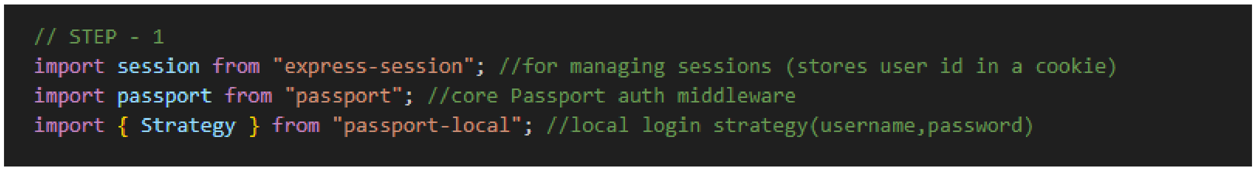
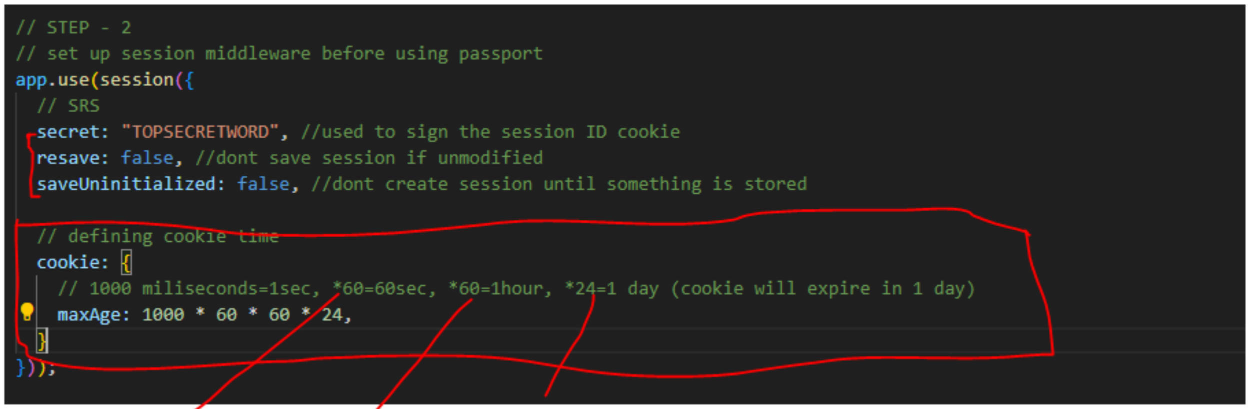
STEPS for LOGIN-REGISTER from Level 3(encryption-local Login Strategy) to Level 6(Google Auth) using OAuth

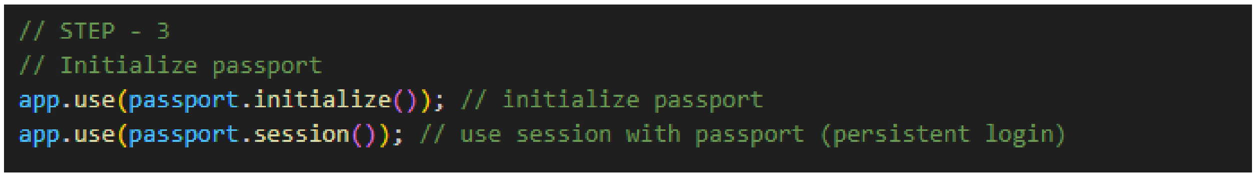


```js
// STEP - 1
import session from "express-session"; //for managing sessions (stores user id in a cookie)
import passport from "passport"; //core Passport auth middleware
import { Strategy } from "passport-local"; //local login strategy(username,password)
```

