**Router Concept**

Ajke amra express js er router concept ta niye kaj korbo. First e nicher setup niye kaj shuru korlam.

Index.js …

*const* express = *require*("express");

*const* app = *express*();

app.*listen*(3000, () *=>* {

  console.*log*("Listening on port 3000");

});

Amar application e ekhon porjonto kono route nai. Router jinishta ki? Ekta application e je bivinno route thake shei route gulake control korar jonno express amader ke ‘router’ name ekta object alada kore diye dise. Express application e jokhon kono route ba end point define korte chai tokhon amra app.get(‘/’, (req,res)=>{…..}) evabe diye dei.

Index.js …

*const* express = *require*("express");

*const* app = *express*();

app.*get*("/", (*req*, *res*) *=>* {

  res.*send*("Home");

});

app.*get*("/about", (*req*, *res*) *=>* {

  res.*send*("About");

});

app.*listen*(3000, () *=>* {

  console.*log*("Listening on port 3000");});

jodi get method e “/” url e hit kori tahole ‘home’ pabo. Ar “/about” url e hit korle ‘about’ pabo. Ei je amra bivinno url ba route hit korchi ei route gula ekta router object er maddhome controlled hocche. Currently index.js e kono router object (express.Router()) nai. Tarporo amader application e routing kaj kortese. Kivabe kaj korche? 2nd line e express function ke call kore je ‘app’ object ta create korechi shetar moddhe built in vabe ekta router chole ashche. Ei built in router charao amar application e nije ekta router banate chai tahole ki korbo? Suppose, amra ‘adminRouter’ name ekta router create korbo. Sheta amra onno ekta file theke niye ashbo.

adminRouter.js …

*const* express = *require*("express");

*const* adminRouter = express.*Router*();

adminRouter.*get*("/", (*req*, *res*) *=>* {

  res.*send*("Dashboard");

});

adminRouter.*get*("/login", (*req*, *res*) *=>* {

  res.*send*("Login");

});

module.exports = adminRouter;

First express ke require korlam. Then express.Router() kore ekta router object create korlam. Object ta ke adminRouter variable e nilam. Ekhon notun router er “/” url e keu get method e hit korle “Dashboard” pabe. adminRouter ke index.js e import kore app.use(“/admin”, adminRouter) kore bole dilam sheta use korte. Jokhon keu ‘/admin’ route e hit korbe tokhon adminRouter activate hobe. Server on kore /admin kingba /admin/login route e hit korle thik moto o/p pacchi.

Ekhon app.get() e je route gula use korsi shegular jonno ekta alada publicRouter banate chacchi.

Index.js …

*const* express = *require*("express");

*const* adminRouter = *require*("./adminRouter");

*const* publicRouter = *require*("./publicRouter");

*const* app = *express*();

app.*use*("/", publicRouter);

app.*use*("/admin", adminRouter);

app.*listen*(3000, () *=>* {

  console.*log*("Listening on port 3000");

});

publicRouter.js …

*const* express = *require*("express");

*const* publicRouter = express.*Router*();

publicRouter.*get*("/", (*req*, *res*) *=>* {

  res.*send*("Public Home");

});

publicRouter.*get*("/about", (*req*, *res*) *=>* {

  res.*send*("Public About");

});

module.exports = publicRouter;

amar shomosto application ager motoi kaj kortese. So amra /admin er moto /customer ba ei type route er jonno alada dedicated router object create kore routing korte parbo.

Ekhon amra router object er onnanno methods er bepare janbo.

Firstly amra jekono router object er get, post , put etc method access korte pari .get, .post, .put etc er maddhome.

Ekhon amra router.param er bebohar dekhbo. Route ba url er moddhe je parameter gula thake shei parametergular upor base kore jodi kono callback function use korte hoy tahole router.param() ba app.param() use kori amra.

publicRouter.js …

*const* express = *require*("express");

*const* publicRouter = express.*Router*();

publicRouter.*param*("user", (*req*, *res*, *next*, *id*) *=>* {

  req.user = id *===* "1" ? "Admin" : "Anonymous";

*next*();

});

publicRouter.*get*("/:user", (*req*, *res*) *=>* {

  res.*send*(`Hello ${req.user}`);

});

publicRouter.*get*("/about", (*req*, *res*) *=>* {

  res.*send*("Public About");

