Module Federation : Journey of Micro FrontEnds with Angular

In recent years, a lot of Information Technologies has been modernized using micro services. Complex monolithic applications have been divided into multiple micro services based on functionality. Along with Service oriented architecture, Single Page Apps(SPA) also have been growing drastically. Modern web(SPA) applications are becoming big and more complex and sometimes managed by different teams. Your application might have features developed by different teams and you want to release only certain features into production before delivering the entire application. It becomes a nightmare to manage application releases and deliver UI futures quickly and independently.
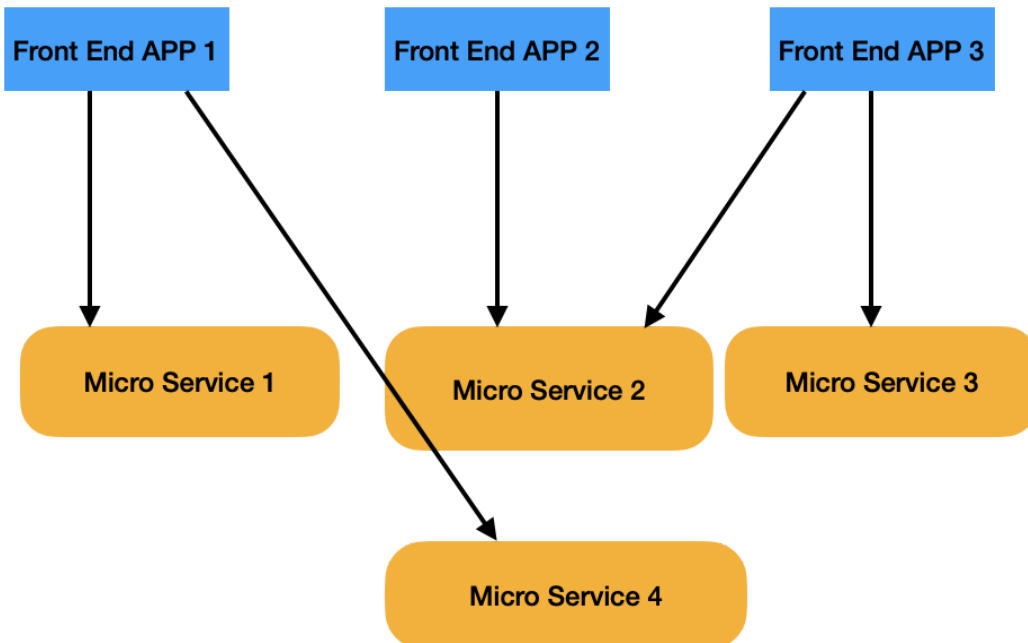
Advantages of Micro Front Ends:

- ☐ UI applications are smaller and independent
- ☐ Applications are easier to understand
- ☐ Applications are more independent to maintain and deploy
- ☐ CI/CD is much simpler
- ☐ Independent stacks and versions

How to segregate Micro Front Ends:
Front End complexity divided by feature or sub domains or page sections.

Diagram depicts how monolithic applications are divided into multiple micro frontends and microservices.

Code snippet for Shell Application webpack.config.js

```javascript
const { shareAll, withModuleFederationPlugin } =
require('@angular-architects/module-federation/webpack');

module.exports = withModuleFederationPlugin({
  remotes: {
    "mfe1": "mfe1/remoteEntry.js",
  },
   shared: {
    ...shareAll({ singleton: true, strictVersion: true, requiredVersion: 'auto' }),
  },
});
```

Module needs to be defined and exposed in Micro Frontend application (mfe1) for generating remoteEntry.js in webpack.config.js

```javascript
const { shareAll, withModuleFederationPlugin } =
require('@angular-architects/module-federation/webpack');

module.exports = withModuleFederationPlugin({
  name: 'mfe1',
  exposes: {
    './Module': 'src/app/flights/flights.module.ts',
  },
  shared: {
    ...shareAll({ singleton: true, strictVersion: true, requiredVersion: 'auto' }),
  },
});
```