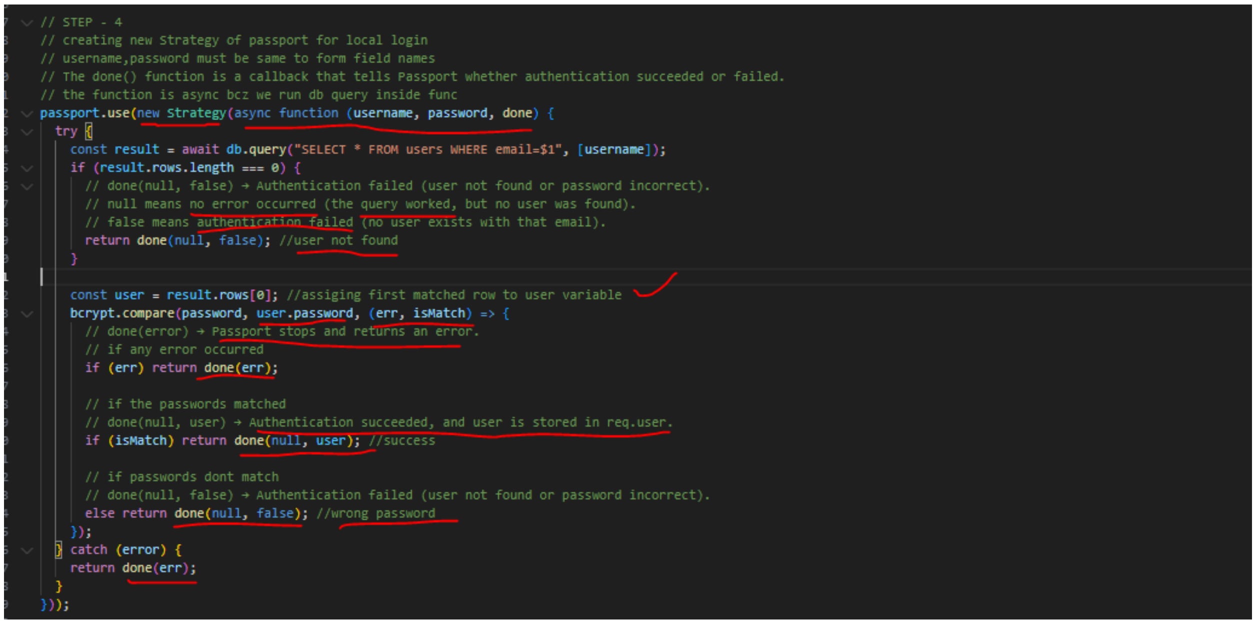


```js
// STEP - 2
// set up session middleware before using passport
app.use(session({
  // SRS
  secret: "TOPSECRETWORD", //used to sign the session ID cookie
  resave: false, //dont save session if unmodified
  saveUninitialized: false, //dont create session until something is stored

  // defining cookie time
  cookie: {
    // 1000 miliseconds=1sec, *60=60sec, *60=1hour, *24=1 day (cookie will expire in 1 day)
    maxAge: 1000 * 60 * 60 * 24,
  }
}));
```

