NGES Frontend Framework

Frontend Framework Architectural Specifications

Frontend Framework Two Types of Meta Configuration:

- [Design Meta].
- [Business Meta].

1. Design Meta:

When components were developed their Look and Feel or UI & UX meta information defined into Fronted Engine. Developed components must be isolated so that easily business meta can be consumable.

> Query Notes:

- ☑ Components UI & UX meta will be given as resource.

2. Business Meta:

For populating components Look and Feel, Interact with Business meta information. Business meta provided by services.

> Query Notes:

- ☑ Business meta processed by template through consuming service API endpoints then UI will be populated.
- ☑ Needs resources and objects mapping configuration into service configuration file, so that based on user selection that resources can be render or populated.

[Fronted Framework (Select resources, base on client meta)]

- Resources (Process Service Meta & logical implementation which developed by developer)

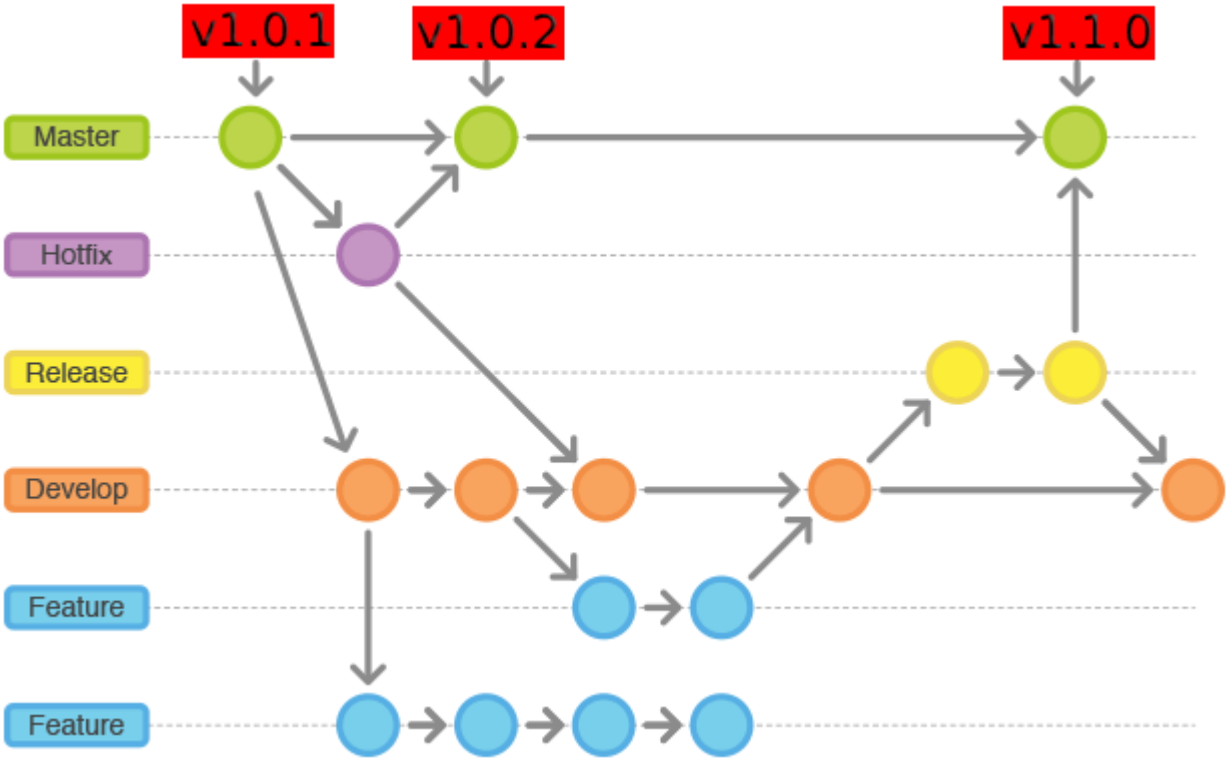
- Reusable Resources (Developed as isolated resource library by nges frontend team)

Frontend Framework Manageability and Versioning

Frontend Framework manageability & Versioning policy for multiple product team.

