Forge Data Days

Tokyo – 29 July 2022

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AUTODESK

Fusion Data API

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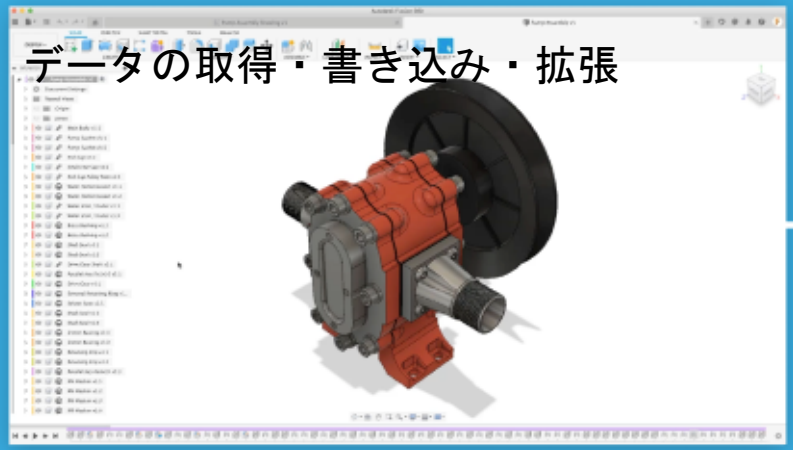
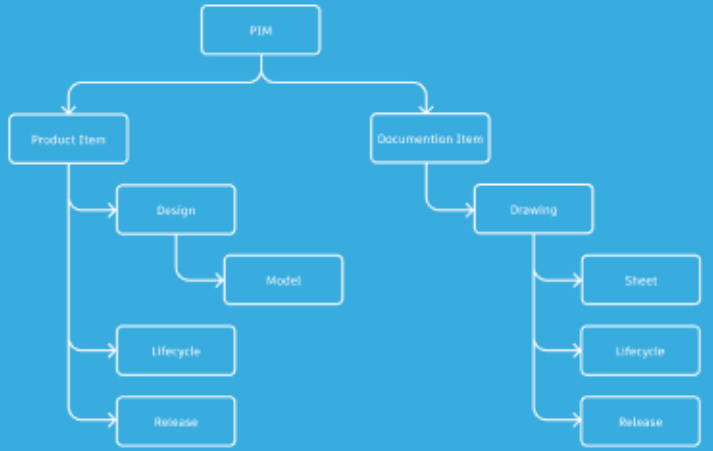
Fusion Data API

概要

クラウド上の製造設計データ

- 粒状化データ
- 容易なアクセス
- データの取得・書き込み・拡張





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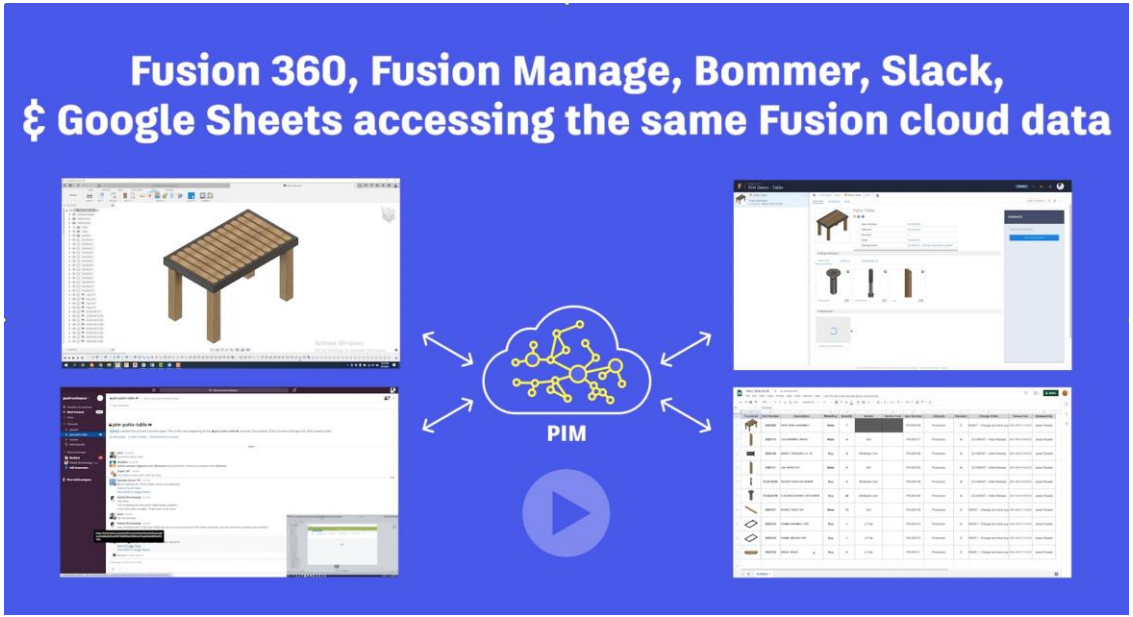
概要

