



Faria Education Group

# APIs and Beyond

Ryan Tannenbaum

Faria Education Technology Conference  
March 1-5, 2021



# Who am I?

- ICT (Educational Technology) Director at OCAC Suzhou
- Worked in both Canadian and international schools (China and Korea) for 10 years as teacher, principal, and now technology director
- Worked to integrate digital platforms and technology based off needs observed in schools

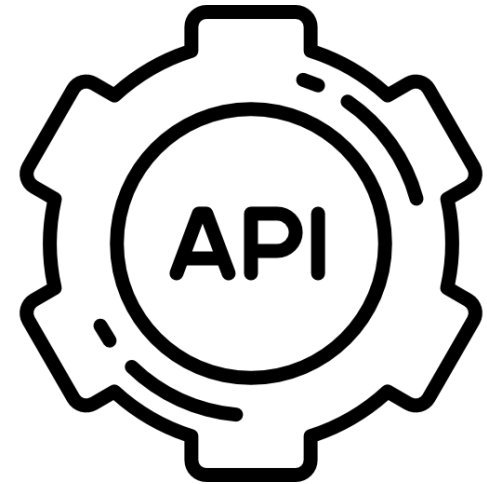


# Key Takeaways

- See how one school has leveraged the ManageBac API to integrate systems and increase organizational efficiency
- Consider ways to better keep stakeholders up to date
- Look at standards for logging and organization of data

# APIs and Beyond

- How we got here
  - Getting to know OCAC
  - How it started
- What we're doing
  - Optimizations and integrations
  - Building novel platforms
  - Working with data
- Where we're going
  - Challenges that we've faced
  - Refining the architecture
  - Future goals



# Overseas Chinese Academy of Chiway - Suzhou

- Founded in 2017 with ~300 students (G1-5)
- In 2021, it is a PreK-G12 school with just under 2000 students
- Rapid growth means rapid deployment of new systems
- Changing interests as the school finds its new direction
- ManageBac has been our rock – stability in the whirlwind
- Navigating the “Great Firewall”



# Getting to know the API

The ManageBac API is powerful and convenient to use.

It returns data in JSON structure.

It helps you to quickly find the unique identifiers that ManageBac uses to refer to users, classes, year groups, terms and more.

```
"student": {  
  "id": 12667664,  
  "email": "ryandt@ocac-suzhou.net",  
  "first_name": "Faker",  
  "middle_name": "",  
  "last_name": "Student",  
  "archived": false,  
  "created_at": "2018-08-27T08:04:37.000+08:00",  
  "updated_at": "2021-01-12T09:46:04.000+08:00",  
  "last_accessed_at": "2021-02-04T16:11:15.000+08:00",  
  "phone_number": "",  
  "mobile_phone_number": "",  
  "national_id": "",  
  "photo_url": "https://api.managebac.cn/v2/avatars/12667664/v1",  
  "student_id": "9876543210122",  
  "homeroom_advisor_id": 12124168,  
  "cas_advisor_id": 12700361,  
}
```

# Starting to play around



POSTMAN

- Working with the API requires some knowledge of HTTP requests, however this is quite easy to get started with
- In general, the API allows you to use three request methods
  - GET – to “get” data
  - POST – to “post” (or send) new data
  - PUT – to update or “put” some new data in existing data
- An easy way to get started with APIs is with “Postman”