- [ ] `Process: 1` - Initial work start from `develop branch` then multiple feature developed in `feature branches` features will be merge into `develop branch` for current or future release.
- [ ] `Process: 2` - if requirement and functionality implemented then ready for release, now `develop branch` merged into `release branch`
- [ ] `Process: 3` - if everything going well, then merge into `master branch` and ready to release version tag like (v1.0.1 to v1.1.0. ...more [Check Versionign Policy]). Otherwise create `hotfixes branch` and update major production issues and release version tag like (v1.0.1 to v1.0.2 ...more).
- [ ] `Process: 4` - multiple team start with `latest` or `stable` version. (eg. Here, `last release will be latest` and `v1.1.0 is stable`)

Development, versioning and management flow for `NGES Team`



Versioning policy for multiple product team.

- [ ] Always Front Framework on one Baseline Version (`latest`, `stable`).
- [ ] Development Team will `start` with `stable version`.
- [ ] NGES team will `continuously improve` the `stable` changing the `version` number in 2nd and 3rd digit. `v1.0.1, v1.0.2,...`
- [ ] ** The `development team` will `pull this manually` but the `compatibility and TODO guideline` should always be provided by NGES team.

`** Note:` If product team want to `align with framework update feature` and `update working project automatically` Then need to `create new branch` at that framework specific version. Then start development on that branch, rest of the process will be same. Poduct team request for new feature update then NGES Frontend Team make it automatically with helps of git merge.

Framework Project Layout

> Project layout is important to organize service and other resources

```
app
 ├── adapters
 |   ├── nges-core
 |   ├── nges-elements
 |   ├── nges-engines
 |   |   ├── auth-engine
 |   |   ├── olm
 |   |   ├── property-externder
 |   |   ├── tree-engine
 |   |   └── more..
 ├── components
 |   ├── nges-base
 |   ├── nges-core
 |   ├── nges-elements
 |   ├── nges-engines
 |   |   ├── auth-engine
 |   |   ├── olm
 |   |   ├── property-externder
 |   |   ├── tree-engine
 |   |   └── more..
 |   └── nges-services
 |   |   ├── cbs
 |   |   ├── rms
 |   |   └── ...more
 |
 ├── helpers
 |   ├── nges-core
 |   ├── nges-elements
 |   ├── nges-engines
 |   |   ├── auth-engine
 |   |   ├── olm
 |   |   ├── property-externder
 |   |   ├── tree-engine
 |   |   └── more..
 |   ├── nges-services
 |   |   ├── cbs
 |   |   ├── rms
 |   |   └── ...more
 |   └── more..
 |
 ├── services
 |   ├── nges-core
 |   ├── nges-elements
 |   ├── nges-engines
 |   |   ├── auth-engine
 |   |   ├── olm
 |   |   ├── property-extender
 |   |   ├── tree-engine
 |   |   └── more..
 |   ├── nges-services
 |   |   ├── cbs
 |   |   ├── rms
 |   |   └── ...more
```

```
    |
    ├── mixins
    |   ├── nges-core
    |   ├── nges-elements
    |   ├── nges-engines
    |   |   ├── auth-engine
    |   |   ├── olm
    |   |   ├── property-extender
    |   |   ├── tree-engine
    |   |   └── more..
    |   ├── nges-services
    |   |   ├── cbs
    |   |   ├── rms
    |   |   └── ...more
    |
    ├── models
    |   ├── nges-core
    |   ├── nges-elements
    |   ├── nges-engines
    |   |   ├── auth-engine
    |   |   ├── olm
    |   |   ├── property-extender
    |   |   ├── tree-engine
    |   |   └── more..
    |   ├── nges-services
    |   |   ├── cbs
    |   |   ├── rms
    |   |   └── ...more
    |
    ├── templates
    |   ├──components
    |   ├── nges-core
    |   ├── nges-elements
    |   ├── nges-engines
    |   |   ├── auth-engine
    |   |   ├── olm
    |   |   ├── property-extender
    |   |   ├── tree-engine
    |   |   └── more..
    |   ├── nges-services
    |   |   ├── cbs
    |   |   ├── rms
    |   |   └── ...more
```

> Description: `components`,`templates`,`services`,`helpers`,`mixins`,`adapter`,`models`,`style` directory contains `nges-base`, `nges-core`, `nges-elements` and `nges-services`.

- `nges-base` folder contains framework resources.
- `nges-core` folder contains `atomic components` so that those can be maximum reusable for future resource libraries.
- `nges-elements` folder contains `complex ui`, using groups of `nges-core` components as `resource libraries`.

