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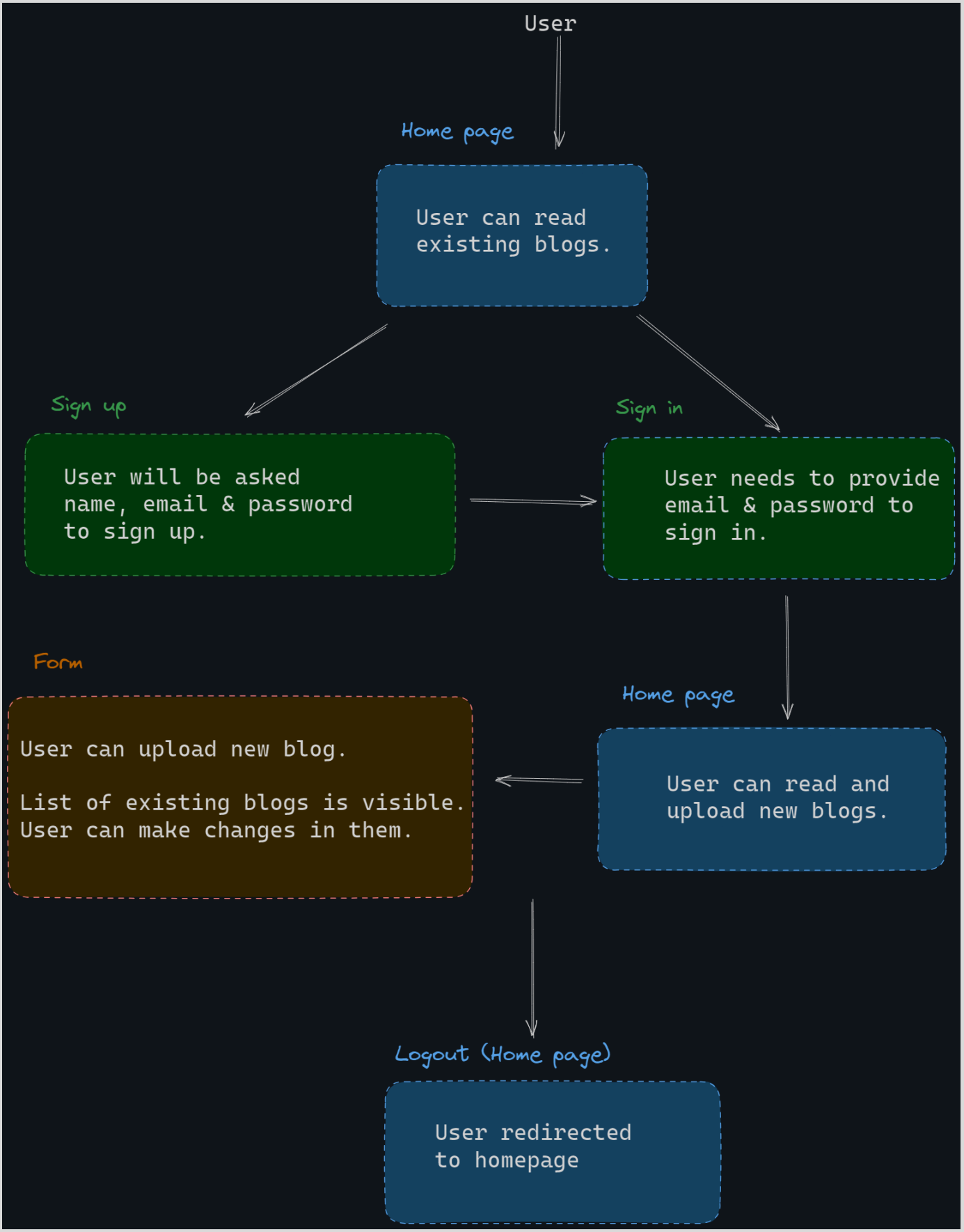
Website Architecture & User interaction flow



Pages Brief

Page	Description
1. Home page (Blog)	- Default page. - User can see blogs' images, titles & descriptions of blogs. - Buttons (if not logged in)- Blogs, Sign up, Sign in. - Buttons (if logged in)- Forms, Blogs, Log out.
2. Sign up	- User will be asked name, email & password to sign up. - Successful sign up redirects user to Sign in page..
3. Sign in	- User needs to provide a valid email & password to login. - Successful login redirects user to home page.
4. Forms	- Available for logged users only. - User can add new blog or make changes in existing blogs.

