

CSC 4309 Enterprise Cloud & Mobile Application Architecture, Design and Development

Project Milestone 2

Sabor Mohammed El Mehdi

Supervised by: Dr. Iraqi

FALL 2023

Middlewares:

<u>AuthenticateJWT:</u>

verifyJWT token if user is authenticated

```
const jwt = require('jsonwebtoken');

CommentCode
function authenticateJWT(req, res, next) {
    const token = req.headers.authorization.split(" ")[1];

    if (token) {
        jwt.verify(token, 'YOUR_SECRET_KEY', (err, user) => {
            if (err) {
                return res.sendStatus(403);
            }
            req.user = user;
            next();
        });
    } else {
        res.sendStatus(401);
    }
}
module.exports = authenticateJWT;
```

<u>isPArentOfRoom</u>

Verify if the user is the parent of the room he wants to do an action in

```
Comment Code
function isParentOfRoom(req, res, next) {
    const parentId = req.user.parentId;
    const roomId = req.params.roomId || req.body.roomId;

    prisma.room.findFirst({
        where: {
            id: roomId,
            parentId: parentId
        }
     }).then(room => {
        if (!room) {
            return res.status(403).json({ error: 'Access denied. Parent not owner of the room.' });
     }
     next();
});
}
```

EnsureChildProfile

Ensure that the child have a profile and can perform actions:

```
async function ensureChildProfile(req, res, next) {
   try {
     const childId = req.headers['x-child-id'] || req.body.childId || req.query.childId;

   if (!childId) {
      return res.status(400).json({ error: 'Child ID is required' });
   }

   const childProfile = await prisma.child.findUnique({
      where: { id: parseInt(childId) },
      });

   if (!childProfile) {
      return res.status(404).json({ error: 'Child profile not found' });
   }

   req.child = childProfile;
   next();
} catch (error) {
   console.error(error);
   res.status(500).json({ error: error.message });
}
}
```

isChildofRoom:

Verify if the user is the child of the room he wants to do an action in

```
next();
    next();
} catch (err) {
    console.error(err);
    res.status(500).json({ error: 'Internal server error.' });
}
```

belongstoRoom:

Ensure that the user is a member of the specified room. Additionally, consider the 'roomID', 'taskID', and 'rewardID' parameters, and derive the 'roomID' from the provided 'taskID' or 'rewardID' when necessary.

```
async function belongsToRoom(req, res, next) {
 const token = req.headers['authorization']?.split(' ')[1];
 const childIdFromHeader = req.headers['x-child-id'];
 let userId;
 let roomId = parseInt(req.params.roomId);
 if (token) {
     const decodedToken = jwt.verify(token, 'YOUR_SECRET_KEY');
     if (decodedToken.parentId) {
      userId = decodedToken.parentId;
       return res.status(403).json({ error: 'Access denied. Not a parent.' });
   } catch (error) {
     return res.status(401).json({ error: 'Invalid token' });
 } else if (childIdFromHeader) {
   userId = parseInt(childIdFromHeader);
   console.log(userId);
   return res.status(401).json({ error: 'Authentication required' });
 if(req.params.taskId) {
   const taskId = parseInt(req.params.taskId);
   const task = await prisma.task.findUnique({
      where: { id: taskId },
       select: { roomId: true }
   });
if(task) roomId = task.roomId;
   else return res.status(404).json({ error: 'Task not found.' });
if (req.params.rewardId) {
   const rewardId = parseInt(req.params.rewardId);
   const reward = await prisma.reward.findUnique({
     where: { id: rewardId },
```

```
if (!child) {
    return res.status(403).json({ error: 'Access denied. Child not part of the room.' });
}

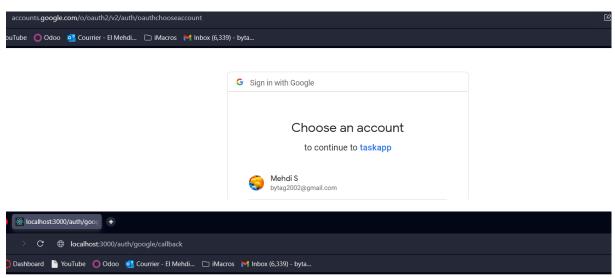
next();
} catch (err) {
    console.error(err);
    res.status(500).json({ error: 'Internal server error.' });
}
```

Testing of functionalities:

Parent functionalities:

Account Management: Account Creation and Login Procedures

Using google library, so no real need for registration, for login it creates a google token which authenticate him then create our JWT token.