- `nges-services` folder contains services, services layouts and it's logical implementations as resource.
- `nges-engines` folder contains engines, workflow implementations as resource libraries.

```
// sample structure
 app
  ├── components
  |   ├── nges-core
  |   ├── nges-elements
  |   ├── nges-engines
  |   |   ├── olm
  |   |   ├── ppe
  |   |   ├── rue
  |   |   ├── tee
  |   |   └── more..
  |   ├── nges-services
  |   |   ├── cbs
  |   |   ├── rms
  |   |   └── ...more
```

Framework Ember Data Support

Frontend Framework Adapters & Models Setup

- Adapter use for XHR (REST API Requests)
- We can configure backend host, URL format and headers used to talk to a REST API in an adapter
- If we use EmberData then, we need to configure adapters.

Frontend Framework Support two types of model creations

- Static model and
- Dynamic model

Static Model Creation

To create static models config adapters and models manually

```
 app
  ├── adapters
  |   ├── nges-core
  |   ├── nges-elements
  |   ├── nges-engines
  |   |   ├── olm
  |   |   ├── ppe
  |   |   ├── rue
  |   |   ├── tee
  |   |   └── more..
  ├── models
  |   ├── nges-core
```

```
|   ├── nges-elements
|   ├── nges-engines
|   |   ├── auth-engine
|   |   ├── olm
|   |   ├── property-extender
|   |   ├── tree-engine
|   |   └── more..
```

Example implementation:- for static model creation:

> Define model in `models/nges-engines/person.js`

```
import config from 'frontend-engine/config/environment';
import DS from 'ember-data';


export default DS.Model.extend({
  name: DS.attr('string'),
  surname: DS.attr('string')
});
```

> Define adapter `adapters/nges-engines/person.js`

```
import config from 'frontend-engine/config/environment';

export default DS.JSONAPIAdapter.extend({
  host: config.NGES_SERVICE_HOSTS.MOCK_SERVICE_HOST,

  ajaxOptions() {
    let hash = this._super(...arguments);
    let { beforeSend } = hash;

    hash.beforeSend = xhr => {
      xhr.setRequestHeader('content-type', 'application/json');
      xhr.setRequestHeader('authorization', 'Bearer ' + 'accessToken-
sadhan');
    };
    return hash;
  },

});
```

Dynamic Model Creation

```
export default Component.extend({

  // import services on the top
  appWelcome: service('nges-core/app-welcome'),
  store: service(),

  init() {
    this._super(...arguments);
    let context = this;

     let url = config.NGES_SERVICE_HOSTS.MOCK_SERVICE_HOST +
"/getTableHeader";
        return this.appRestTemplate.httpRestClient(url,  "GET", null,
null).then(function (results) {

        let modelName = 'nges-services/pom/nges-table';         // model
name base on adapter configuration
        let tableColumns = {};
        let tableHeaders = results;                             // this
changes with endpoint

        // make ember model base on attributes
        for (let tableHeader of tableHeaders) {

          if (tableHeader.type === 'String') {
            tableColumns[tableHeader.name] = DS.attr('string');
          } else if (tableHeader.type === 'double') {
            tableColumns[tableHeader.name] = DS.attr('number');
          }
        }

        context.appWelcome.createDynamicModel(modelName, tableColumns);
        context.store.findAll('nges-services/pom/nges-
table').then(function (blogPosts) {
          console.log('message-blogPosts', blogPosts);
        });

        context.set('tableHeaders', tableHeaders);
      });

  }
})
```

NGES-Engines Resource Meta Configurations

open `app/nges-engines/nges-engines-configuration.js` file,

```
 let enginePath = 'nges-engines';
 export default [

   {
     appCode: 'rms',                        // Must define same service
name
     appPanelCode: 'admin-panel',           // Must define access panel
     appModuleCode: 'common',               // Must define module code, for
type selection
     appMenuTemplateCode: 'olm',            // Must define for menu type
selection
     label: 'OLM',                           // Engine display name
     templatePath: enginePath + '/olm',     // define engine root directory
     templates: [
       {
         label: 'Object State',             // Define engine label for
Display Name
         code: 'object-state',              // Through code, resource will
be identify. [route path map to code]
         name: 'object-state',              // Through name, resource will
be render. [it basically raw resource file name which will render]
         detailPath: '/',                   // Through detailPath,`details
page` nested directory will be configurable
         detailView: []                     // detail view page then you
can configure those with code, name. [**Optional]
       },
       {
         label: 'Object State',
         code: 'diagram-tool',
         name: 'diagram-tool',
         detailPath: '/',
         detailView: [
           {
            label: 'Object State',
            code: 'detail-page-code',
            name: 'detail-page-file-name'
           }
         ]
       },

        // ... config meta, for more pages template if needed
     ]
   }
   //... config meta, more engines if needs
 ]
```

