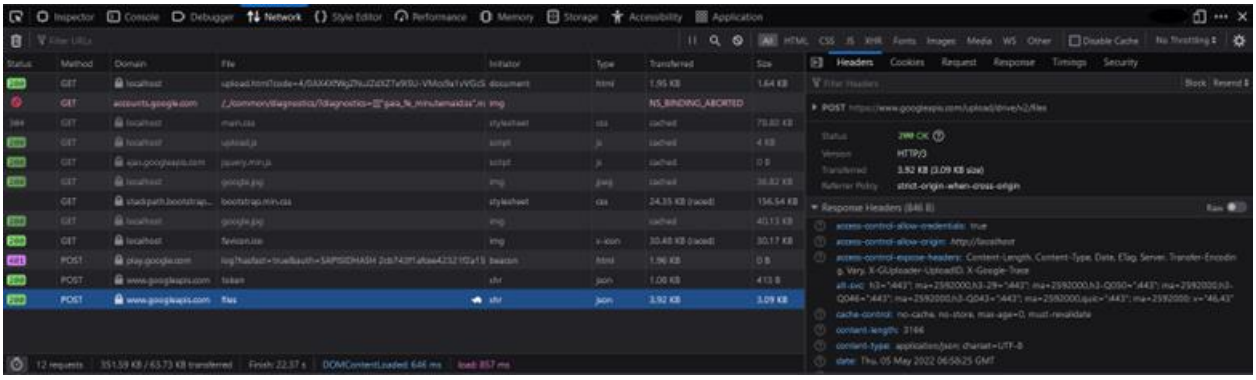
SECTION V : Reports:

1. Generated access token





2. Uploaded file



SECTION VI : Appendix

CODES:

a. INDEX.html

```
<!DOCTYPE html>

<html>

<head>

<meta charset ="utf-8" />

<meta http-equiv ="X-UA-Compatible" content ="IE=edge" />

<title>Google Drive File Upload</title>

<meta name="viewport" content="width=device-width, initial-scale=1" />

<link rel="stylesheet" type="text/css" media="screen" href="main.css" />

<script
src = "https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script
>

<script src ="main.js"></script>

<link

rel = "stylesheet"

href = "https:// path.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"

integrity="sha384-
xJcKb8q3iqJ61gNV9KGb8txhSsNjpSzL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"

crossorigin="anonymous"

/>

  <noscript><link rel="stylesheet" href="assets/css/noscript.css" /></noscript>

</head>

<body>

   <header id="header">

        <div class="content">

          <h1><a href="#">Upload Data </a></h1>

          <p>Just a simple, easy data upload for Google Drive<br />
```

```
          Join Us today to enjoy the benefits from Us</p>

          <ul class="actions">

          <li ><center ><img src="google.jpg" width="60" height="60"
/></center></li>

            <li ><a href="#" class="button primary icon solid fa-upload"
id="login">Sign into Google to upload files</a></li>


          </ul >

        </div >

        <div class="image phone"><div class="inner"><img src="screen.jpg" alt=""
/></div></div>

      </header>

    <!-- Footer -->

      <footer id="footer">

        <ul class="icons">

          <li ><a href ="# " class="icon brands fa-facebook-f"><span
class ="label ">Facebook</span></a></li>

          <li><a href="#" class ="icon brands fa-twitter"><span
class="label">Twitter</span></a></li>

          <li ><a href ="#" class ="icon  brands fa-instagram"><span
class ="label">Instagram</span></a></li>

        </ul >

        <p class="copyright">&copy; 2022. Credits: <a href="https.sliit.lk">MSC
Cyber Security SLIIT</a></p>

      </footer>

</div>

</div>

</body>

</html>
```

b. UPLOAD.html

```
<!DOCTYPE html>

<html>

<head>

<meta charset ="utf-8" />

<meta http-equiv="X-UA-Compatible" content="IE=edge" />

<title>OAuth 2.0 Google Drive File Upload</title>

<meta name ="viewport" content ="width=device-width, initial-scale=1" />

<link rel="stylesheet" type ="text/css" media ="screen" href ="main.css" />

<script
src ="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>

<script src="upload.js"></script>

<link

rel ="stylesheet"

href ="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"

integrity ="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z"

crossorigin ="anonymous"

/>

  <noscript><link rel ="stylesheet" href ="assets/css/noscript.css" /></noscript>

</head>

<body>

<section id ="three" class ="wrapper style2 special">

        <header class="major">

          <center><img src ="google.jpg" width ="70" height ="70" /></center>

          <h2>Upload Your Data Here</h2>

          <p>You can securely upload data without any delay. Join with us to get
access to free benefits everyday.</p>

        </header>

        <div class="border-container">
```

```
<input
class ="btn btn-primary "
id ="files "
type ="file "
name ="files[] "
multiple
/>
<button class="btn btn-secondary " id ="upload ">Upload</button>
<div id ="progress-wrp ">
<div class ="progress-bar "></div>
<div class ="status ">0%</div>
</div>
<div id ="result "></div>
</div>
      </section>
</body>
</html>
```