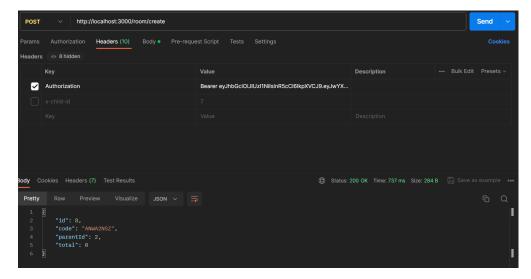
token":"ey]hbGci0iJIUzIINiIsInR5cCl6IkpXVCJ9.eyJwYXJlbnRJZCl6MiwiaWF0IjoxNjk4Nzc3Mjg2LCJleHAiOjE2OTg30DA40DZ9.hNJw94VU3HzMoJ9uHNezWbnG9cNwfhUKdHXZZ7ws0sY"}

```
const GoogleStrategy = require('passport-google-oauth20').Strategy;
const jwt = require('jsonwebtoken');
const { PrismaClient } = require('@prisma/client');
const prisma = new PrismaClient();
const passport = require('passport');
passport.use(new GoogleStrategy({
    clientID: '697839643431-p9s1jmrn11v7ump26mi60mf76jmao59g.apps.googleusercontent.com',
    clientSecret: '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',
    callbackURL: 'http://localhost:3000/auth/google/callback'
}, async (accessToken, refreshToken, profile, done) => {
    let parent = await prisma.parent.findUnique({ where: { email: profile.emails[0].value } });
    if (!parent) {
        parent = await prisma.parent.create({
            data: {
               email: profile.emails[0].value,
                name: profile.displayName,
    const token = jwt.sign({ parentId: parent.id }, 'YOUR_SECRET_KEY', { expiresIn: '1h' });
    return done(null, { parent, token });
```

```
const express = require('express');
const passport = require('passport');
const router = express.Router();
router.get('/google',
    passport.authenticate('google', { scope: ['profile', 'email'] ,
    session: false}));
// Callback route after successful Google authentication
router.get('/google/callback',
    passport.authenticate('google', { failureRedirect: '/' ,
    session: false}),
    Comment Code
    (req, res) => {
        // Successful authentication, send JWT token.
        res.json({ token: req.user.token });
    });
module.exports = router;
```

Room Management: Creation, Invitation, and Code Generation for Child/Parent Access

Here the parent can create a room which automatically create a code and this code is used for joining the room if its inputted you can join the room as a child.

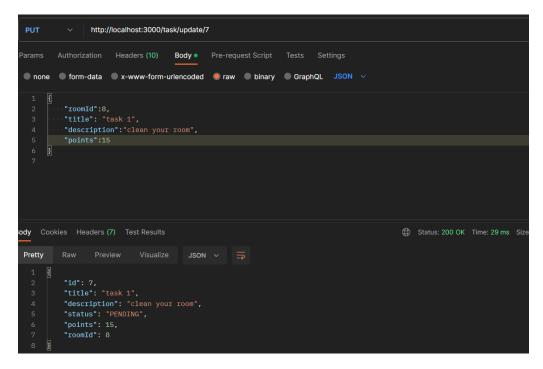


Task Management: CRUD Operations and Daily Reset Mechanism

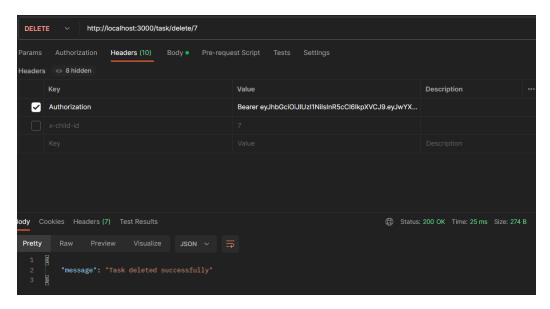
Fundamental CRUD operations are in place, with an automatic reset feature that reverts the status of a task to 'pending' at midnight.