クラウド上の製造設計データ信頼できる情報源



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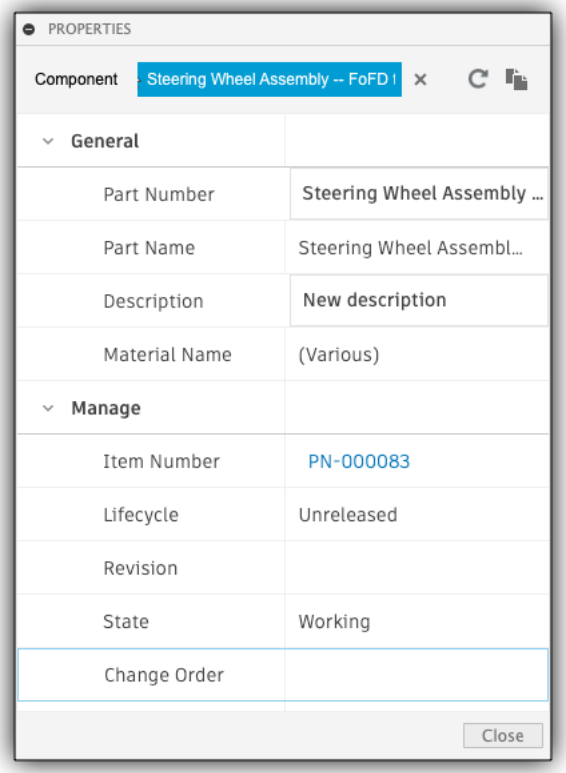
機能

- Data Management API access
  (hubs/projects/folders/files/versions)

- モデルプロパティ
- モデルの階層
- ライフサイクルプロパティ
- サムネイル画像 (内部コンポーネントを含む)
- イベント (webhooksのような)



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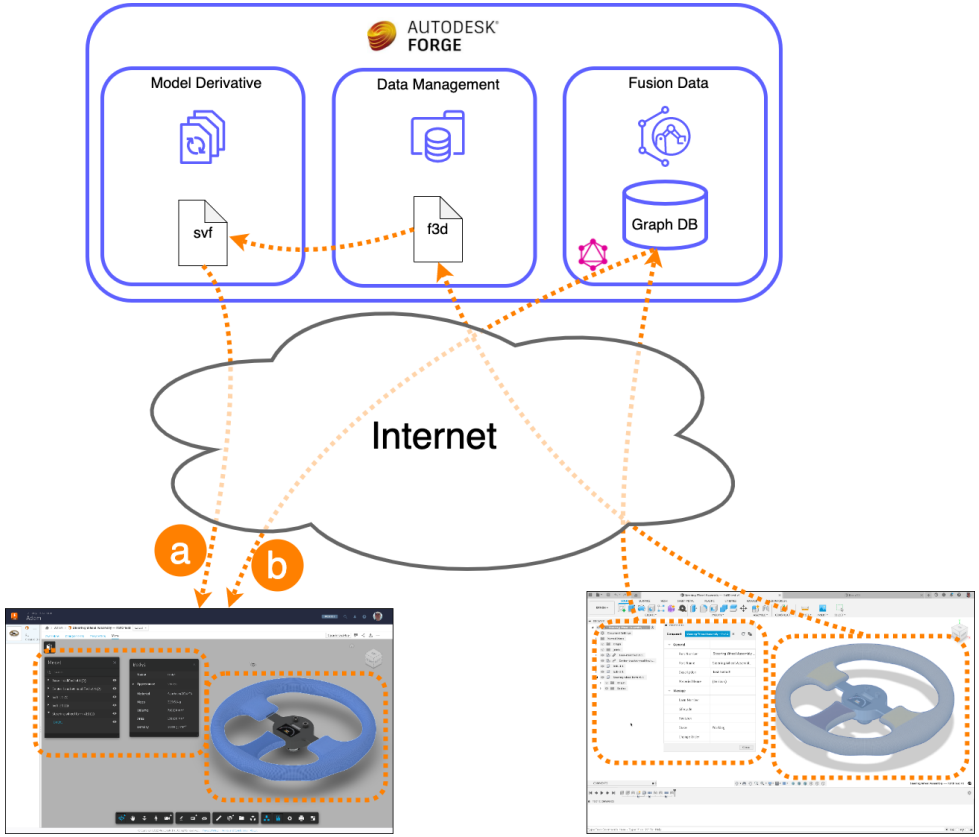
ワークフロー