Instructions to run app in local

- Prerequisite - Node.js in host machine.
- VS code or supporting editor.

- Open frontend directory.
- Run npm install.
- Run npm start

- App should open in a browser.
- Or access localhost:3000 in a browser.

Create Dockerfile

```
# Installs node
FROM node:latest

# Setting /react-app as working directory.
WORKDIR /react-app

# Copy package.json & package-lock.json to working dir.
COPY package*.json ./

# Installs dependencies - node_modules.
RUN npm install

# Copy all files to workdir.
COPY . .

# Exposing Port 3000 for app.
EXPOSE 3000

# Starts app.
CMD npm start
```

.gitignore

```
node_modules

# Dockerfile

# .dockerignore
```

Deploy app on K8s Cluster

1. Frontend - YAMLs

#Frontend Deployment

```
apiVersion: apps/v1
kind: Deployment

metadata:
  name: frontend-dep

spec:
  selector:
    matchLabels:
      app: react
      tier: frontend

  replicas: 1

  template:
    metadata:
      labels:
        app: react
        tier: frontend

    spec:
      containers:
        - name: con
          image: dev7495/react-frontend-ni:v1
          ports:
          - containerPort: 3000
---
```

#Frontend Service

```
apiVersion: v1
kind: Service

metadata:
  name: frontend-svc

spec:
  selector:
    app: react
    tier: frontend

  ports:
  - protocol: "TCP"
    port: 3000
    targetPort: 3000
    nodePort:

  type: NodePort
...
```

2. Backend - YAMLs

```
# Backend Deployment

apiVersion: apps/v1
kind: Deployment

metadata:
  name: backend-dep

spec:
  selector:
    matchLabels:
      app: react
      tier: backend

  replicas: 1

  template:
    metadata:
      labels:
        app: react
        tier: backend

    spec:
      containers:
        - name: back-con
          image: dev7495/react-backend2:v1
          ports:
          - containerPort: 3000
---
```

```
# Backend Service

apiVersion: v1
kind: Service

metadata:
  name: backend-svc

spec:
  selector:
    app: react
    tier: backend

  ports:
  - protocol: TCP
    port: 3000
    targetPort: 3000
...
```

3.1 MongoDB Deployment YAML

```
apiVersion: apps/v1
kind: Deployment

metadata:
  name: mongo-deployment
  labels:
    app: mongo

spec:
  replicas: 1
  selector:
    matchLabels:
      app: mongo
#     tier: backend

  template:
    metadata:
      labels:
        app: mongo
#       tier: backend

    spec:
      containers:
      - name: mongo
        image: mongo
        ports:
        - containerPort: 27017

        env:
        - name: MONGO_INITDB_ROOT_USERNAME
          valueFrom:
            secretKeyRef:
              name: mongo-secret
              key: mongo-user

        - name: MONGO_INITDB_ROOT_PASSWORD
          valueFrom:
            secretKeyRef:
              name: mongo-secret
              key: mongo-password
---
```

3.1 MongoDB Service

```
# MongoDB Secret

apiVersion: v1
kind: Service

metadata:
  name: mongo-service

spec:
  selector:
    app: mongo

  ports:
    - protocol: TCP
      port: 27017
      targetPort: 27017
      nodePort:                 # Added nodePort to verify
  type: NodePort                # if mongodb is working.
```

3.2 MongoDB Secret YAML

```
# MongoDB Secret

apiVersion: v1
kind: Secret

metadata:
  name: mongo-secret

type: Opaque

data:
  mongo-user:  bW9uZ291c2Vy
  mongo-password: bW9uZ29wYXNzd29yZA==
---
```

3.2 MongoDB Configmap YAML

```
apiVersion: v1
kind: ConfigMap

metadata:
  name: mongo-config

data:
  mongo-url: mongo-service
```