c. UPLOAD.js

```
$(document).ready(function(){
const urlParams = new URLSearchParams(window.location.search);
const code = urlParams.get  ('code');
const redirect_uri = "http://localhost/ProjectGoogle/upload.html"
const client_secret = "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";
const scope = "https://www.googleapis.com/auth/drive";
var access_token= "";
var client_id = "669597444449-
9t9obna11vkdghk980prb56t670ukc7p.apps.googleusercontent.com"
$.ajax  ({
type :  'POST',
url : "https://www.googleapis.com/oauth2/v4/token",
data : {code:code
,redirect_uri :redirect_uri,
client _secret :client_secret,
client_id :client_id,
scope :scope,
grant_type :"authorization_code"},
dataType : "json",
success :  function(resultData) {
localStorage.setItem ("accessToken",resultData.access_token);
localStorage.setItem ("refreshToken",resultData.refreshToken);
localStorage.setItem ("expires_in",resultData.expires_in);
window.history.pushState({}, document.title, "/GoogleLoginApp/" + "upload.html");
}
});
function stripQueryStringAndHashFromPath(url) {
return url.split("?")[0].split("#")[0];
```

```
}
var Upload  = function (file) {
this.file = file;
};
Upload .prototype.getType = function() {
localStorage .setItem ("type",this.file.type);
return this.file.type;
};
Upload .prototype.getSize = function() {
localStorage .setItem  ("size",this.file.size);
return this.file.size;
};
Upload .prototype .getName = function  () {
return this.file.name ;
};
Upload .prototype .doUpload = function  () {
var that = this;
var formData = new FormData();
formData.append("file", this.file, this.getName());
formData.append("upload_file", true);
$.ajax({
type :  "POST",
beforeSend: function(request) {
request.setRequestHeader ("Authorization", "Bearer" + " " +
localStorage.getItem ("accessToken"));
},
url :  "https://www.googleapis.com/upload/drive/v2/files",
data :  {
uploadType:"media"
```

```
},
xhr: function  () {
var  myXhr = $.ajaxSettings.xhr();
if  (myXhr.upload) {
myXhr.upload.addEventListener('progress', that.progressHandling, false);
}
return myXhr;
},
success : function (data) {
console .log(data);
},
error : function (error) {
console.log(error);
},
async : true,
data : formData,
cache : false,
contentType: false,
processData: false,
timeout : 50000
});
};
Upload.prototype.progressHandling = function (event) {
var percent = 0;
var position = event.loaded || event.position;
var total = event.total;
var progress_bar_id = "#progress-wrp";
if  (event.lengthComputable)  {
percent = Math.ceil(position / total * 100);
```

```
}
$ (progress_bar_id + " .progress-bar").css("width", +percent + "%");
$ (progress_bar_id + " .status").text(percent + "%");
};
$ ("#upload").on("click", function  (e) {
var file = $("#files")[0].files[0];
var upload = new Upload(file);
upload.doUpload();
});
});
```

d. MAIN.js

```
$(document).ready(function(){

var clientId ="669597444449-
9t9obna11vkdghk980prb56t670ukc7p.apps.googleusercontent.com"

var redirect uri="http://localhost/ProjectGoogle/upload.html"

var scope="https://www.googleapis.com/auth/drive"

var url=""

$("#login").click (function(){

signIn(clientId,redirect_uri,scope,url);

})

function signIn (clientId,redirect_uri,scope,url){

url = "https://accounts.google.com/o/oauth2/v2/auth?redirect_uri="+redirect_uri

+"&prompt=consent&response_type=code&client_id="+clientId+"&scope="+scope

+"&access_type=offline";

window.location  = url;

}

});
```

SECTION VII : References

GITHUB Link : https://github.com/iamravindraJ/Google-OAuth-2.0

YouTube Video Link : https://youtu.be/AzssMPdtsqo