

What is UUID?

- Universally
- Unique
- Identifier

(Also known as GUID, for "Globally")

UUID variations

- Some have random-ish
 - Others NOT!
- Often factor in date/time
- Some pull in other info bits
- Generated by algorithm, not a central producer
- Attempt to make collision practical impossibility

session ids want unpredictable in addition to unique

- why?

UUID in node

Here's one library:

```
npm install uuid
```

```
const { v4: uuidv4 } = require('uuid');  
// same as `const uuidv4 = require('uuid').v4;`  
  
const uid = uuidv4();
```

UUID as session id in express

```
app.use(express.urlencoded({ extended: false }));

const sessions = {};

app.post('/session', (req,res) => {
  const username = req.body.username.trim();
  if(username === 'dog' || !username){
    // Give better errors than this!
    res.status(403).send('invalid username');
    return;
  }
  const sid = uuidv4();
  sessions[sid] = { username }; // Do you know why?
  res.cookie('sid', sid);
  res.redirect('/');
});
```

Checking the SID in express

```
app.get('/users', (req,res) => {  
  const sid = req.cookies.sid;  
  if(!sid || !isValid(sid)) {  
    res.clearCookie('sid');  
    res.sendStatus(401);  
    return;  
  }  
  
  const { username } = sessions[sid];  
  // Do whatever here  
});
```

Removing SID to end session

Imagine we have a `/logout` route

- Is this a GET or a POST?
 - When we get to REST, the question changes
- How do we clear the sid cookie?
 - `res.clearCookie('sid');`
 - OR, set cookie to blank value
 - OR, set cookie to immediately expire
- How do we clear the data from the server?

Lab

- Make a server with a dynamic page `/`
 - checks the `sid` cookie
 - if you have a valid login:
 - Says you are logged in as `${username}`
 - If not a valid sid
 - shows a form asking for username
- Add a dynamic page `/login`
 - Requires a username to be passed (via POST)
 - If there is a username and it is not "dog"
 - creates a uuid and assign it to sid cookie
 - relates the uuid value to username
 - redirects to `/`