Create a task:

Update a task:



Delete task:



Reward Management: CRUD Operations for Child Incentives

Create a reward/prize:

```
Post v http://localhost:3000/reward/create

Params Authorization Headers (10) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON v

**TroomId*:8,
***" "name*: "chocolate*,
***" "points*:10

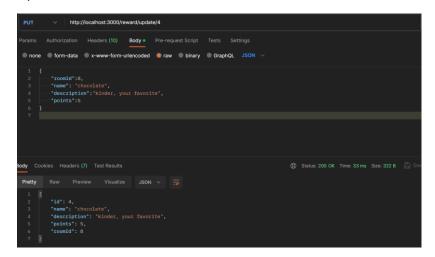
Ody Cookies Headers (7) Test Results

**Pretty Raw Preview Visualize JSON v

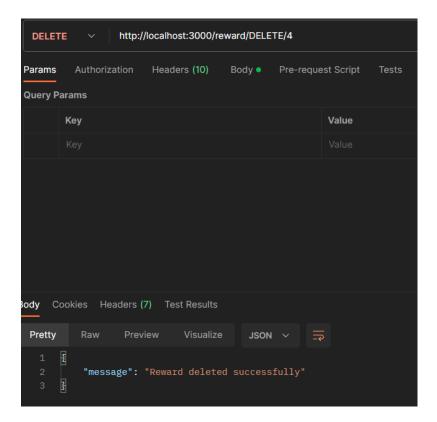
**Iname*: "chocolate*,
**" "id*: 4,
**" "name*: "chocolate*,
**" "id*: 4,
**" "name*: "chocolate*,
**" "description*: "kinder, your favorite*,
**" "points*: 10,
**" "roomId*: 8

**" "roomId*: 8
```

Update reward:

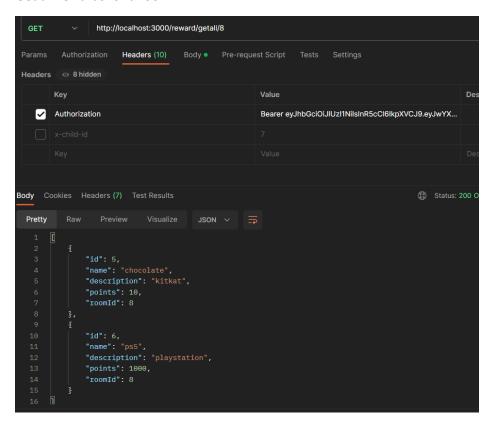


Delete reward:

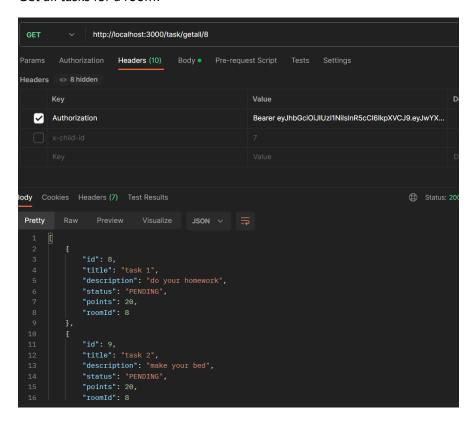


Monitoring Activities: Overseeing Child Tasks and Rewards

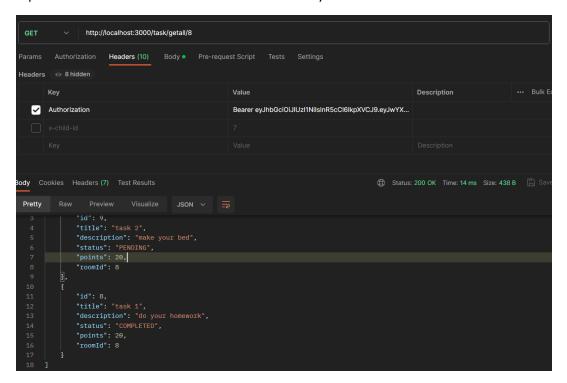
Get all rewards for a room

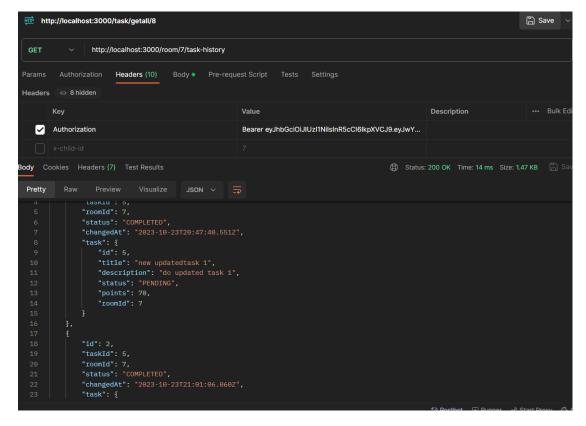


Get all tasks for a room:

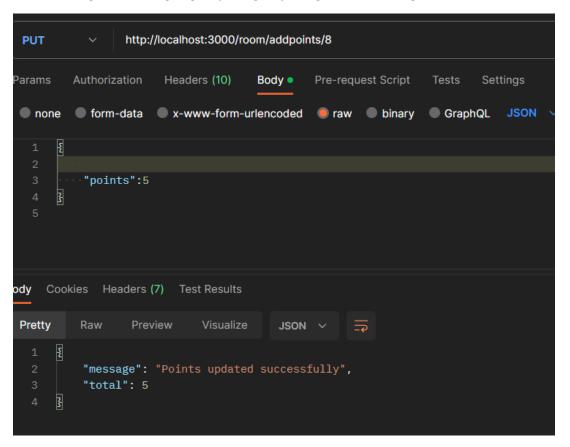


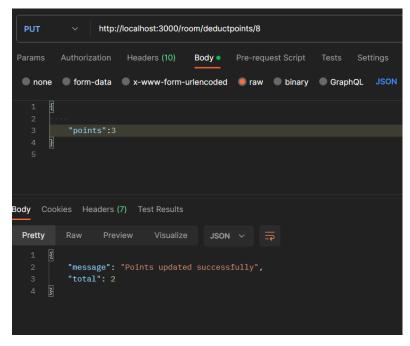
A parent shall be able to view the status and history of their child's tasks.

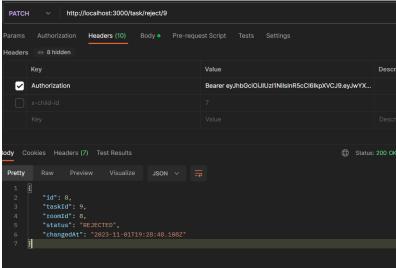


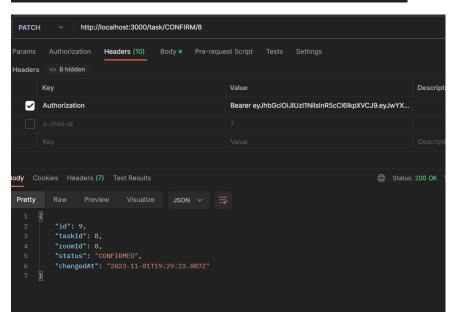


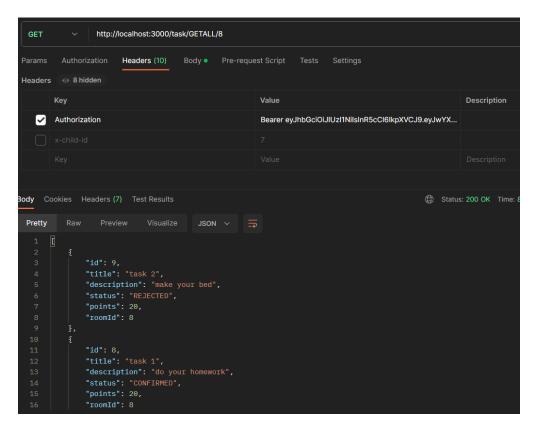
Points Management: Assigning, Adjusting, Rejecting and Confirming Child Points