Here, appCode, appPanelCode, appModuleCode, appMenuTemplateCode information will get from service

NGES-Services Resource Meta Configurations

> open `app/nges-services/pom/nges-services-configuration.js`

```
 let servicePath = 'nges-services';
 export default [
   {
    appCode: 'rms',                          // Must define same service
name
    appPanelCode: 'operation',               // Must define access panel
    appModuleCode: 'collection',             // Must define module code,
for type selection
    appMenuTemplateCode: 'remitters',        // Must define for menu type
selection
    label: 'Remitters',                      // Engine display name
    templatePath: servicePath + '/rms',      // define engine root
directory
    templates: [
      {
        code: 'pom',                         // Through code, resource
will be identify. [route path map to code]
        name: 'payorder-management',         // Through name, resource
will be render. [it basically raw resource file name which will render]
        detailPath: '/',                     // Through
detailPath,`details page` nested directory will be configurable
        detailView: [                        // detail view page then you
can configure those with code, name. [**Optional]
          {
            label: 'payorder-details',
            code: 'pom-detail-view',
            name: 'payorder-details',
          },

          // ... more details pages if needs
        ],
      },

      // ... config meta, for more pages template if needed
    ]
  },
   // ... config meta, more services if needs
 ]
```

Here, appCode, appPanelCode, appModuleCode, appMenuTemplateCode information will get from service.

> `Notes:` Engine and Service related required files, adapters, helpers, models, components, mixins, models, styles, templates are need to be package into predefined `NGES Project layouts`.

Rest Http Client For Restful Request

`Custom Rest Http Client For Restful Request [API Client Wrapper]`

create ember service then call, create function, like below

```
export default Service.extend({

  //...more
  examplePersonRequest() {
    let roles = JSON.stringify([1, 2, 3]);         // convert your object
to string

    let beforeSend = function (xhr) {
      xhr.setRequestHeader('content-type', 'application/json');
      xhr.setRequestHeader('authorization', 'Bearer ' + accessToken);
    };

    // if any property not want to pass then simply keep it null
    let headers = {
      'Authorization': 'Basic xxxxxxxxxxxx',
      'Accept': 'application/json',
      'Content-Type': 'application/json'
    };

    let url = this.treeEngineHost + "/menuTrees/findMenuTreeByRoleList";
    return this.appRestTemplate.httpRestClient(url, "POST",
      roles, headers, beforeSend
    ); // it return promise
  }

});
```

Framework Environment Meta Information

> To Framework meta configuration, `config/environment.js`

```
APP: {
  appName: 'Frontend Framework',        // change application name
  appTitle: 'Frontend as Service',      // change application title
  appLogo: 'logo.png'                   // change application logo, [Put
logo in public folder]
}
```

> NGES all UI HOST configuration

```
ENV.NGES_UI_HOSTS = {
  TREE_ENGINE_UI_HOST: 'http://localhost:4300',
```

```
  AUTH_ENGINE_UI_HOST: 'http://localhost:4400',
  PROPERTY_EXTENDER_ENGINE_UI_HOST: 'http://localhost:4200',

  //... more ui hosts
};
```

> NGES all backend services host configuration

```
ENV.FRONTEND_SERVICE_HOSTS = {
  OLM_SERVICE_HOST: 'http://www.example.com',
  TREE_SERVICE_HOST: 'http://www.example.com',
  MOCK_SERVICE_HOST: 'http://192.168.20.2:8089',
  AUTH_SERVICE_HOST: 'http://www.example.com',

  //.. more Backend Service hosts
};
```

> `Optional:` if want to configuration you engine in different environment then define your environment here..

```
if (environment === 'development') {

ENV.FRONTEND_SERVICE_HOSTS['AUTH_SERVICE_HOST'] =
'http://www.example.com';
ENV.FRONTEND_SERVICE_HOSTS['OLM_SERVICE_HOST'] = 'http://www.example.com';

//.. more Backend and UI Hosts
}
```

> `Notes`: Change or include host url or environment meta if needed.

