

SEP 21, 2022 • PERTH

Study plan project

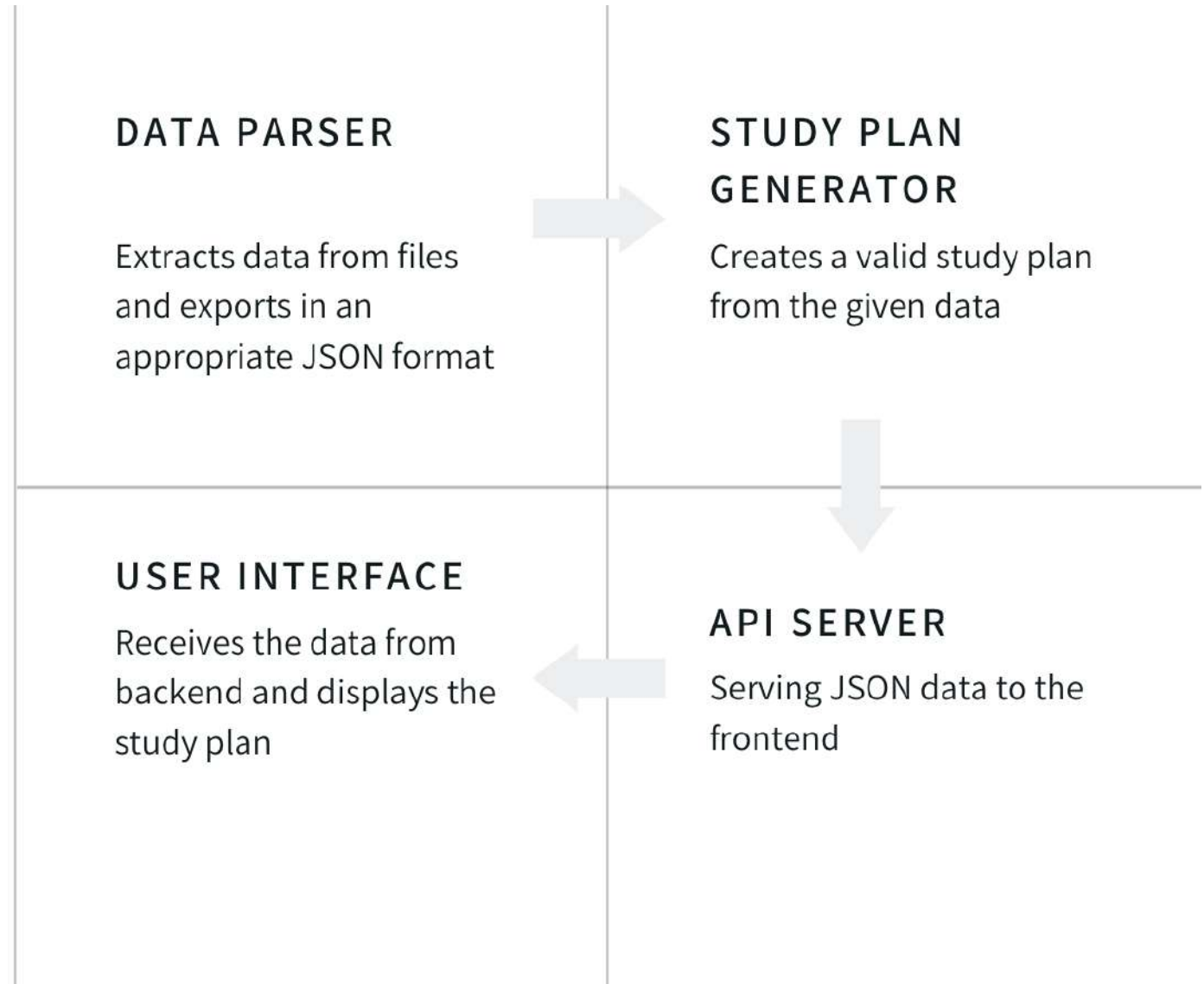
Sprint 2

Group 2



Four modules

A general project's architecture and what each of the modules does at the moment after sprint one



Data parser

Transforms the data from various files and formats into a structured JSON file with predefined format

INPUT

Units(s) to the value of 12 points:

Derivative Products and Markets	6 points	Active
Quantitative Methods for Finance	6 points	Active
Business Analysis and Valuation	6 points	Active
Financial Planning	6 points	Active

Units(s) to the value of 6 points:

Investment Analysis	6 points	Active
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Units(s) to the value of 12 points:

International Finance	6 points	Active
Banking: Theory and Practice	6 points	Active
Derivative Strategies and Pricing	6 points	Active
Trading in Securities Markets	6 points	Active
Applied Financial Management	6 points	Active

of outcomes

mapping URL: <https://uniwa.sharepoint.com/sites/curriculummapping/SitePages/Home.aspx>

Sequence export MJD-FINCE Finance 2

25%
Room: Add Gallery
Insert Table Graph Text Shape Media Comment
Collaborators

Sequence export

Sequence export

as at 01/01/2022 including active changes: units in MJD-FINCE Finance

Code	Title	Availabilities
443	ACCT1101 Financial Accounting	Semester 1 2022, Online (Online-TT) [Contact hours: n/a]; Semester 1 2022, Crawley (Face to face) [Contact hours: n/a]; Semester 1 2022, Albany (Face to face); Semester 2 2022, Online (Online-TT) [Contact hours: n/a]; Semester 2 2022, Crawley (Face to face);
535	FINA1221 Introduction to Finance	Semester 1 2022, Crawley (Face to face); Semester 1 2022, Online (Online-TT) [Contact hours: n/a];

Sheet Name

Sequence export

Background

Duplicate

Delete

OUTPUT

```
{
  "venue": "Online"
},
{
  "delivery": "Face to face",
  "semester": "Semester 1",
  "venue": "Crawley"
},
{
  "delivery": "Face to face",
  "semester": "Semester 1",
  "venue": "Albany"
},
{
  "delivery": "Online-TT",
  "semester": "Semester 2",
  "venue": "Online"
},
{
  "delivery": "Face to face",
  "semester": "Semester 2",
  "venue": "Crawley"
}
},
{
  "code": "ACCT1101",
  "core": true,
  "corequisites": [],
  "current_prerequisites": [],
  "foundation": false,
  "id": 443,
  "incompatibilities": [
    {
      "unit_code": "ACCT5432",
      "unit_title": "Introductory Financial Accounting"
    }
  ],
  "level": "1",
  "prerequisites": "Nil.",
  "title": "Financial Accounting",
  "unit_type": "Accounting"
},
{
  "availabilities": [
    {
      "delivery": "Face to face",
      "semester": "Semester 1",
      "venue": "Crawley"
    },
    {
      "delivery": "Online-TT",
      "semester": "Semester 1",
      "venue": "Online"
    }
  ],
  {
    "delivery": "Face to face",
    "semester": "Semester 2",
    "venue": "Crawley"
  }
}
```

Study plan generator

Takes in course details and settings, outputs a valid study plan

Added several new settings. Code refactored and merged into the app. Now can receive requests from the frontend and send responses

INPUT

```
    "venue": "Online"
  },
  {
    "delivery": "Face to face",
    "semester": "Semester 1",
    "venue": "Crawley"
  },
  {
    "delivery": "Face to face",
    "semester": "Semester 1",
    "venue": "Albany"
  },
  {
    "delivery": "Online-TT",
    "semester": "Semester 2",
    "venue": "Online"
  },
  {
    "delivery": "Face to face",
    "semester": "Semester 2",
    "venue": "Crawley"
  }
],
"code": "ACCT1101",
"core": true,
"corequisites": [],
"current_prerequisites": [],
"foundation": false,
"id": 443,
"incompatibilities": [
  {
    "unit_code": "ACCT5432",
    "unit_title": "Introductory Financial Accounting"
  }
],
"level": "1",
"prerequisites": "Nil.",
"title": "Financial Accounting",
"unit_type": "Accounting"
},
{
  "availabilities": [
    {
      "delivery": "Face to face",
      "semester": "Semester 1",
      "venue": "Crawley"
    },
    {
      "delivery": "Online-TT",
      "semester": "Semester 1",
      "venue": "Online"
    }
  ]
}
```

OUTPUT

```
{
  "semesters": [
    {
      "1": [
        "STAT1520",
        "ECON1101",
        "FINA1221",
        "ELECTIVE"
      ]
    },
    {
      "2": [
        "MGMT1135",
        "ACCT1101",
        "ELECTIVE",
        "ELECTIVE"
      ]
    }
  ],
  "year": 1
},
{
  "semesters": [
    {
      "1": [
        "MGTG1203",
        "FINA2222",
        "FINA2205",
        "ELECTIVE"
      ]
    },
    {
      "2": [
        "FINA2204",
        "ELECTIVE",
        "ELECTIVE",
        "ELECTIVE"
      ]
    }
  ],
  "year": 2
},
{
  "semesters": [
    {
      "1": [
        "FINA3324",
        "ECON3236",
        "ELECTIVE",
        "ELECTIVE"
      ]
    },
    {
      "2": [
        "FINA3307",
        "ELECTIVE",
        "ELECTIVE",
        "ELECTIVE"
      ]
    }
  ],
  "year": 3
}
}
```