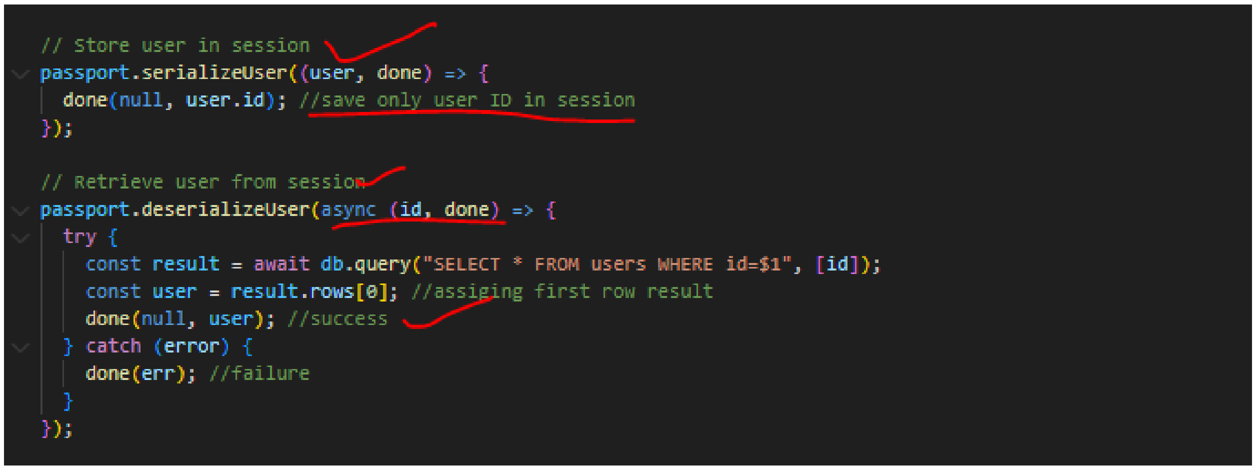
60 sec   hour   hours



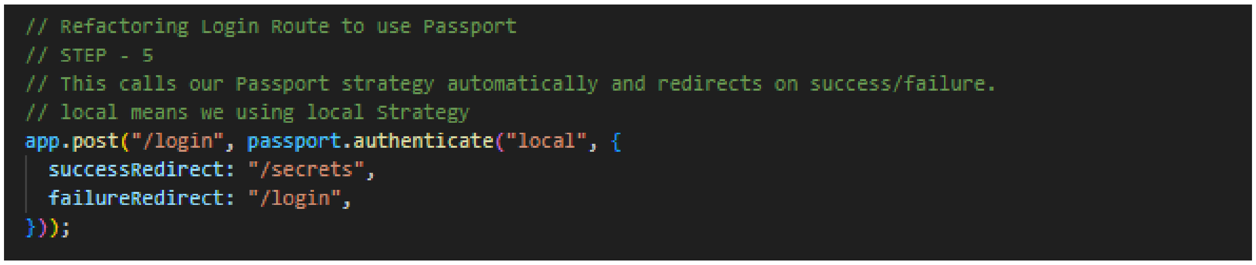
```js
// STEP - 3
// Initialize passport
app.use(passport.initialize()); // initialize passport
app.use(passport.session()); // use session with passport (persistent login)
```



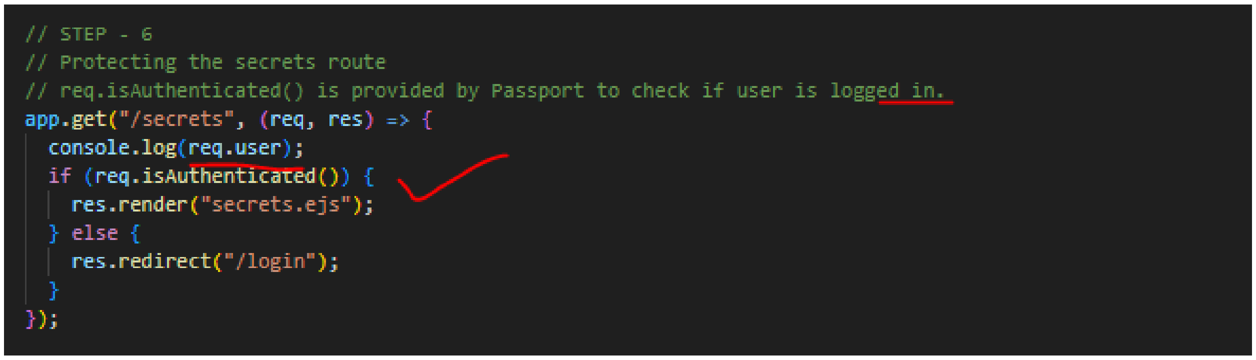
```
// STEP - 4
// creating new Strategy of passport for local login
// username,password must be same to form field names
// The done() function is a callback that tells Passport whether authentication succeeded or failed.
// the function is async bcz we run db query inside func
passport.use(new Strategy(async function (username, password, done) {
  try {
    const result = await db.query("SELECT * FROM users WHERE email=$1", [username]);
    if (result.rows.length === 0) {
      // done(null, false) → Authentication failed (user not found or password incorrect).
      // null means no error occurred (the query worked, but no user was found).
      // false means authentication failed (no user exists with that email).
      return done(null, false); //user not found
    }

    const user = result.rows[0]; //assiging first matched row to user variable
    bcrypt.compare(password, user.password, (err, isMatch) => {
      // done(error) → Passport stops and returns an error.
      // if any error occurred
      if (err) return done(err);

      // if the passwords matched
      // done(null, user) → Authentication succeeded, and user is stored in req.user.
      if (isMatch) return done(null, user); //success

      // if passwords dont match
      // done(null, false) → Authentication failed (user not found or password incorrect).
      else return done(null, false); //wrong password
    });
  } catch (error) {
    return done(err);
  }
}));
```