Frontend Framework Reusable Resources

- nges-common-grid
- nges-autocomplete
- nges-multi-select-box
- nges-item-selector-box
- nges-dual-list-box
- nges-link-to

How to use `nges-common-grid`

Create `app/components/nges-services/rms-example/rms-example-file.js` and includes

```
let  serviceActionableRoute = {
      create: {
        routePath: 'create-remitter',
        label: 'New Remitter',
      },
      edit: {
        routePath: 'edit-remitter',
        label: 'View Remitter',
      }
    };

this.set('serviceActionableRoute', serviceActionableRoute)
```

Create `app/templates/components/nges-services/rms-example/rms-example-file.hbs` and includes

```
{{nges-elements/nges-common-grid
  serviceActionableRoute = serviceActionableRoute
}}
```

How to use `nges-autocomplete`

Create `app/components/nges-services/rms-example/rms-example-file.js` and includes

```
let sampleDataList = [
      {"id": 1, "disabled": false, "selected": false, "displayName":
"Dhaka", "value": "dhaka"},
      {"id": 3, "disabled": false, "selected": false, "displayName":
"Nazipur", "value": "nazipur"},
      {"id": 4, "disabled": false, "selected": true, "displayName":
"Naogaon", "value": "nogaon"}
    ];
this.set('sampleDataList', sampleDataList);

//... callback method
actions() {
  autocompleteOnSelectAction(selectedValue){
    console.log('message', selectedValue);
  }
}
```

Create `app/templates/components/nges-services/rms-example/rms-example-file.hbs` and includes

```
{{nges-core/nges-autocomplete
  dataList=sampleDataList
  displayName='Place Holder Name'
  autocompleteOnSelect=(action 'autocompleteOnSelectAction')
}}
```

How to use `nges-multi-select-box`

Create `app/components/nges-services/rms-example/rms-example-file.js` and includes

```
 let componentData = {
      itemId: 'itemIdWillBeUnique',   // it should be unique in same view
page
      initialData: [
        {
          "label": "Group A",
          "data": [
            {"id": 1, "disabled": false, "selected": false, "view":
"Bangladesh", "value": "bangladesh"},
            {"id": 2, "disabled": false, "selected": true, "view":
"Japan", "value": "japan"},
            {"id": 3, "disabled": true, "selected": false, "view": "USA",
"value": "usa"}
          ]
        },
        {
          "label": "Group B",
          "data": [
            {"id": 1, "disabled": false, "selected": false, "view":
"Dhaka", "value": "dhaka"},
            {"id": 3, "disabled": false, "selected": false, "view":
"Nazipur", "value": "nazipur"},
            {"id": 2, "disabled": false, "selected": true, "view":
"Naogaon", "value": "nogaon"}
          ]
        }
      ]
    };
this.set('componentData', componentData);
```

Create `app/templates/components/nges-services/rms-example/rms-example-file.hbs` and includes

```
{{nges-core/nges-multi-select-box componentData=componentData}}
```

How to use `nges-item-selector-box`

Create `app/components/nges-services/rms-example/rms-example-file.js` and includes

```
this.set('selectBoxDataLists', [
    {'name': 'Bangladesh', 'selected': false,},
    {'name': 'Dhaka', 'selected': true,},
  ]);

//... get selected value
actions: {
  getItemSelectorBoxData() {
    console.log('message',
JSON.stringify(this.get('selectBoxDataLists')));
  }
}
```

Create `app/templates/components/nges-services/rms-example/rms-example-file.hbs` and includes

```
{{nges-core/nges-item-selector-box groupLabel='nges-item-selector-box'
selectBoxDataLists=selectBoxDataLists}}
<button {{action 'getItemSelectorBoxData'}}>Get Data</button>
```

How to use `nges-dual-list-box`

Create `app/components/nges-services/rms-example/rms-example-file.js` and includes

```
  let data_available = [
    {attributes: {id: 1, name: "Dhaka"}},
    {attributes: {id: 2, name: "Mirpur"}}
  ];
```

```
  let data_selected = [
    {attributes: {id: 1, name: "Dhanmondi"}}
  ];

  let data = {
    available: data_available,
    selected: data_selected
  };

  this.set('dualBoxData', data);  // selected values automatically updated
```

Create `app/templates/components/nges-services/rms-example/rms-example-file.hbs` and includes

```
{{nges-elements/sadhan-dual-list-box dualBoxData = dualBoxData}}
```

How to use `nges-link-to`

step 1: create `example-remitter-registration.js` file and include

```
this.set('params', {
      page: 'page1',
      age: '24',
})
```

step 2: create `example-remitter-registration.hbs` file and include

```
{{nges-core/nges-link-to
  routePath = 'create-remitter'
  label =  'Create Remitter'
  params = params
}}
```

step3: to access params helper method

```
//...
appConfiguration: service('app-configuration');     // declare service

//.... call method to get params
console.log('params', this.appConfiguration.getRouteURLParams());
```