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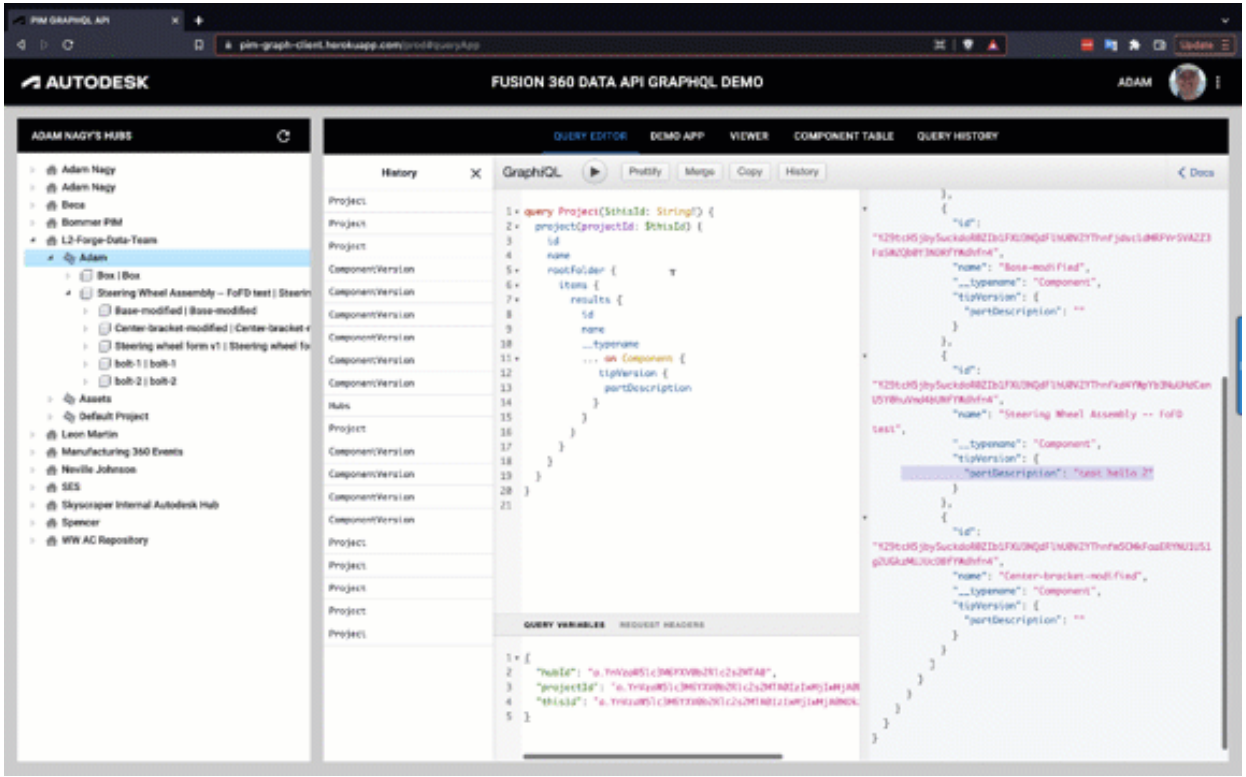
ワークフロー



