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# Short-Notes

## 1. GitHub

GitHub is a platform for version control and collaboration, using **Git** to manage repositories. It allows developers to track changes, collaborate with others, and host projects.

### Common Commands:

git clone <repo>: Clone a repository.

git add .: Stage changes.

git commit -m "message": Commit staged changes.

git push: Push changes to the remote repository.

## 2. Trello and Jira

These are project management tools used to manage and track the progress of a project.

Trello: A simple kanban-style board where tasks are added as cards under lists like "To Do", "In Progress", and "Done".

Jira: A more advanced project management tool that allows tracking of tasks, issues, bugs, and sprints. Used for managing both Agile and Waterfall workflows.

## 3. NVM (Node Version Manager)

NVM is used to manage multiple versions of Node.js on the same system. It allows you to switch between different Node versions easily.

### Example Commands:

nvm install 14: Install Node.js version 14.

nvm use 14: Use Node.js version 14.

nvm list: List all installed versions of Node.js.

## 4. Reducer

In **Redux** (used for state management), a reducer is a pure function that takes the current state and an action and returns a new state.

## Example:

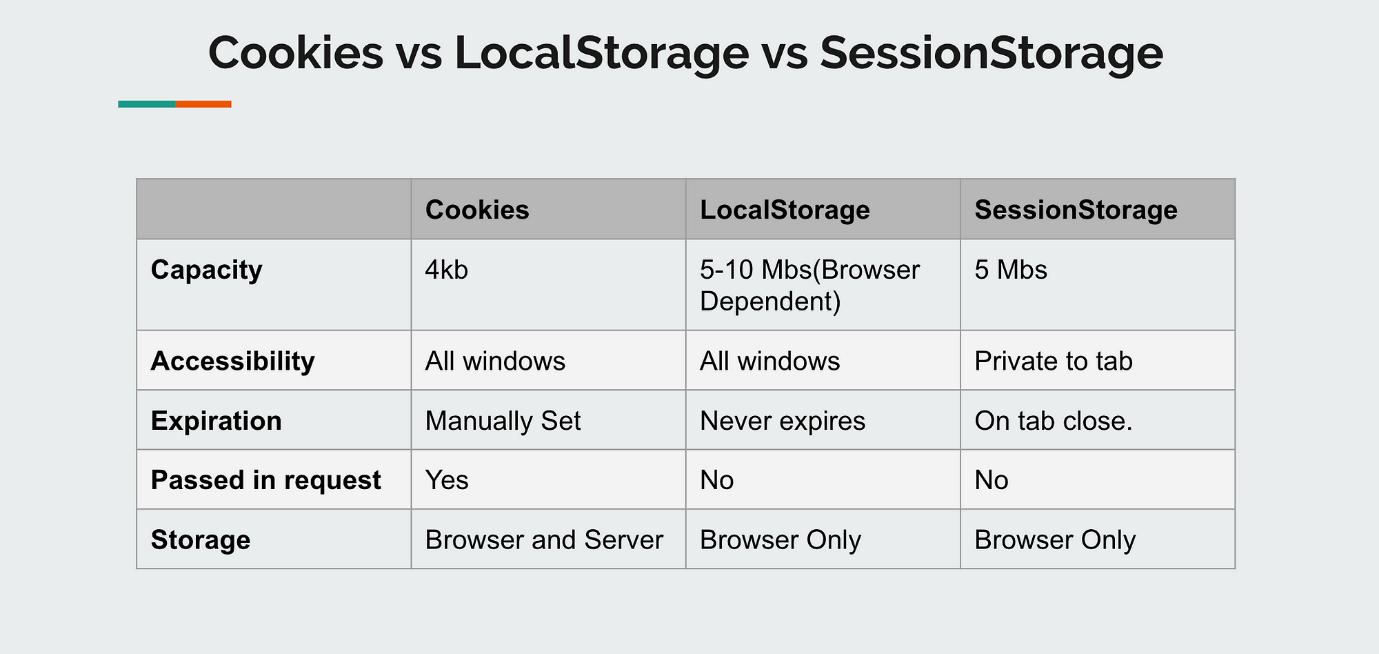
Plain Text

Copy

js Copy code const initialState = { count: 0 }; const counterReducer = (state = initialState, action) => { switch (action.type) { case 'INCREMENT': return { count: state.count + 1 }; case 'DECREMENT': return { count: state.count - 1 }; default: return state; } };

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## 5. localStorage

localStorage allows you to store data persistently in the browser even after a page reload.

## Example:

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js Copy code localStorage.setItem('username', 'John'); const name = localStorage.getItem('username'); console.log(name); // Output: John

​

## 6. sessionStorage

sessionStorage stores data for the duration of the page session (until the tab is closed).

## Example:

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js Copy code sessionStorage.setItem('sessionId', 'abc123'); const sessionId = sessionStorage.getItem('sessionId'); console.log(sessionId); // Output: abc123

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## 7. Cookies

Cookies are small data files stored on the client-side, typically used for tracking and managing user sessions.

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### Setting Cookies in Node.js:

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js Copy code res.cookie('token', 'jwtToken', );

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## 8. CRUD (Create, Read, Update, Delete)

CRUD represents the basic operations for managing data in a database or system.

### Example in Express.js with MongoDB:

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js Copy code // Create app.post('/create', async (req, res) => { const newItem = new Item(req.body); await newItem.save(); res.send('Item created'); }); // Read app.get('/items', async (req, res) => { const items = await Item.find(); res.send(items); }); // Update app.put('/update/:id', async (req, res) => { await Item.findByIdAndUpdate(req.params.id, req.body); res.send('Item updated'); }); // Delete app.delete('/delete/:id', async (req, res) => { await Item.findByIdAndDelete(req.params.id); res.send('Item deleted'); });

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## 9. JWT (JSON Web Token)

JWT is a token-based authentication mechanism used to verify users across servers and client-side applications.

### Example in Node.js:

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js Copy code const jwt = require('jsonwebtoken'); const token = jwt.sign({ userId: 123 }, 'secretkey', { expiresIn: '1h' }); const decoded = jwt.verify(token, 'secretkey');

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## 10. Image Uploading Using Node.js

To handle image uploading, you can use middleware like multer in Node.js.

### Example:

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js Copy code const multer = require('multer'); const upload = multer({ dest: 'uploads/' }); app.post('/upload', upload.single('image'), (req, res) => { res.send('File uploaded'); });

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## 11. Upload CSV File with Data in Node.js

Uploading CSV files can be handled using libraries like csv-parser or fast-csv.

### Example:

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js Copy code const csv = require('csv-parser'); const fs = require('fs'); app.post('/upload-csv', (req, res) => { const results = []; fs.createReadStream('file.csv') .pipe(csv()) .on('data', (data) => results.push(data)) .on('end', () => { res.json(results); }); });

​

## 12. MongoDB

MongoDB is a NoSQL database used to store data in JSON-like documents. It provides high scalability and flexibility.

### Example Queries:

### Insert Data:

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js Copy code db.users.insert({ name: 'John', age: 30 });

​

### Find Data:

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js Copy code db.users.find({ name: 'John' });

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### Update Data:

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js Copy code db.users.update({ name: 'John' }, { $set: { age: 31 } });

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### Delete Data:

Plain Text

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js Copy code db.users.remove({ name: 'John' });