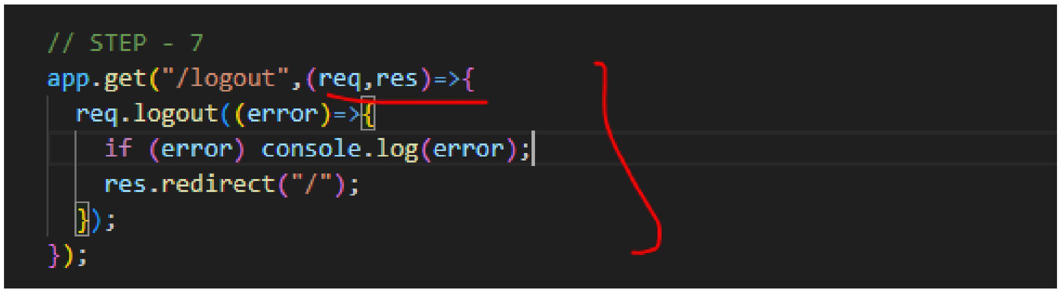
```
// Store user in session
passport.serializeUser((user, done) => {
  done(null, user.id); //save only user ID in session
});

// Retrieve user from session
passport.deserializeUser(async (id, done) => {
  try {
    const result = await db.query("SELECT * FROM users WHERE id=$1", [id]);
    const user = result.rows[0]; //assiging first row result
    done(null, user); //success
  } catch (error) {
    done(err); //failure
  }
});
```



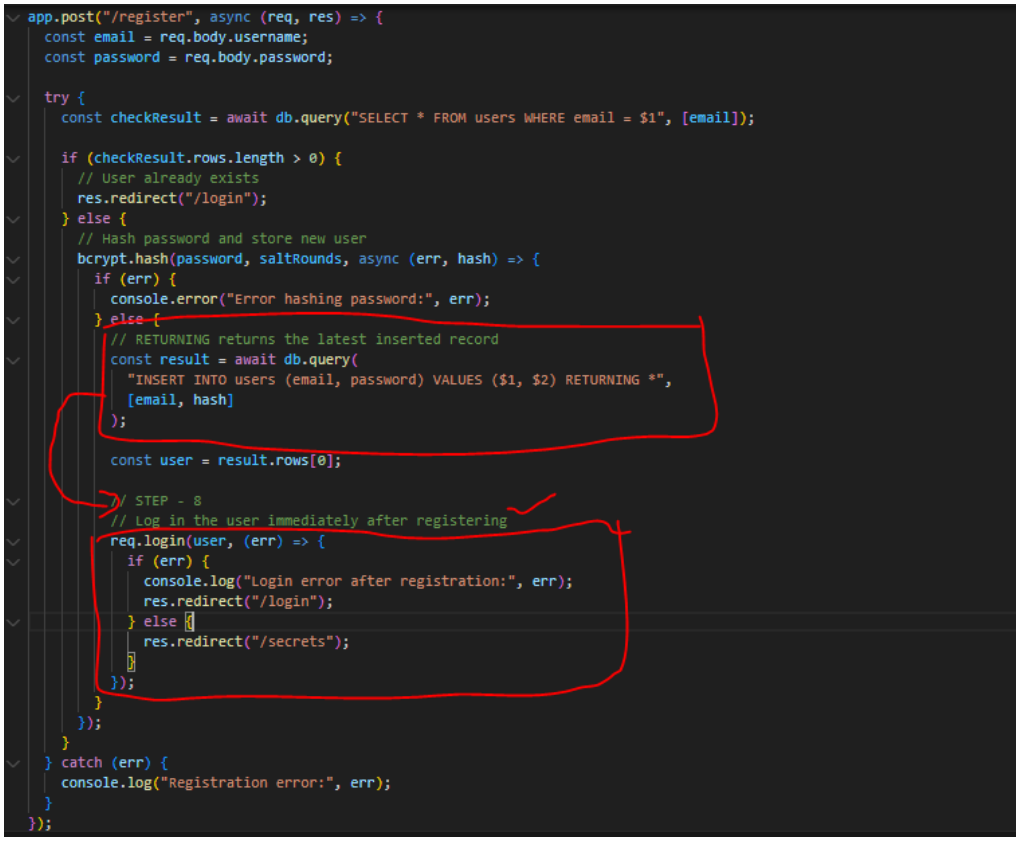
```
// Refactoring Login Route to use Passport
// STEP - 5
// This calls our Passport strategy automatically and redirects on success/failure.
// local means we using local Strategy
app.post("/login", passport.authenticate("local", {
  successRedirect: "/secrets",
  failureRedirect: "/login",
}));
```