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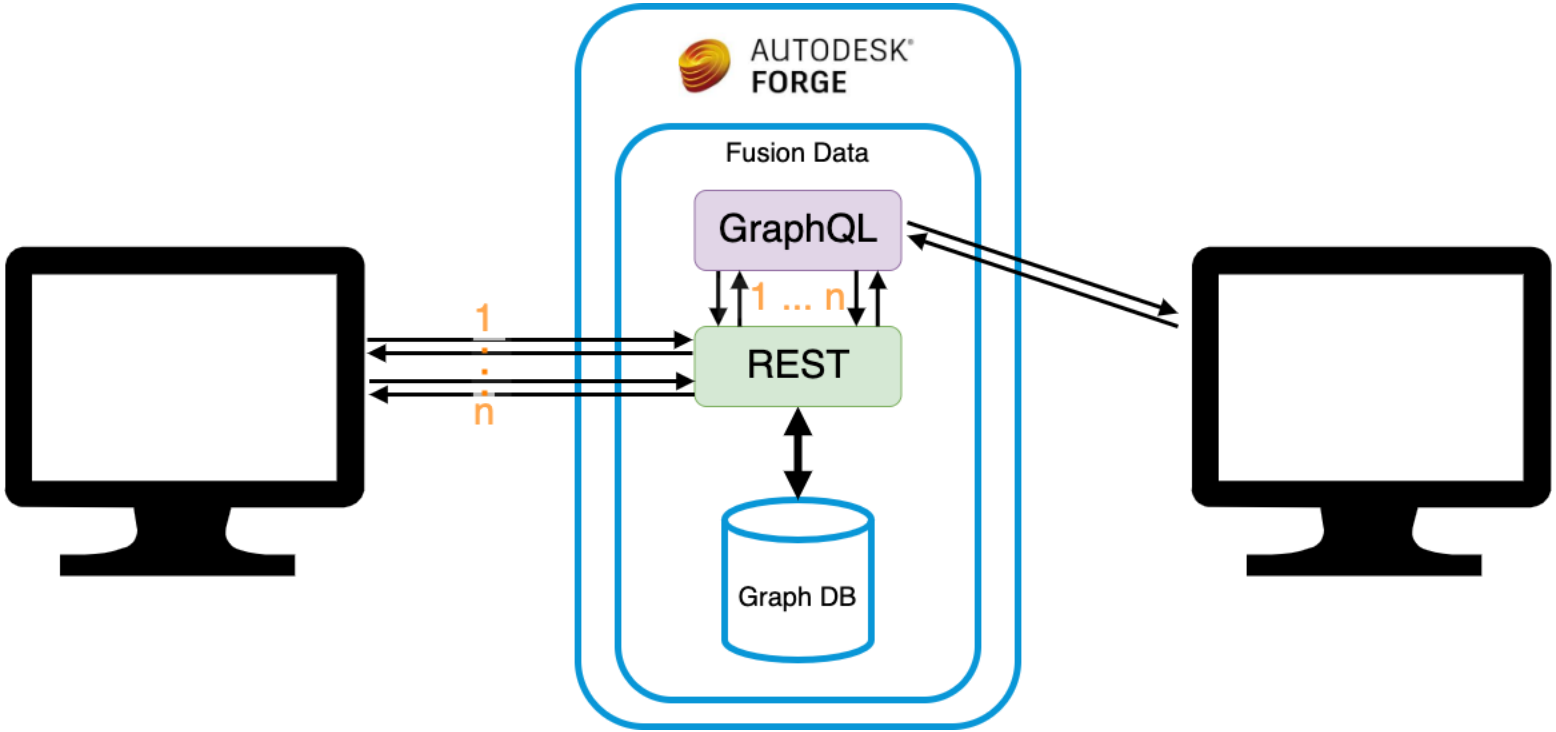
GraphQL API