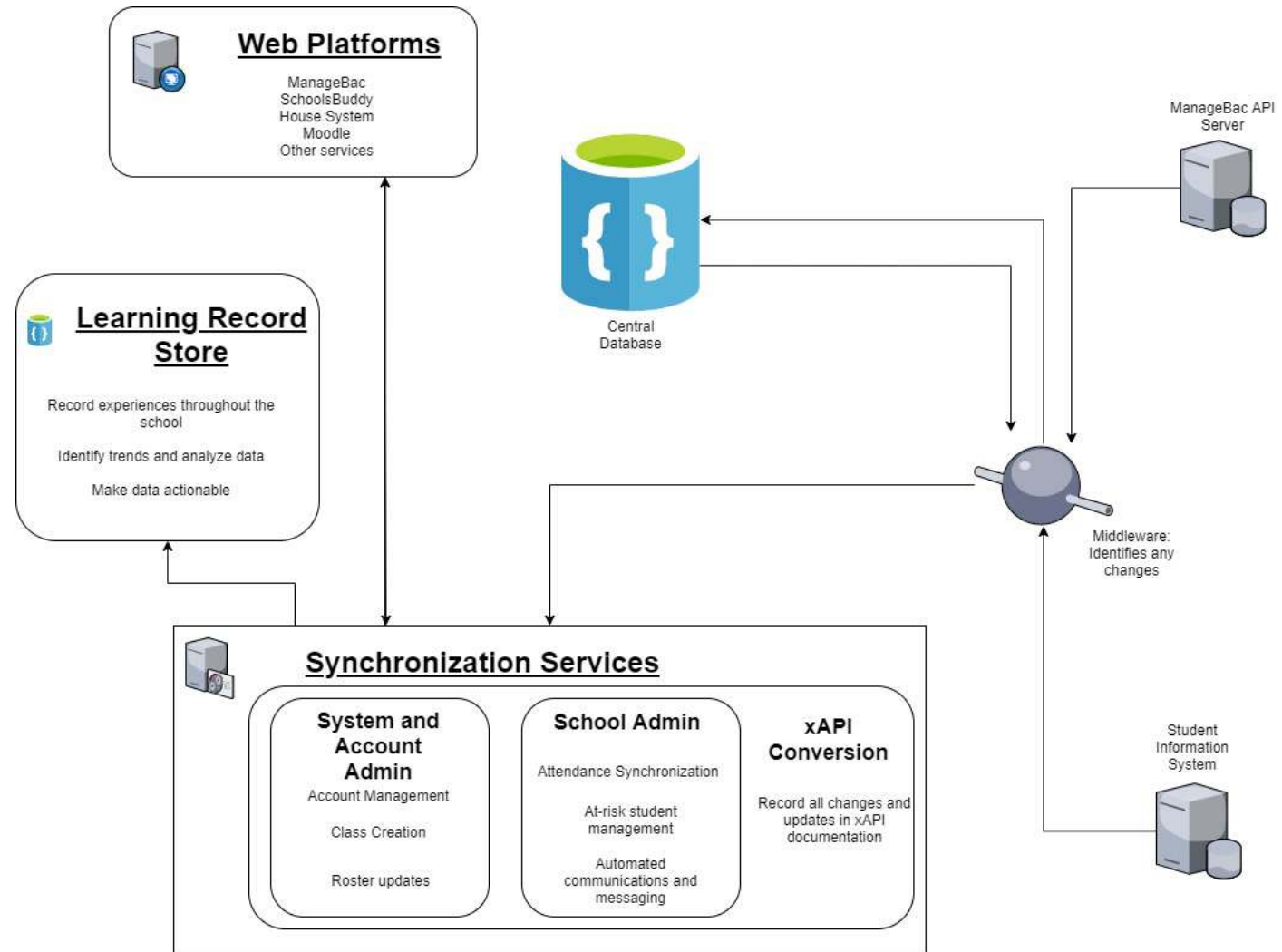


# Starting points

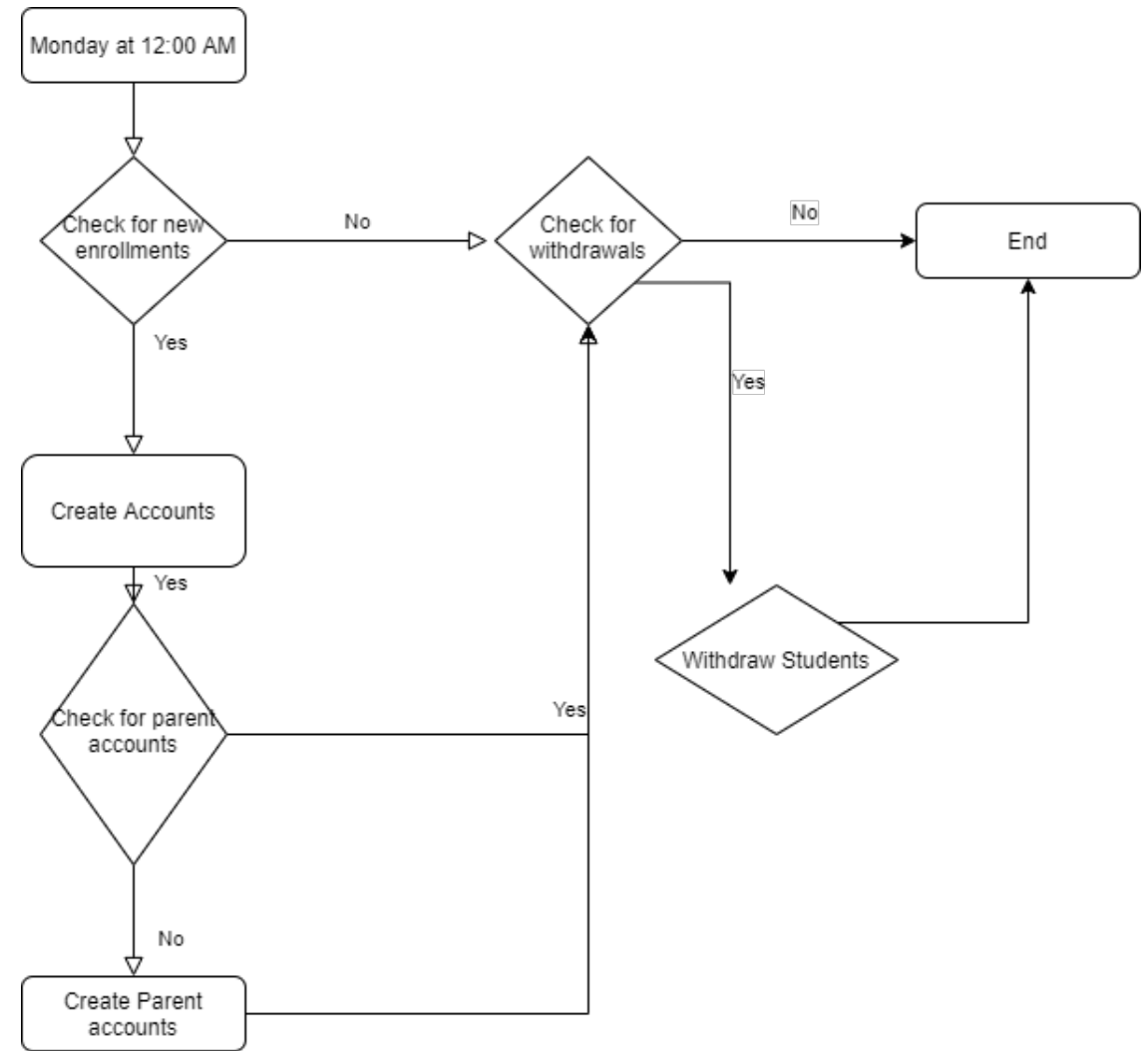
- Important points to consider:
  - Each ManageBac object has an identifier unique to the ManageBac system.
    - In order to begin working effectively with the API, you need a way to easily access this information
  - The API is often more versatile and flexible
    - You can easily resolve improperly formatted names by updating student and teacher profiles through the API
    - You can automate checks, updates and uploads
  - The API is not all-powerful
    - Make sure that you have tested the functionality before starting on a project
  - The API is not perfect (but then ... nothing is)
    - Include error handling measures

