1. I have created a React application using create-react-app.
   a. For an actual production application I would rather use NextJS. It's become popular now and opinionated frameworks like NextJS are generally great for most applications.
2. The application generally shows my thought process. I created an Image component, a thumbnail component and a Carousel component that hosts each of the above components. This is essentially using the power of React by creating views using nested components.
3. I could not get to creating the API so I mimicked the API call and simply returned mock data.
   a. Depending on the needs and the client, I would utilize any appropriate technology to develop the API's.
   b. I would certainly look at hosting API's on Lambda's but like I explained previously I have battle scars utilizing Serverless for HTTP endpoints. I would need to do some more analysis before I would utilize Lambdas for API's. I would certainly used them for asynchronous/backend jobs. I have used them as consumers of Kafka messages(or other message brokers) to process asyc push notifications to mobile platforms and sending out emails etc.
   c. Irrespective of the technology or language used the generals architecture would be same
      i. Easily testable and loosely coupled api's.
      ii. Utilize GraphQL