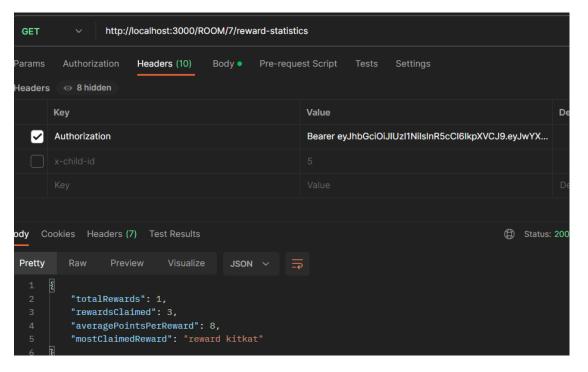


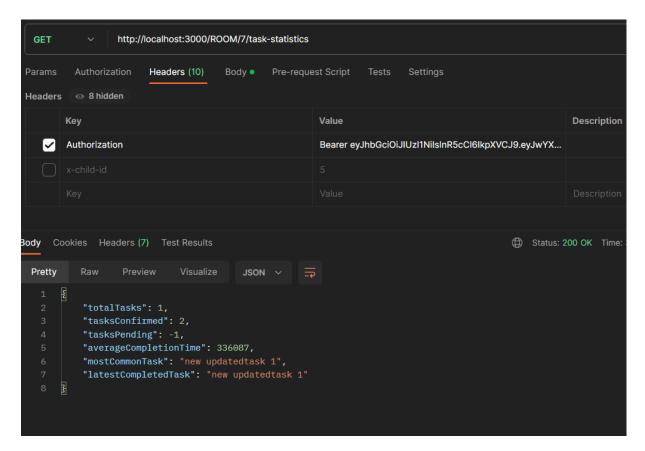




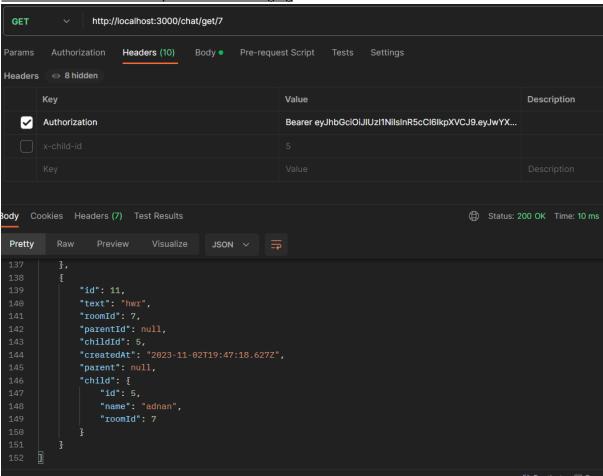


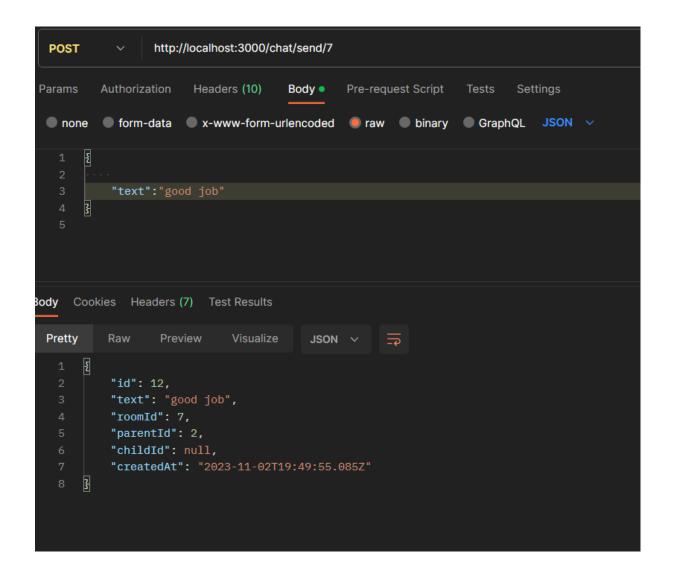
Statistics: A parent shall be able to access detailed statistics for each child.