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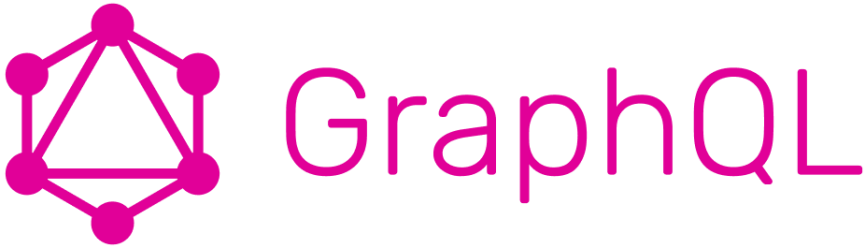
Fusion Data API

REST vs GraphQL

- 少ないAPI呼び出し
- 複数のクエリーを、1回のAPIの呼び出しに集約
- 必要なデータのみを取得



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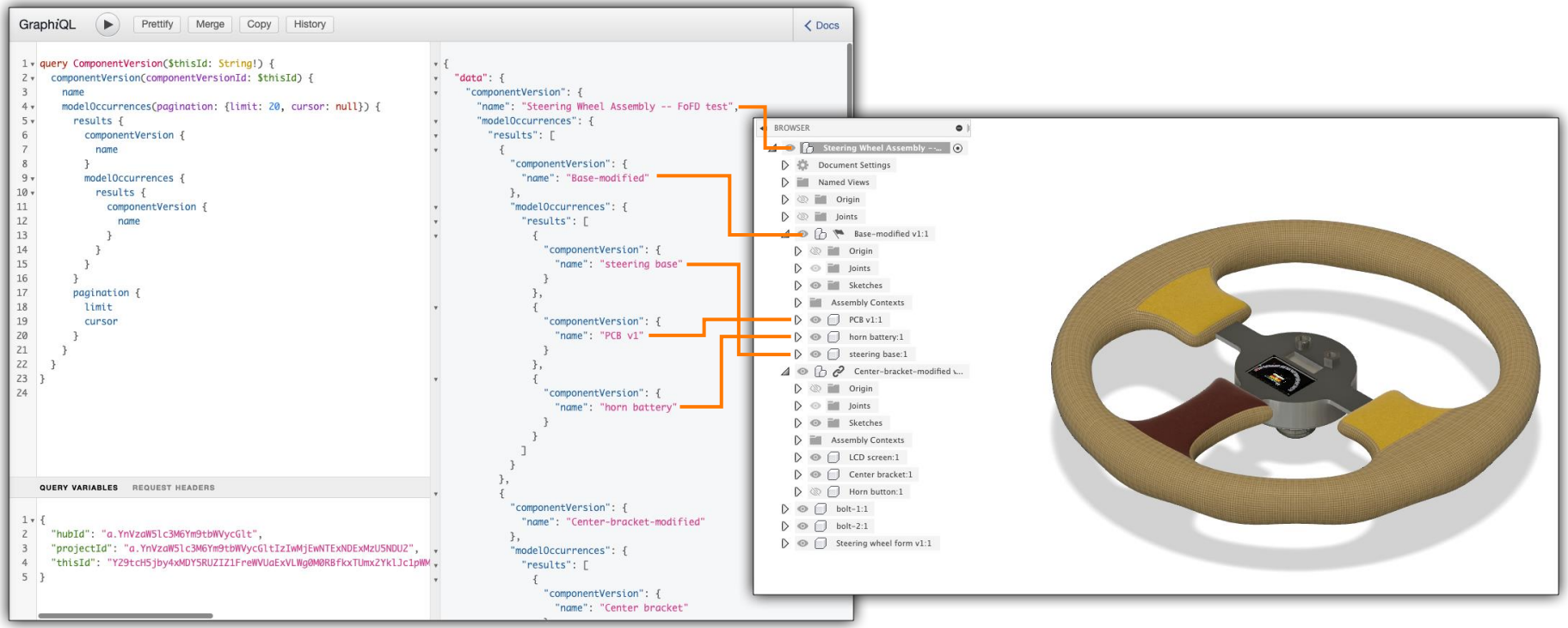
GraphQL API



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REST vs GraphQL - 少ないAPI呼び出し

1 x /project/v1/hubs

n x /project/v1/hubs/:hub_id/projects

GraphQL

```
{
  hubs {
    results {
      id
      name
      projects {
        results {
          name
        }
      }
    }
  }
}
```