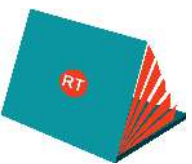


# OCAC at a glance



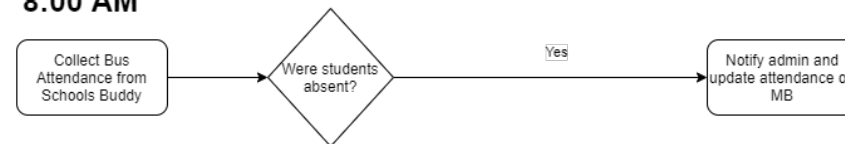
# Integrations: Admissions



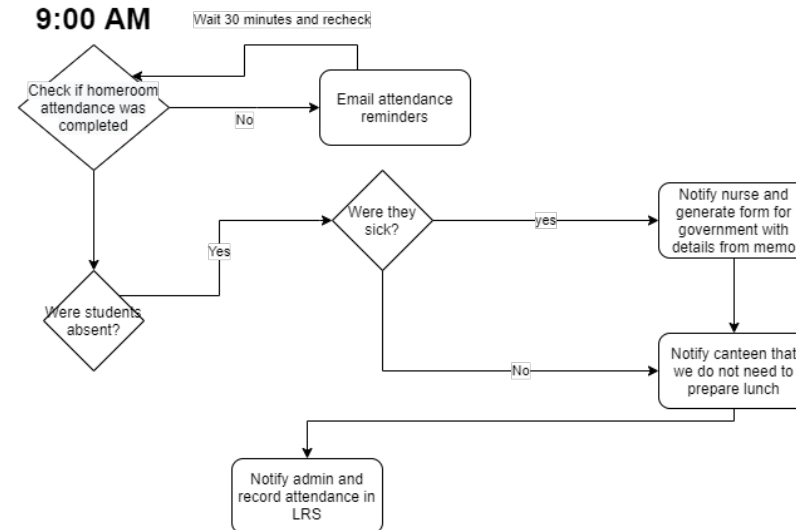


# Attendance:

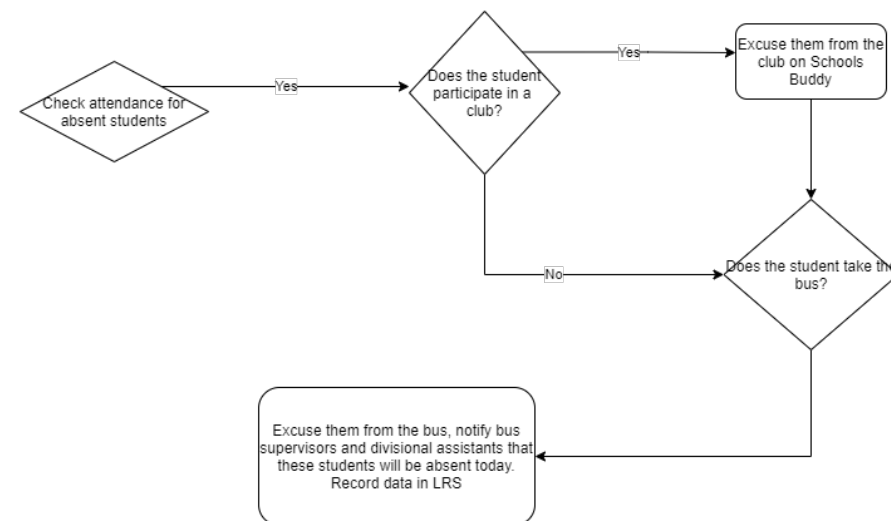
8:00 AM



9:00 AM



2:00 PM



# Houses:

House: Ryan Tannenbaum

Welcome to Houses

Yellow Monthly Points: 405 Total Points: 1591

Red Monthly Points: 517 Total Points: 1701

Green Monthly Points: 515 Total Points: 1811

Blue Monthly Points: 477 Total Points: 1517

Click here to go back.

Student Faker - 9876543210122

House: Red

Email: ryandt@ocac-suzhou.net Grade: Grade 1

Monthly Points: 2

Total Points: 2

Points Earned:

Principled X

Caring X

Very considerate

Add a Point

Choose a category

Communicator

Risk-Taker

Reflective

Balanced

Knowledgeable

Open-Minded

Inquirers

Caring

Principled

Thinkers

Demerit

Message

Enter Message

Submit Point

# Learning Record Store

- A learning record store (LRS) is a database for storing data
- We use the xAPI document model for our data recording
- xAPIs documents are summarized simply as:
  - Subject – Verb – Object
  - This makes them simple to understand...