[HTTPS://CAPSTONE-PROJ-API-SERVER.HEROKUAPP.COM/API/COURSES/COURSE1/](https://capstone-proj-api-server.herokuapp.com/api/courses/course1/)

STUDY PLAN GENERATOR

Semi automatic

Allows user to choose level 3 and level 2 units from the provided options

Fully automatic - TO BE IMPLEMENTED

Creates a full study plan, randomly choosing the optional level 2 and 3 units

TAKES MAJOR'S RULES

Take unit(s) to the value of 12 points:		
ECON3236	International Finance	6 points
FINA3304	Banking: Theory and Practice	6 points
FINA3306	Derivative Strategies and Pricing	6 points
FINA3307	Trading in Securities Markets	6 points
FINA3326	Applied Financial Management	6 points



UI TO SELECT OPTIONAL UNITS

Level 2 options
Selected: 2 out of 2 units

☐ FINA2204 Derivative Products and Markets

☒ FINA2205 Quantitative Methods for Finance

☒ FINA2207 Business Analysis and Valuation

☐ FINA2209 Financial Planning

Level 3 options
Selected: 2 out of 2 units

☒ ECON3236 International Finance

☒ FINA3304 Banking: Theory and Practice

☐ FINA3307 Trading in Securities Markets

☐ FINA3326 Applied Financial Management

Settings

Max number of foundational units per semester ⓘ	<input checked="" type="range"/>	2
Max number of core units per semester ⓘ	<input checked="" type="range"/>	2
Min number of elective units per semester ⓘ	<input checked="" type="range"/>	1
Consider online options ⓘ	<input type="checkbox"/>	OFF
Restrict unit levels by year ⓘ	<input type="checkbox"/>	OFF
Restrict units by semester ⓘ	<input checked="" type="checkbox"/>	ON

SETTINGS

Study plan generator will have a set of settings to adjust the generation process. For example:

- Maximum number of foundational units per semester
- Maximum number of major's core units per semester
- Minimum number of slots for ELECTIVES per semester
- Consider online options
- Restrict units by year or semester

User interface

Consists of two pages at this moment:

1. Adjust settings and optional units for the study plan
2. Adjust study plan, check it and print

Study plan generator test UI

Select an option

Fetch

STUDY PLAN SETTINGS

COURSE DETAILS

Settings

Max number of foundational units per semester ⓘ

2

Max number of core units per semester ⓘ

2

Min number of elective units per semester ⓘ

1

Consider online options ⓘ

OFF

Restrict unit levels by year ⓘ

OFF

Restrict units by semester ⓘ

ON

Generate study plan

Bachelor of commerce, Finance major

Year 1

Semester 1		Semester 2	
STAT1520	Economic and Business Statistics	MGMT1135	Organisational Behaviour
ECON1101	Microeconomics: Prices and Markets	ACCT1101	Financial Accounting
FINA1221	Introduction to Finance	FINA2222	Corporate Financial Policy
ELECTIVE		ELECTIVE	

Year 2

Semester 1		Semester 2	
MKTG1203	Introduction to Marketing	FINA2204	Derivative Products and Markets
FINA2205	Quantitative Methods for Finance	ELECTIVE	
ELECTIVE		ELECTIVE	
ELECTIVE		ELECTIVE	

Year 3

Semester 1		Semester 2	
FINA3324	Investment Analysis	ELECTIVE	
ECON3236	International Finance	ELECTIVE	
FINA3304	Banking: Theory and Practice	ELECTIVE	
ELECTIVE		ELECTIVE	