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REST vs GraphQL -複数のクエリーを、1回のAPIの呼び出しに集約

n x /project/v1/hubs/:hub_id/projects

GraphQL

```
query {
  _1: hubs (filter: {name: ”Fusion Data"}) {
    results {
      projects {
        results {
          name
        }
      }
    }
  },
  _2: hubs (filter: {name: ”My Hub"}) {
    results {
      projects {
        results {
          name
        }
      }
    }
  }
}
```

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REST vs GraphQL - 必要なデータのみを取得

```
{
  "type": "hubs",
  "id": "a.cGVyc29uYWw6dWUyOWM4YjZi",
  "attributes": {
    "name": "Adam Nagy"
    "extension": {
      "type": "hubs:autodesk.a360:PersonalHub",
      "version": "1.0",
      "schema": {
        "href": "https://developer.api.autodesk.com/schema/v1/versions/hubs:autodesk.a360:PersonalHub-1.0"
      },
      "data": {}
    },
    "region": "US"
  },
  "links": {
    "self": {
      "href": "https://developer.api.autodesk.com/project/v1/hubs/a.cGVyc29uYWw6dWUyOWM4YjZi"
    }
  },
  "relationships": {
    "projects": {
      "links": {
        "related": {
          "href": "https://developer.api.autodesk.com/project/v1/hubs/a.cGVyc29uYWw6dWUyOWM4YjZi/projects"
        }
      }
    }
  }
},
```

```
{
 "data": {
  "hubs": {
   "results": [
    {
     "name": ”Adam Nagy"
    },
    {
     "name": "WW AC Repository"
    },
    {
     "name": ”Test Hub"
    },
 // etc
```

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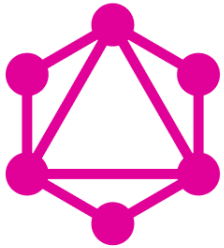
CRUD



GraphQL

C reate
R ead
U pdate
D elete

```
query {
  webhooks(pagination : $pagination) {
    #Webhooks Fields
  }
}
```

```
mutation {
  createWebhook(webhook: $webhook) {
    #Webhook Fields
  }
}
```

```
mutation {
  updateWebhook(input : $input) {
    #Webhook fields
  }
}
```

```
mutation {
  deleteWebhook(webhookId : $webHookId)
}
```

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ドキュメント

https://forge.autodesk.com/en/docs/fusiondata/v1/developers_guide/

https://graphql.org/

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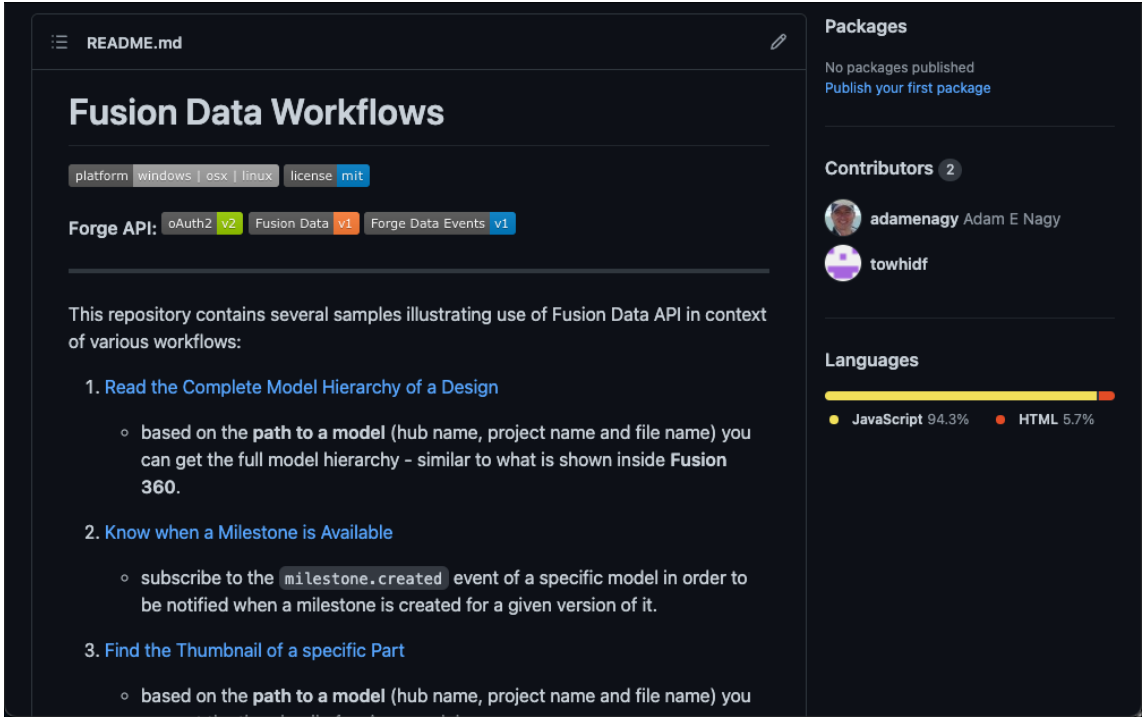
サンプル

