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Frontend CI + Deploy (S3 + optional CloudFront)

name: Frontend CI & Deploy to S3

on:

 push:

  branches: ["main"]

jobs:

 build:

  runs-on: ubuntu-latest

  steps:

   - uses: actions/checkout@v4

   - uses: actions/setup-node@v4

    with:

     node-version: 18

   - name: Install & Build React App

    run: |

     cd frontend

     npm ci

     npm run build

```yaml
- name: Deploy to S3
  uses: aws-actions/s3-sync@v2
  with:
    source: ./frontend/build
    destination: s3://${{ secrets.S3_BUCKET }}
    args: --delete
  env:
    AWS_ACCESS_KEY_ID: ${{ secrets.AWS_ACCESS_KEY_ID }}
    AWS_SECRET_ACCESS_KEY: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
    AWS_REGION: us-east-1

- name: Invalidate CloudFront Cache (optional)
  if: ${{ secrets.CLOUDFRONT_DISTRIBUTION_ID != '' }}
  uses: chetan/invalidate-cloudfront-action@v2
  with:
    distribution: ${{ secrets.CLOUDFRONT_DISTRIBUTION_ID }}
    paths: "/*"
    aws-region: us-east-1
  env:
    AWS_ACCESS_KEY_ID: ${{ secrets.AWS_ACCESS_KEY_ID }}
    AWS_SECRET_ACCESS_KEY: ${{ secrets.AWS_SECRET_ACCESS_KEY }}
```

Backend CI + Deploy (EC2)

```yaml
name: Backend CI & Deploy to EC2

on:
  push:
    branches: [ "main" ]

jobs:
  test:
    runs-on: ubuntu-latest
    steps:
      - name: Checkout repo
        uses: actions/checkout@v4

      - name: Setup Node.js
        uses: actions/setup-node@v4
        with:
          node-version: 18

      - name: Install dependencies
        run: |
          cd backend
          npm ci

      - name: Run tests
        run: |
          cd backend
```

```yaml
      npm test

deploy:
  runs-on: ubuntu-latest
  needs: test
  if: success()
  steps:
    - name: Checkout code
      uses: actions/checkout@v4

    - name: Deploy to EC2 via SSH
      uses: appleboy/ssh-action@v1.2.0
      with:
        host: ${{ secrets.EC2_HOST }}
        username: ubuntu
        key: ${{ secrets.EC2_SSH_KEY }}
        script: |
          cd /home/ubuntu/app/backend
          git pull origin main
          npm ci
          pm2 restart all
```

Output in image form :