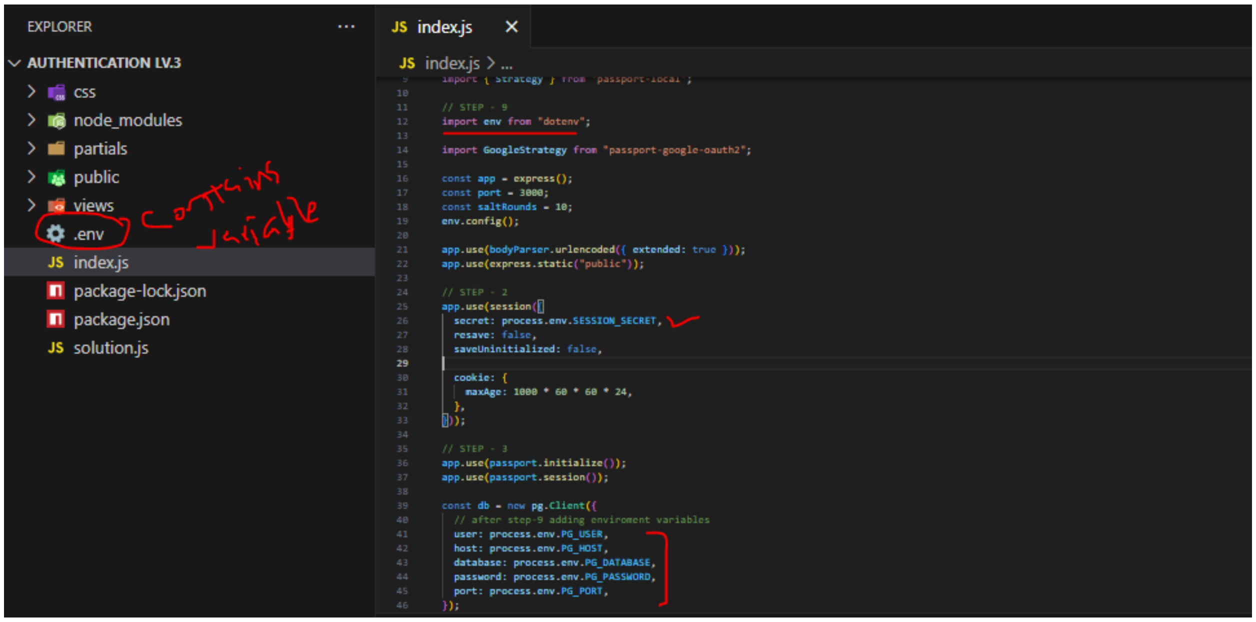
```
// STEP - 6
// Protecting the secrets route
// req.isAuthenticated() is provided by Passport to check if user is logged in.
app.get("/secrets", (req, res) => {
  console.log(req.user);
  if (req.isAuthenticated()) {
    res.render("secrets.ejs");
  } else {
    res.redirect("/login");
  }
});
```



```
// STEP - 7
app.get("/logout",(req,res)=>{
  req.logout((error)=>{
    if (error) console.log(error);
    res.redirect("/");
  });
});
```



```
app.post("/register", async (req, res) => {
  const email = req.body.username;
  const password = req.body.password;

  try {
    const checkResult = await db.query("SELECT * FROM users WHERE email = $1", [email]);

    if (checkResult.rows.length > 0) {
      // User already exists
      res.redirect("/login");
    } else {
      // Hash password and store new user
      bcrypt.hash(password, saltRounds, async (err, hash) => {
        if (err) {
          console.error("Error hashing password:", err);
        } else {
          // RETURNING returns the latest inserted record
          const result = await db.query(
            "INSERT INTO users (email, password) VALUES ($1, $2) RETURNING *",
            [email, hash]
          );

          const user = result.rows[0];

          // STEP - 8
          // Log in the user immediately after registering
          req.login(user, (err) => {
            if (err) {
              console.log("Login error after registration:", err);
              res.redirect("/login");
            } else {
              res.redirect("/secrets");
            }
          });
        }
      });
    }
  } catch (err) {
    console.log("Registration error:", err);
  }
});
```



