

Sample School payment system

Payment API Documentation, version 1.0

Introduction

Sample School is a school that is created for demo purpose and engaged in teaching and learning process.

This document outlines a web service designed for payment solution integrators, enabling students of Sample School to settle service fees electronically using various payment methods.

Major integration Tasks

The major tasks required for fully implementing integrated payment management system are the following.

No	Major Task	Activities
1.	Handling payments	<ul style="list-style-type: none">• Search payment order information• Process Payment

Integration Steps

The workflow for integrating payment processing for Sample School students can be summarized as below:

- Students use the unique identifier given to them to know their outstand balance
- The students open the payment processing platforms which avails the options to insert their identity number
- The payment processing platform searches the payment record and returns the details of payment including "due date", "student name" "account number" "penalty" and "total amount to be paid".
- Payment processing platform makes a Payment Transfer Transaction from Students account to School account
- Payment processing platform updates Sample School system to confirm “successful transaction”. The posted record will include “Payment status”, "date",

"reference code", "student name", "amount", "penalty", "total", "debit account",
"credit account"

Authentication

Each user accessing the system is identified by “Username” and “Password”. Basic Authentication requires a client to provide a username and password in the request header. This method ensures that only authorized users can access the API endpoints, adding a layer of protection.

On every request the username and password must be included in the header. To access the API, the client must include the Authorization header in each request. The value of this header should be in the format:

`Authorization: Basic <base64_encoded_credentials>`

Where `<base64_encoded_credentials>` is the Base64-encoded string of `username:password`. For example, if the username is *admin* and the password is *password123*, the Base64-encoded credentials would be `YWRtaW46cGFzc3dvcmQxMjM=`

If the Username and Password is valid, then the system process the request else it will reply 401 error status.

Method: GET/POST

Request Header:

Key	Value
Authorization	Basic <base64_encoded_credentials>

Error code

Error Code	Message
401	Unauthorized: Missing Authorization Header

Collecting Payment

The following steps need to be used to process the payment.

1. Retrieves outstand payment

Retrieve the outstanding payment amount by supplying the student identification number (ID Number) that was given to the student at the time of registration. Use the following API for this purpose.

<http://domainname/api/CBE/schoolbill/{id}>

Method: GET

Input: ID - the Identification Number generated when the student was registered.

Return value: An object with the following attributes

Parameter	Description	Data type	Length
id	Id that uniquely identifies each student	Integer	
due_date	Due date for payment without penalty	String	8
student_name	Name of the student	String	
amout	Outstanding balance	Decimal	
penalty	Penalty payment	Decimal	
total	Outstanding plus penalty amount	Decimal	

Error codes

Error Code	Message
400	The provided ID is in invalid format
406	The provided ID number doesn't exist in the record

Sample request URL: <http://localhost:4500/api/CBE/schoolbill/1234>

Request authentication header:

Authorization: Basic YWRtaW46cGFzc3dvcmQxMjM=

2. Collect payment

Making payment record using the following API

<http://domainname/api/CBE/schoolbill>

Method: POST

The API expects an object with the following parameters:

Parameter	Description	Datatype	Length	required
id	Student identification number	Integer		✓
amount	Amount to be paid	Decimal		✓
penalty	Penalty if any	Decimal		

Return value: An object with the following attribute

Parameter	Description	Datatype	Length
id	Student identification number	Integer	
payment_status	Indicated the status of payment	String	
date	The date and timestamp when the transaction occurred	Date Time	
reference_code	A number the represent this unique transaction	Integer	10
student_name	Name of the student	String	
amount	Paid amount	Decimal	
penalty	Penalty amount	Decimal	
total	Total price paid (amount + penalty)	Decimal	
debit_account	Account number from which the money is deducted	String	13
credit_account	Account number to which the money is transferred	String	13

Error codes

Error Code	Message
400	The provided ID is in invalid format
406	The provided ID number doesn't exist in the record

Post request url: <http://localhost:4500/api/CBE/schoolbill/1234>

Sample Request Body

```
{  
  "id": 2,  
  "amount": 2980.84,  
  "penalty": 100.00  
}
```

Request authentication header:

Authorization: Basic YWRtaW46cGFzc3dvcmQxMjM=

Sample response Body

```
{  
  "payment_status": "done",  
  "date": "2024-11-14T12:30:36.345Z",  
  "reference_code": "2732895682",  
  "student_name": "Ayalew Belaynesh",  
  "amount": 2980.84,  
  "penalty": 100,  
  "total": 3080.84,  
  "debit_account": "1000030382812",  
  "credit_account": "1000453423451"  
}
```