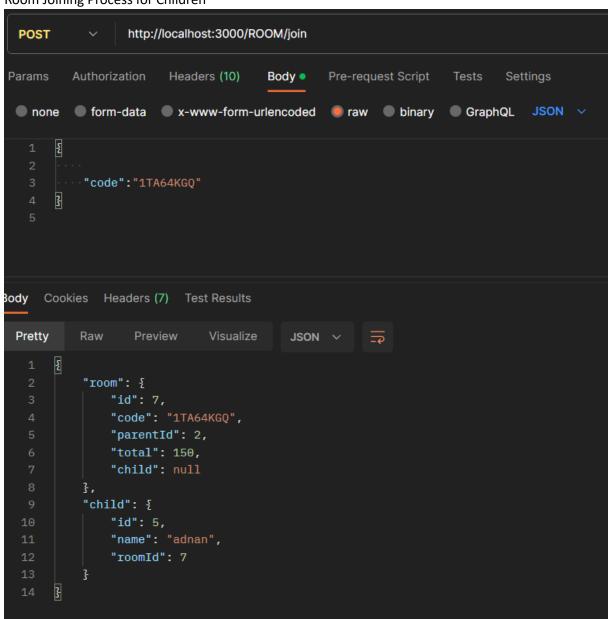
Communications and Safety Features: Messaging