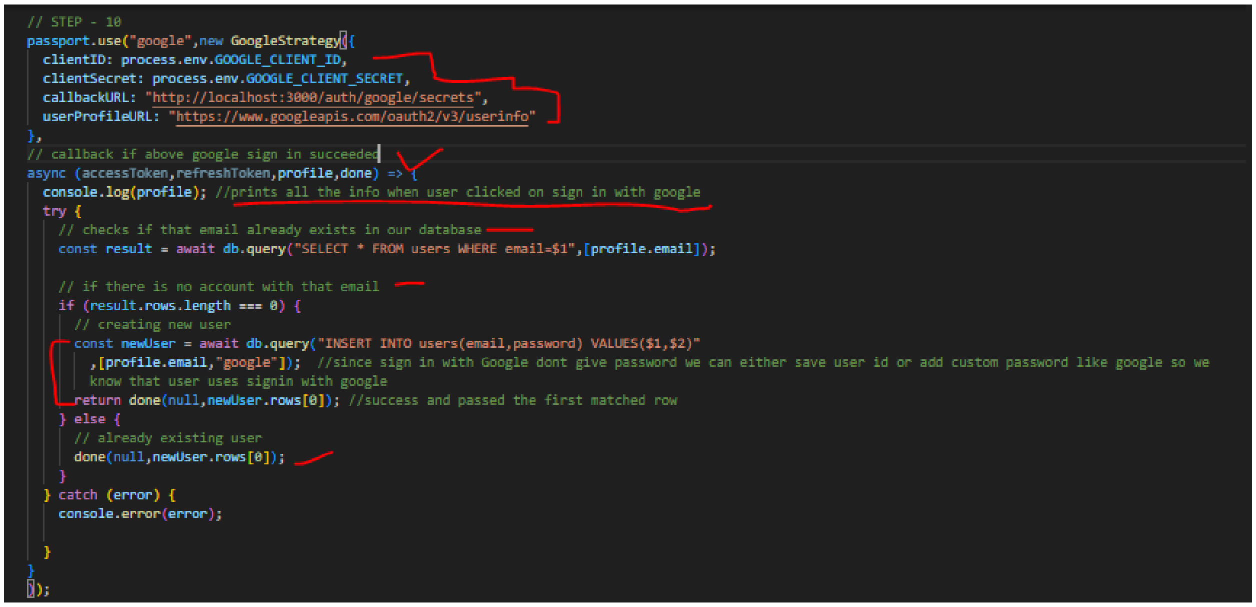
EXPLORER

AUTHENTICATION LV.3
- css
- node_modules
- partials
- public
- views
- .env
- index.js
- package-lock.json
- package.json
- solution.js

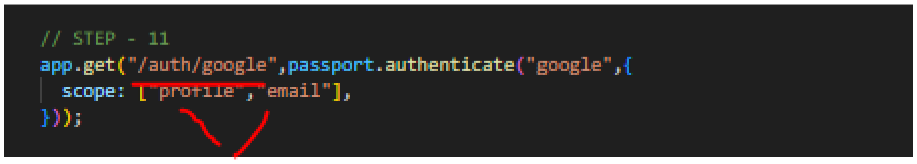
contains variable

index.js

```javascript
import { Strategy } from "passport-local";

// STEP - 9
import env from "dotenv";

import GoogleStrategy from "passport-google-oauth2";

const app = express();
const port = 3000;
const saltRounds = 10;
env.config();

app.use(bodyParser.urlencoded({ extended: true }));
app.use(express.static("public"));

// STEP - 2
app.use(session({
  secret: process.env.SESSION_SECRET,
  resave: false,
  saveUninitialized: false,

  cookie: {
    maxAge: 1000 * 60 * 60 * 24,
  },
}));

// STEP - 3
app.use(passport.initialize());
app.use(passport.session());

const db = new pg.Client({
  // after step-9 adding enviroment variables
  user: process.env.PG_USER,
  host: process.env.PG_HOST,
  database: process.env.PG_DATABASE,
  password: process.env.PG_PASSWORD,
  port: process.env.PG_PORT,
});
```