});

module.exports = publicRouter;

localhost:3000/ er por amra ekta parameter ‘user’ expect kortesi. ‘user’ hishebe expect kortesi ekta number ashbe. Amar purpose keu jodi localhost:3000/1 pathay tahole ami ‘hello Admin’ response dibo. Ei ‘Admin’ ta thakbe req.user er moddhe. User 1 bade onno kisu hole amra onno response dibo. Jehetu ‘user’ parameter er upor base kore ei logic ta khelaite chaitesi shehetu publicRouter.param() method diye ei parameter dhore kaj sharte hobe. Ei method er first parameter e parameter er name i.e. ‘user’ dilam. Er fole publicRouter e jokhoni ‘user’ name kono parameter ashbe tokhoni publicRouter.param() er CB ta call hobe. Eta hote pare localhost:3000/:user or localhost:3000/about/:user etc. ekhon CB er last parameter hishebe ‘id’ rakhsi. Ekhane naamta ‘id’ na rekhe jai rakhi na keno etar moddhe ‘user’ er value ta chole jabe. Ei CB er vitore id er value check kore req.user er value set korsi. Then next() call kore disi.

Tarpor process ta publicRouter.get() er CB er moddhe chole jabe.

publicRouter.js …

*const* express = *require*("express");

*const* publicRouter = express.*Router*();

publicRouter.*param*("user", (*req*, *res*, *next*, *id*) *=>* {

  req.user = id *===* "1" ? "Admin" : "Anonymous";

  console.*log*("I am called once.");

*next*();

});

publicRouter.*get*("/:user", (*req*, *res*, *next*) *=>* {

  console.*log*("This also matches");

*next*();

});

publicRouter.*get*("/:user", (*req*, *res*) *=>* {

  res.*send*(`Hello ${req.user}`);

});

publicRouter.*get*("/about", (*req*, *res*) *=>* {

  res.*send*("Public About");

});

module.exports = publicRouter;

ekhane /:user multiple jaygay match korse. But ekhtre publicRouter.param() er CB kintu multiple times call hobe na. eta bojhar jonno eikhane ei lekhata console e show koralam. “localhost:3000/1” kingba “localhost:3000/2” jai hit kori na keno “I am called once” lekhata console e ekbari ashtese.

RouteObject.param() method er behaviour ta amra chaile change korte pari etar calling mechanism change kore. Etokkhon porjonto param() method e duita parameter pathaisi --- 1. Parameter er naam 2. Ekta function ba middleware. Amra jodi etar moddhe ekta parameter pathatam ebong sheta jodi only function hoto jeta arekta function ke return kore tahole etar behaviour ta change hoye jabe.

publicRouter.js …

*const* express = *require*("express");

*const* publicRouter = express.*Router*();

publicRouter.*param*((*param*, *option*) *=>* {

*return* *function* (*req*, *res*, *next*, *val*) {

    if (val *===* option) {

*next*();

    } else {

      res.*sendStatus*(403);}};

});

publicRouter.*param*("user", "12");

publicRouter.*get*("/:user", (*req*, *res*) *=>* {

  res.*send*(`Hello Admin`);

});

publicRouter.*get*("/about", (*req*, *res*) *=>* {

  res.*send*("Public About");

});

module.exports = publicRouter;

3rd line e publicRouter.param() er method er moddhe ekta function pass korechi. jeta arekta middleware function return kore. ei method er bodyr nichei method ta call kore disi. Ekhane ‘12’ hocche jekono ekta value ja upore ‘option’ name indicate kora hocche. Ekhane ‘user’ parameter ta ashle vitorer ei function ta execute hobe. Jokhon kono client localhost:3000/… likhe url e hit korche tokhon user er value ta ami ekhane pacchi. Option er value pacchi ekhan theke. Jodi option ar val mile jay tahole next step e chole jabe.

Ekhon routerObject.Route() method ta dekhbo. Ami jodi chai ei publicRouter er moddhe kono ekta url e ami ekbare get, post, put etc likhbo.

publicRouter.js …

*const* express = *require*("express");

*const* publicRouter = express.*Router*();

publicRouter

  .*route*("/user")

  .*all*((*req*, *res*, *next*) *=>* {

    console.*log*("I am logging something");

*next*();

  })

  .*get*((*req*, *res*) *=>* {

    res.*send*("Get");

  })

  .*post*((*req*, *res*) *=>* {

    res.*send*("Post");

  })

  .*put*((*req*, *res*) *=>* {

    res.*send*("Put");

  });

module.exports = publicRouter;

ekhon localhost:3000/user url e get, post, put je method ei hit kori na keno first e .all() er CB ba middleware ta call hoy. Then respective method er CB call hoy.

Echara routerObject.use() er bebohar app.use() er motoi. Ami je subapp e use kortesi ekmatro shetatei call hobe. Pura application e hobe na.

Route er path hishebe amra etodin ‘/admin’ ba ‘/home’ etc use korsi. Ekhane chaile amra pattern ba regular expression o use korte pari. Express er docs e eta bistarito ache.