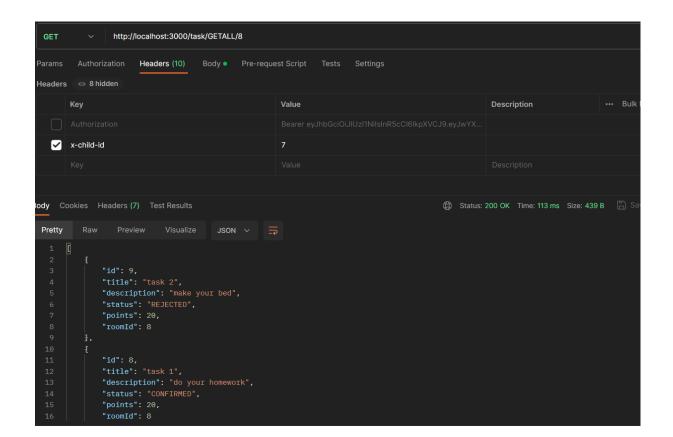


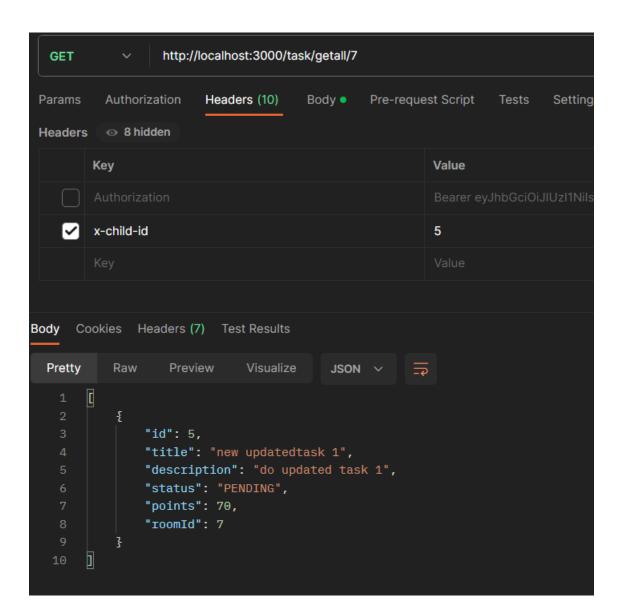
Child functionalities

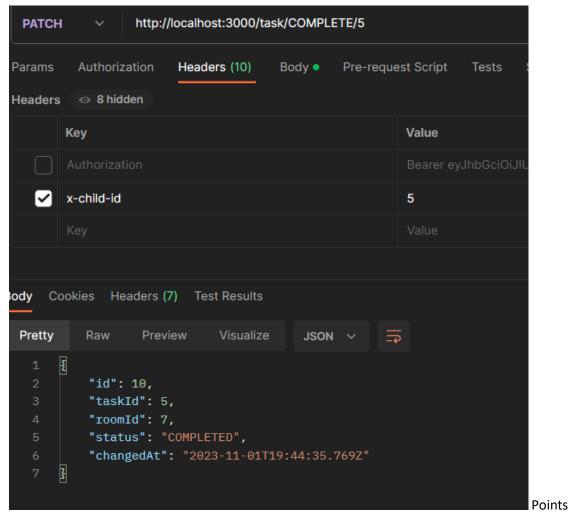
Room Joining Process for Children



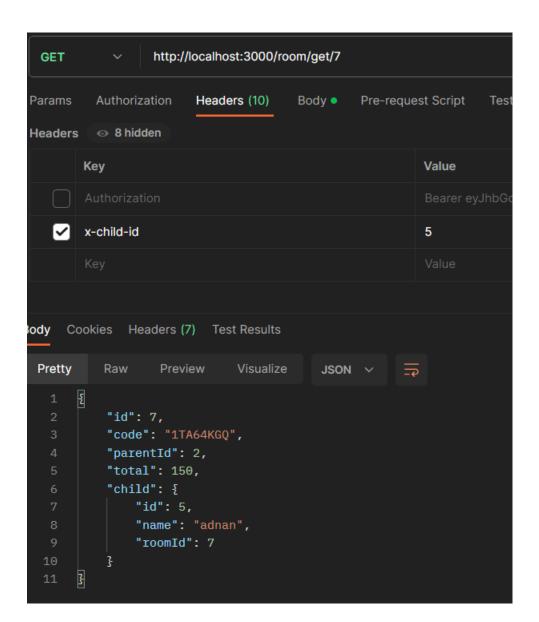
Task Interaction: Viewing and Confirming Completion