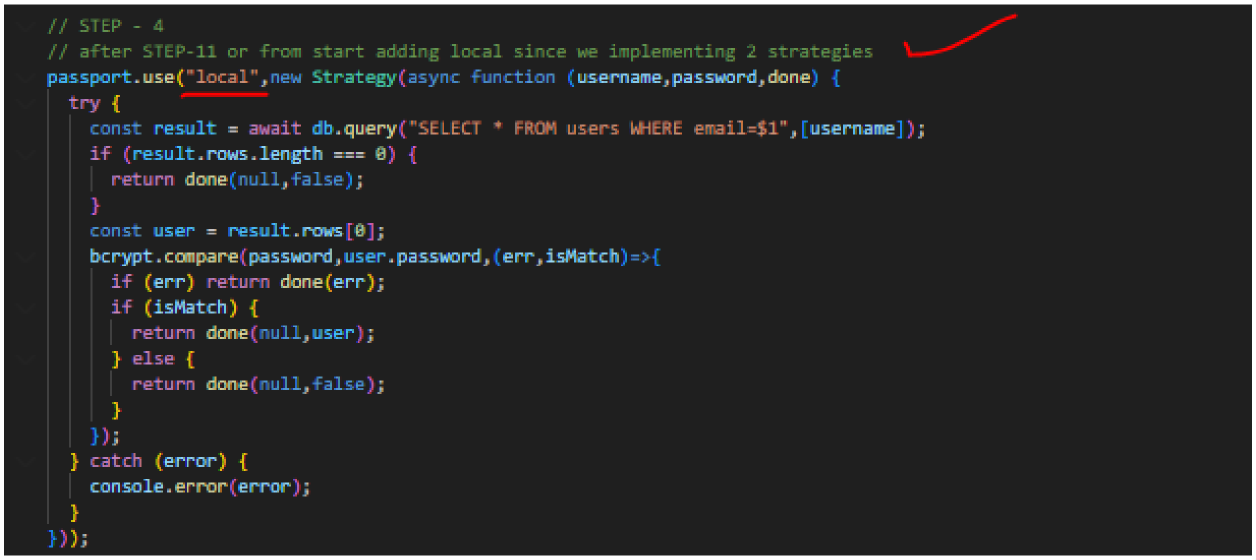


```javascript
// STEP - 10
passport.use("google",new GoogleStrategy({
  clientID: process.env.GOOGLE_CLIENT_ID,
  clientSecret: process.env.GOOGLE_CLIENT_SECRET,
  callbackURL: "http://localhost:3000/auth/google/secrets",
  userProfileURL: "https://www.googleapis.com/oauth2/v3/userinfo"
},
// callback if above google sign in succeeded
async (accessToken,refreshToken,profile,done) => {
  console.log(profile); //prints all the info when user clicked on sign in with google
  try {
    // checks if that email already exists in our database
    const result = await db.query("SELECT * FROM users WHERE email=$1",[profile.email]);

    // if there is no account with that email
    if (result.rows.length === 0) {
      // creating new user
      const newUser = await db.query("INSERT INTO users(email,password) VALUES($1,$2)"
        ,[profile.email,"google"]);  //since sign in with Google dont give password we can either save user id or add custom password like google so we
        know that user uses signin with google
      return done(null,newUser.rows[0]); //success and passed the first matched row
    } else {
      // already existing user
      done(null,newUser.rows[0]);
    }
  } catch (error) {
    console.error(error);

  }
}
}));
```

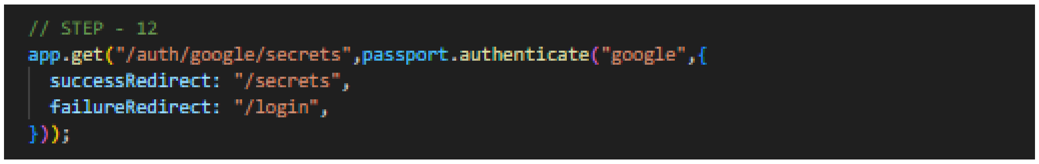


```javascript
// STEP - 11
app.get("/auth/google",passport.authenticate("google",{
  scope: ["profile","email"],
}));
```

targeting profile email



```
// STEP - 4
// after STEP-11 or from start adding local since we implementing 2 strategies
passport.use("local",new Strategy(async function (username,password,done) {
  try {
    const result = await db.query("SELECT * FROM users WHERE email=$1",[username]);
    if (result.rows.length === 0) {
      return done(null,false);
    }
    const user = result.rows[0];
    bcrypt.compare(password,user.password,(err,isMatch)=>{
      if (err) return done(err);
      if (isMatch) {
        return done(null,user);
      } else {
        return done(null,false);
      }
    });
  } catch (error) {
    console.error(error);
  }
}));
```



```
// STEP - 12
app.get("/auth/google/secrets",passport.authenticate("google",{
  successRedirect: "/secrets",
  failureRedirect: "/login",
}));
```