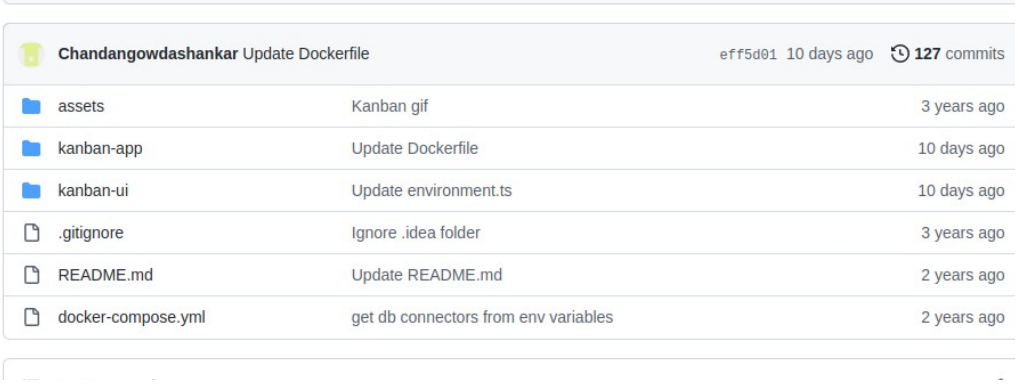
Dockerize an Fullstack appliaction (frontend,backend and database)

- To achive this task we need both frontend and backend example data
- code repo link -- https://github.com/Chandangowdashankar/kanban-board.git



- we need to 3 container frontend data is in kanban-ui and backend data have kanban -app
- we need to write docker file for each
- kanban-ui is front by node, The dockerfile is ..

```
### STAGE 1: Build ###
FROM node:12.7-alpine AS build
WORKDIR /usr/src/app
COPY package.json ./
RUN npm install
COPY . .
RUN npm run build

### STAGE 2: Run ###
FROM nginx:1.17.1-alpine
COPY default.conf /etc/nginx/conf.d/default.conf
COPY --from=build /usr/src/app/dist/kanban-ui /usr/share/nginx/html
EXPOSE 80
```

- multistage Dockerfile means we can use more From image for final image
  WORKDIR /usr/src/app – select work direcotry as app
  Copy package.json file to within node image
  Run npm install it will install npm
  Run npm run build means it will build dist file to serve

And again we choose nginx image to serve that dist file
to serve suceeful we need nginx.config we replace our default code into taht page
by default nginx serve the nginx html page we need to replace that into our dist file

- like this way we need to write Dockerfile for backend also

```
FROM maven:3.6.1-jdk-8-slim AS build
RUN mkdir -p /workspace
WORKDIR /workspace
COPY pom.xml /workspace
COPY src /workspace/src
RUN mvn -f pom.xml clean package

FROM openjdk:8-alpine
COPY --from=build /workspace/target/*.jar app.jar
EXPOSE 8888
ENTRYPOINT ["java","-jar","app.jar"]
```

- And finally we need to write docker-compose file to exicute docker files nd and database container for in compose only

docker-compose file to exicute the steps

```
version: '3'
services:

  kanban-postgres:
    image: "postgres:9.6-alpine"
    container_name: kanban-postgres
    volumes:
      - kanban-data:/var/lib/postgresql/data
    ports:
      - 5432:5432
    environment:
      - POSTGRES_DB=kanban
      - POSTGRES_USER=kanban
      - POSTGRES_PASSWORD=kanban

  kanban-app:
    build: ./kanban-app
    container_name: kanban-app
    environment:
      - DB_SERVER=kanban-postgres
      - POSTGRES_DB=kanban
      - POSTGRES_USER=kanban
```

```
    - POSTGRES_PASSWORD=kanban
   ports:
    - 8080:8080
   links:
    - kanban-postgres

  kanban-ui:
   build: ./kanban-ui
   container_name: kanban-ui
   ports:
    - 4200:80
   links:
    - kanban-app


volumes:
  kanban-data:
```

- In this dockerfile we need 3 service for front end and backend funally database
- and first service is like kanaban-postgrass for database
- set envirolment t that postgres sql containers
- along with kanban-app is for docker backend we mentined in that like build docker image using docker file
- and also link with previous container
- we mentioned tha port to all the container
- and kanban-ui for frontend in this case also set like build imae from Dockerfile form taht folder means
- and finally attache volume

THANK YOU