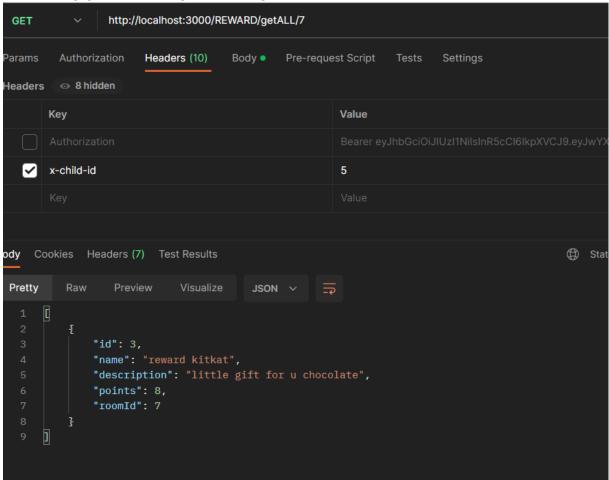


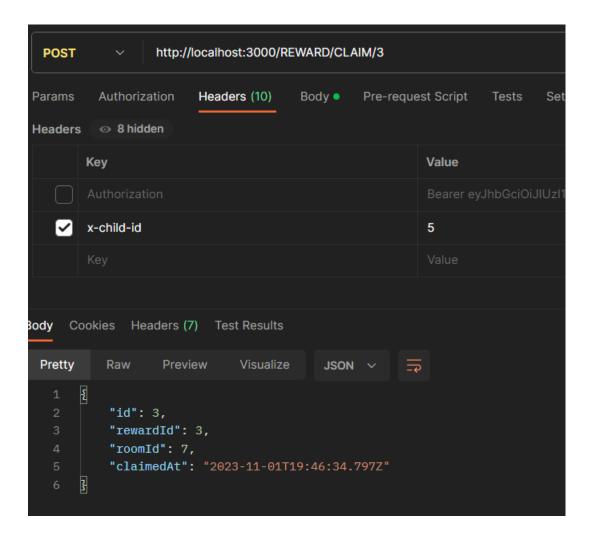


System: Tracking points

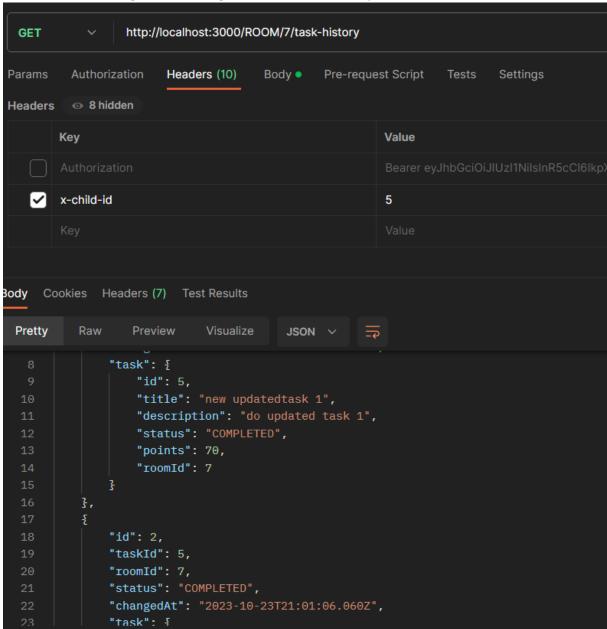


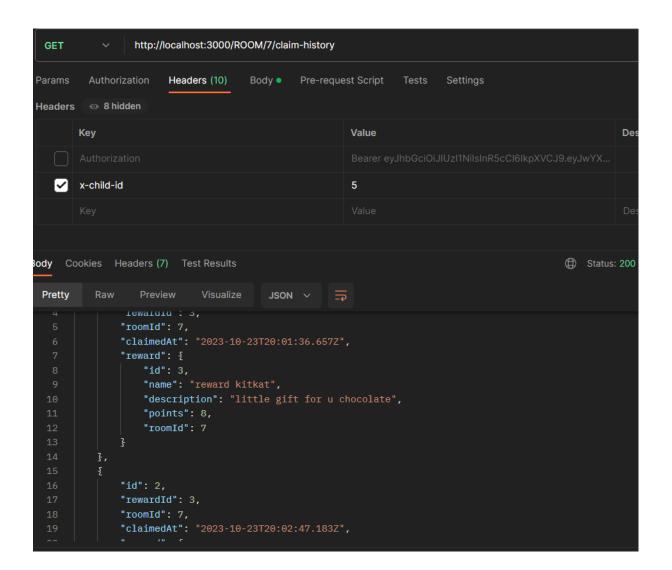
Rewards Engagement: Viewing and Claiming Prizes

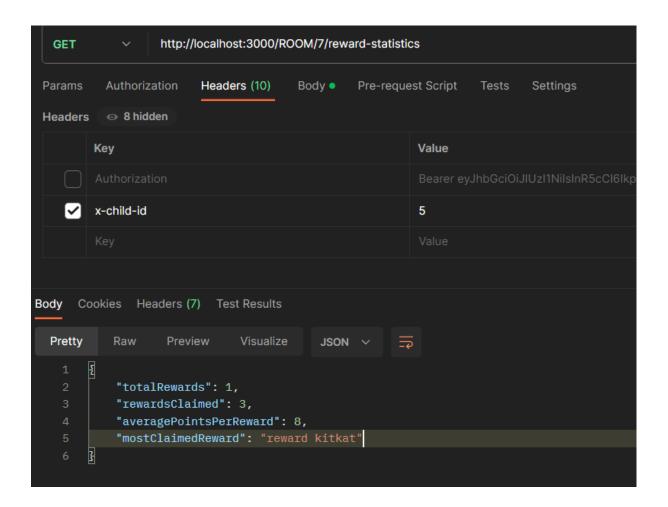


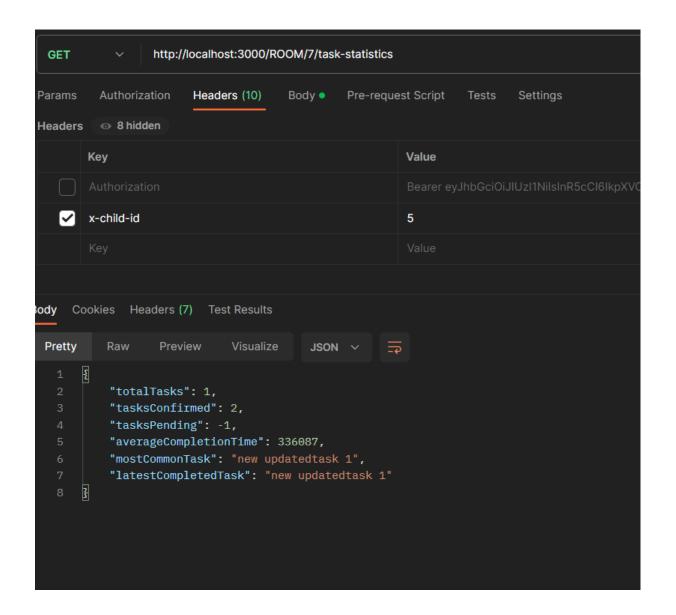


Performance and Progress: Accessing Task and Reward History and Statistics









Parent-Child Communications: Messaging Functionalities