Check study plan

Study plan checker

Takes in a study plan and returns details on its consistency and validity

Study plan

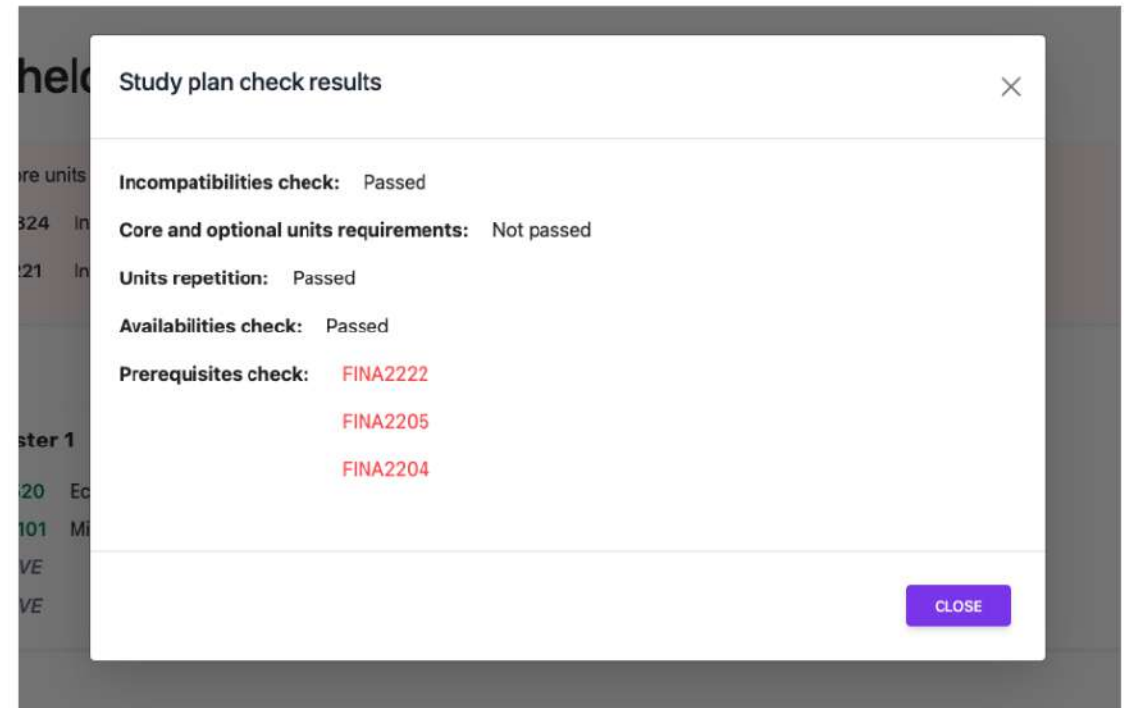
```
[
  {
    "semesters": [
      {
        "1": [
          "STAT1520",
          "ECON1101",
          "FINA1221",
          "ELECTIVE"
        ]
      },
      {
        "2": [
          "MGMT1135",
          "ACCT1101",
          "ELECTIVE",
          "ELECTIVE"
        ]
      }
    ],
    "year": 1
  },
  {
    "semesters": [
      {
        "1": [
          "MKTG1203",
          "FINA2222",
          "FINA2205",
          "ELECTIVE"
        ]
      },
      {
        "2": [
          "FINA2204",
          "ELECTIVE",
          "ELECTIVE",
          "-----"
        ]
      }
    ]
  }
]
```

Checker results

```
"availabilities_check": [
  {
    "STAT1520": true,
    "ECON1101": true,
    "FINA1221": true,
    "ELECTIVE": true
  },
  {
    "MGMT1135": true,
    "ACCT1101": true,
    "ELECTIVE": true
  },
  {
    "MKTG1203": true,
    "FINA2222": true,
    "FINA2205": true,
    "ELECTIVE": true
  },
  {
    "FINA2204": true,
    "ELECTIVE": true
  },
  {
    "FINA3324": true,
    "ECON3236": true,
    "ELECTIVE": true
  },
  {
    "FINA3307": true,
    "ELECTIVE": true
  }
],
"prerequisites_check": [
  {
    "STAT1520": true,
    "ECON1101": true,
    "FINA1221": true,
    "ELECTIVE": true
  },
  {
    "MGMT1135": true,
    "ACCT1101": true,
    "ELECTIVE": true
  },
  {
    "MKTG1203": true,

```

Display results in UI



Objectives for second sprint

DATA PARSER

- ✓ - Extract data for other majors
- ✗ - Make use of the prerequisites files

STUDY PLAN GENERATOR

- ✓ - Generate study plans for other majors
- ✓ - create study plan checker module

USER INTERFACE

- ✓ - switch units in a study plan
- ✓ - check if study plan is valid
- ✗ - export study plan in PDF

API SERVER

- ✓ Serving JSON data to the frontend

Objectives for third sprint

DATA PARSER

- Extract data for more majors
- Parse electives

STUDY PLAN GENERATOR

- Add fully automatic generation
- Generate plan for double major

USER INTERFACE

- Allow user to select electives
- Improve validation interface
- export study plan in PDF

STUDY PLAN CHECKER

- Add several new checks like total points and total units of level or enrolment into a degree