https://github.com/Autodesk-Forge/FusionData_Workflows



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サンプル – サムネイル画像の取得

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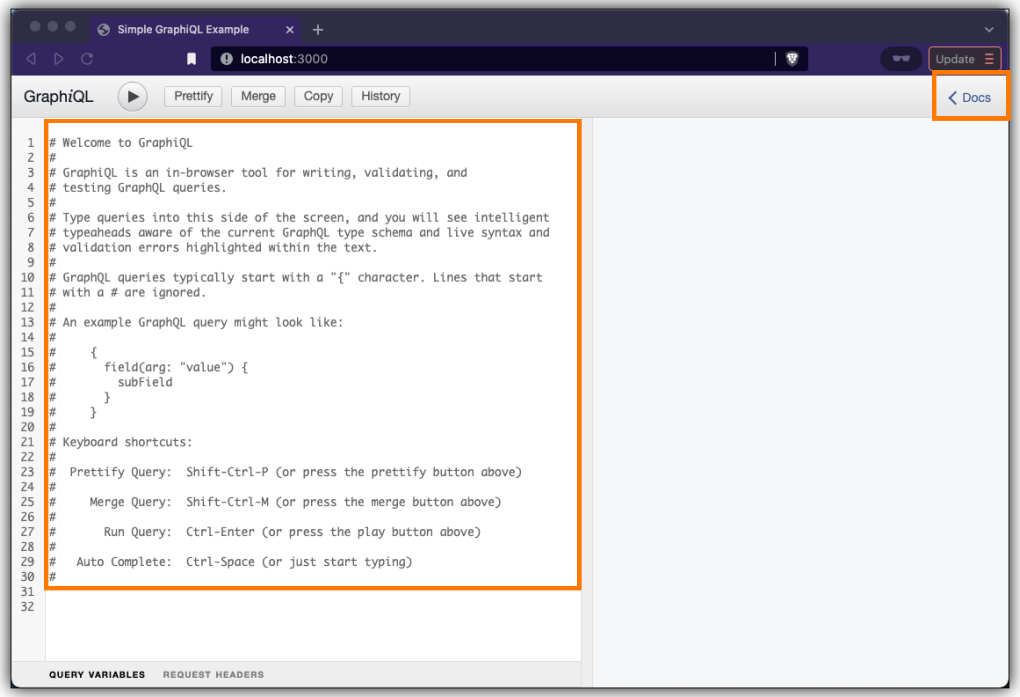
サンプル - Fusion Data Explorer

https://github.com/Autodesk-Forge/FusionData_Workflows/tree/main/Fusion%20Data%20Explorer