...or not

```
{
  "stored": "2021-02-21T15:16:12.408Z",
  "active": true,
  "completedForwardingQueue": [],
  "failedForwardingLog": [],
  "client": "5f742a3230195c7180145d9a",
  "lrs_id": "5f742a3230195c7180145d99",
  "completedQueues": [
    "STATEMENT_FORWARDING_QUEUE",
    "STATEMENT_PERSON_QUEUE",
    "STATEMENT_QUERYBUILDERCACHE_QUEUE"
  ],
  "activities": [
    "https://11.ocasuzhou.net/data/xAPI/point/Reflective"
  ],
  "hash": "9fb020ca10efc7815dc6a4759f6b0157dd1d901b",
  "agents": [
    "mailto:ryandt@ocac-suzhou.net"
  ],
  "statement": {
    "authority": {
      "objectType": "Agent",
      "name": "New Client",
      "mbox": "mailto:hello@learninglocker.net"
    },
    "stored": "2021-02-21T15:16:12.408Z",
    "context": {
      "platform": "Houses",
      "instructor": {
        "name": "Tannenbaum Ryan",
        "mbox": "mailto:ryantannenbaum@ocac-suzhou.com",
        "objectType": "Agent"
      }
    },
    "actor": {
      "name": "Student Faker",
      "mbox": "mailto:ryandt@ocac-suzhou.net",
      "objectType": "Agent"
    }
  },
}
```

```
{
  "id": "ec877d76-c4b1-459d-86f2-ec71cee65b54",
  "verb": {
    "id": "https://11.ocasuzhou.net/data/xAPI/verbs/award",
    "display": {
      "en": "was awarded"
    }
  },
  "object": {
    "id": "https://11.ocasuzhou.net/data/xAPI/point/Reflective",
    "definition": {
      "type": "https://11.ocasuzhou.net/data/xAPI/point/",
      "name": {
        "en": "Reflective"
      }
    },
    "objectType": "Activity"
  },
  "hasGeneratedId": false,
  "deadForwardingQueue": [],
  "voided": false,
  "verbs": [
    "https://11.ocasuzhou.net/data/xAPI/verbs/award"
  ],
  "personaIdentifier": "5f642d3038ee3829f41f4331",
  "processingQueues": [],
  "person": {
    "_id": "5f642d30e1145c7199a18e5f",
    "display": "Student Faker"
  },
  "__v": 1,
  "timestamp": "2021-02-21T15:16:12.408Z",
  "relatedActivities": [
    "https://11.ocasuzhou.net/data/xAPI/point/Reflective"
  ],
  "relatedAgents": [
    "mailto:ryandt@ocac-suzhou.net",
    "mailto:ryantannenbaum@ocac-suzhou.com",
    "mailto:hello@learninglocker.net"
  ],
  "organisation": "5f62bc090371a572ee88fa91",
  "_id": "6032793c2340cc049e769f08",
  "registrations": [],
  "pendingForwardingQueue": []
}
```

# Learning Locker



- At OCAC, we are using the open-source LRS *Learning Locker* as a self-hosted solution

Admin Dashboard	Divisional Dashboards	Student Dashboards
Course creation/deletion Class enrollment/unenrollment Student enrollment/withdrawal	Vertical and horizontal articulation Grading frequency and consistency Identifying whether assessment targets are met Tracking report completion	Charting gains and comparing performance over time Correlations between behaviour and performance Flagging students with repeated behaviour offenses