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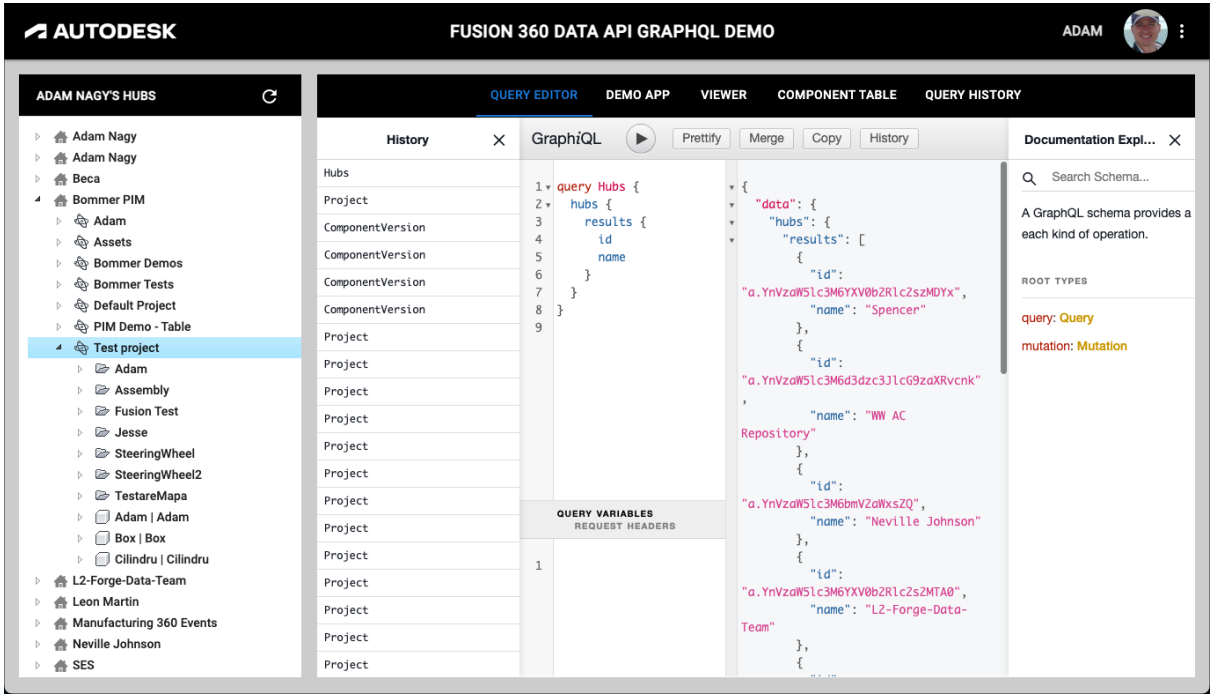
ユーティリティ

https://pim-graph-client.herokuapp.com/



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Utilities

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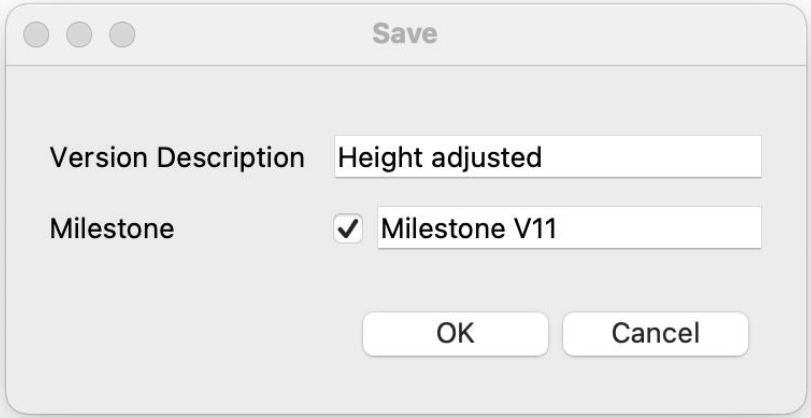
イベント

MILESTONE_CREATED

```
mutation {
  createWebhook(webhook: {
    componentId: $componentId,
    eventType: 'MILESTONE_CREATED',
    callbackURL: $callbackURL,
    expiresOn: "2022-10-12T07:20:50.52Z",
    secretToken: "12345678901234567890123456789012”
  }) {
    id
  }
}
```



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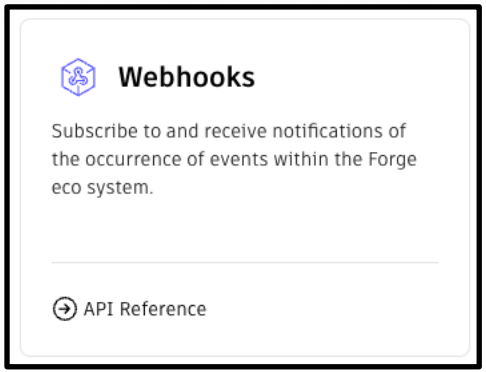

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