Overseas Chinese Academy of  
Chiway Suzhou

Data

Dashboards

Visualise

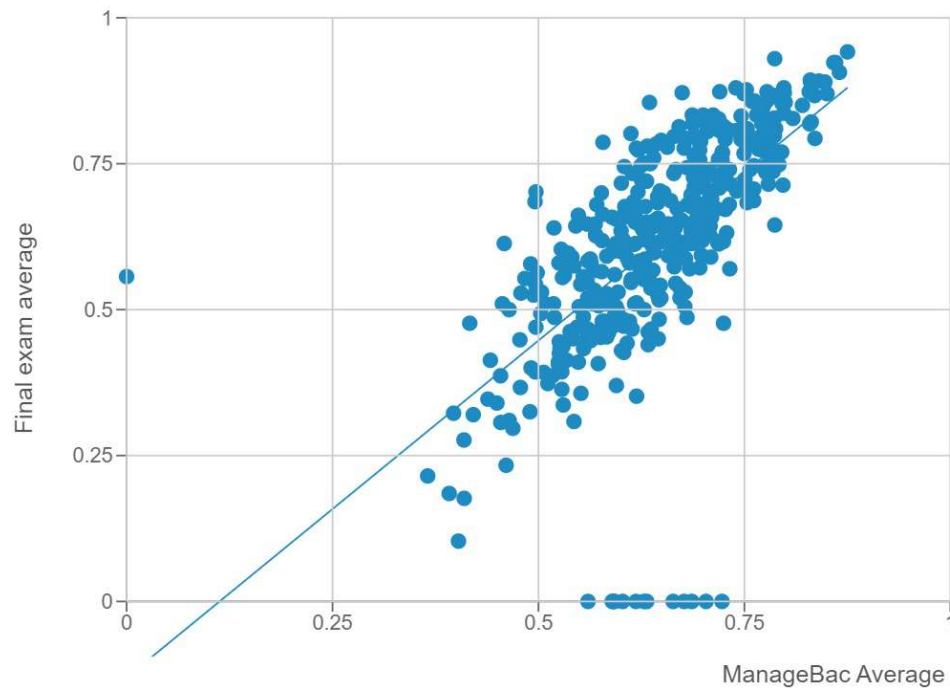
Source

Statement Forwarding

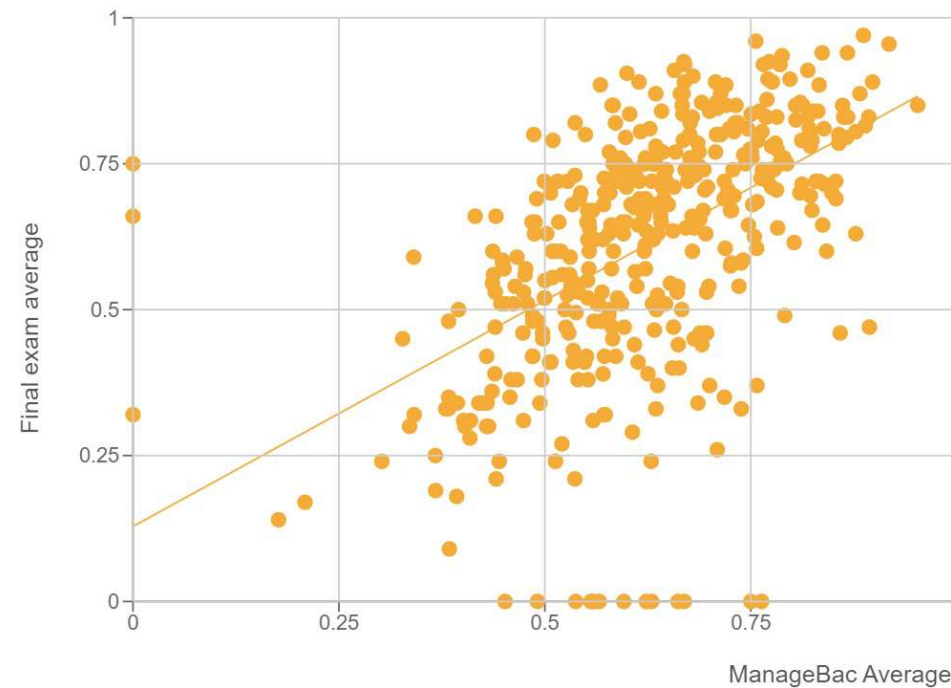
People

Settings

Strong Correlative Graph










Weak Correlative Graph

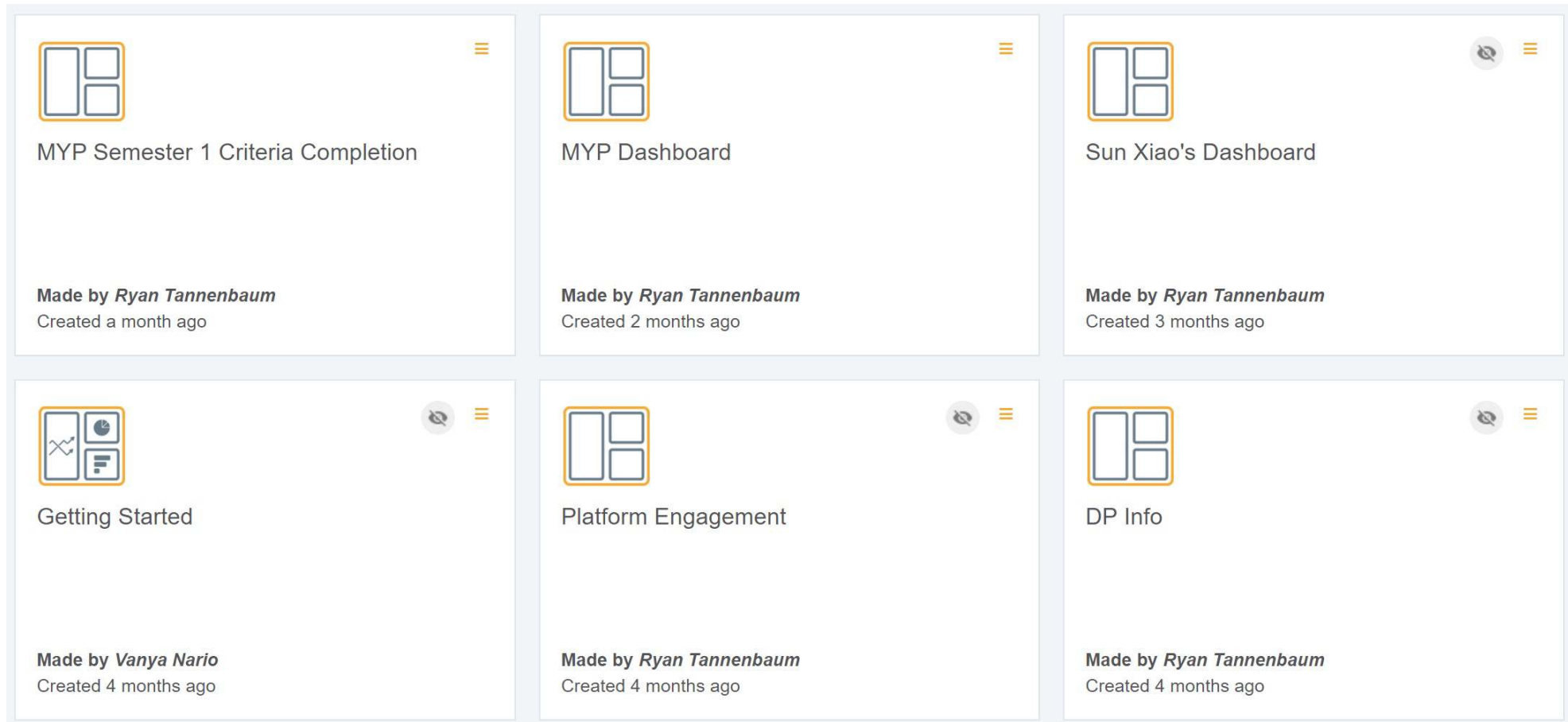




# What we record:

> MB Behaviour ( 7097 )	Created a day ago	
> PYP Map Data ( 2641 )	Created 24 days ago	
> Attendance ( 1119 )	Created a month ago	
> ManageBac Cloud ( 175149 )	Created a month ago	
> MYP Assessment ( 2284 )	Created 2 months ago	
> Houses ( 7387 )	Created 5 months ago	
> Moodle ( 82695 )	Created 5 months ago	

# Setting up Dashboards





# Going Beyond the API

- There are limitations to the API and the data that it offers
- If you can access data, there are ways to automate retrieval and interaction
  - Attendance management – Writing bots with Node.JS's Cheerio plugin
  - Behaviour tracking – Downloading and parsing the excel file through string manipulation
  - SchoolsBuddy – writing our own bulk upload functionality and attendance management systems

# Where we're going:

- Building dashboards to ensure horizontal/vertical articulation
- Developing “whole-student” holistic data models to measure growth and flag at risk students
- Building integrations between ManageBac and other platforms (Moodle synchronization)
- Opening learning data to students to help develop AtL and self-regulatory skills

Q&A