

Coding Assignment: Financial Assistance Scheme Management System (FASMS)

A collection of requests to interact with the Django Backend created for the FASMS.

The FASMS application aims to assist administrators managing financial assistance schemes for needy individuals and families.

POST Admin Register

`http://localhost:5000/api/admin/register/`

Creates a new user account and returns an authentication token.

Request Fields

username

Required. 150 characters or fewer. Usernames may contain alphanumeric, `_`, `@`, `+`, `.` and `-` characters.

email

Required. Valid email address.

password

Required. Password string that must meet the following requirements:- Cannot be too similar to username or other personal information- Must be at least 8 characters long- Cannot be a commonly used password- Cannot be entirely numeric

password2

Required. Must match the password field for confirmation.

Response

201 Created

json

```
{
  "user": {
    "username": "string",
    "email": "user@example.com"
  },
  "token": "string"
}
```

400 Bad Request

json

```
{
  "username": ["This field is required."],
  "email": ["Enter a valid email address."],
  "password": ["Password fields didn't match."]
}
```

Note:

All endpoints require token-based authentication. Include the authentication token in the request header:

Plain Text

Authorization: Token <token_string>

Body raw (json)

json

```
{
  "username": "admin",
  "email": "user@admin.com",
  "password": "TestPassword123",
  "password2": "TestPassword123"
}
```

POST Admin Login

<http://localhost:5000/api/admin/login/>

Authenticates a user and returns a token.

Request Fields

username

Required. The username of the registered user.

password

Required. The user's password.

Response

200 OK

json

```
{
  "token": "string",
}
```

```
"user": {
  "username": "string",
  "email": "user@example.com"
}
```

400 Bad Request

```
json

{
  "non_field_errors": [
    "Unable to log in with provided credentials.",
    "User account is disabled."
  ]
}
```

Body formdata

username	testuser
password	TestPassword123

POST Admin Logout

<http://localhost:5000/api/admin/logout/>

Invalidates the user's authentication token by removing it from the database.

Authentication

Required. Include token in Authorization header:

Plain Text

Authorization: Token <token_string>

Response

200 OK

```
json

{
  "message": "Successfully logged out."
}
```

400 Bad Request

json

```
{
  "error": "Token does not exist"
}
```

401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

HEADERS

Authorization

Token 863bab1c7bf4974930d9410def73898f288351e1

POST Create Applicant

<http://localhost:5000/api/applicants/>

Creates a new applicant with their personal information and optional household members. An applicant ID will automatically be generated using UUID.

Applicant Fields

Field	Type	Required	Description
nric	string	Yes	National ID, must be 9 characters long
name	string	Yes	Full name, max 100 characters
sex	string	No	Either 'Male' or 'Female'
date_of_birth	date	Yes	Format: YYYY-MM-DD
marital_status	string	Yes	One of: 'Single', 'Married', 'Widowed', 'Divorced'
employment_status	string	Yes	Either 'Employed' or 'Unemployed'
retrenchment_date	date	No	Format: YYYY-MM-DD
disability	boolean	No	Whether the applicant has a disability, defaults to false

contact_info	string	No	Singapore number, 8 characters maximum, must be unique
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Address Fields

Field	Type	Required	Description
postal_code	string	Yes	Singapore Postal Code, 6 characters
unit_number	string	Yes	Max 10 characters
address_line_1	string	Yes	Max 100 characters
address_line_2	string	No	Additional optional field for address, max 100 characters

Household Member Fields

Field	Type	Required	Description
relationship_to_applicant	string	Yes	The household member's relationship to the applicant, one of: 'Spouse', 'Parent', 'Child', 'Grandparent', 'Grandchild', 'Sibling', 'Guardian', 'Ward'
nric	string	Yes	Same as above
name	string	Yes	Same as above
sex	string	No	Same as above
date_of_birth	date	Yes	Same as above
marital_status	string	Yes	Same as above
employment_status	string	Yes	Same as above
retrenchment_date	date	No	Same as above
disability	boolean	No	Same as above
contact_info	string	No	Same as above

Response

Code: 201 Created

```
json

{
  "applicant_id": "uuid",
  "nric": "string",
  "name": "string",
  "sex": "string",
```

```
"date_of_birth": "date",
"marital_status": "string",
"employment_status": "string",

"retrenchment_date": "date",
"disability": "boolean",
```

Code: 400 Bad Request

json

```
{
  "error": "A person with this ID already exists."
}
```

json

```
{
  "error": "Invalid address data: Postal code is required."
}
```

json

```
{
  "error": "Error handling household members: Relationship to applicant is required for household members"
}
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

json

```
{
  "nric": "S11111110",
  "name": "Charlie Wonka",
  "sex": "Male",
  "date_of_birth": "1920-01-01",
  "marital_status": "Married",
  "employment_status": "Unemployed",
  "retrenchment_date": null,
  "address": {
    "postal_code": "121212",
    "unit_number": "3",
    "address_line_1": "Hollywood",
    "address_line_2": ""
  },
  "contact_info": "12121212",
  "current_education": "not in education",
  "monthly_income": 500,
  "completed_national_service": true,
  "household_members": []
}
```

GET List Applicants

<http://localhost:5000/api/applicants>

Returns all applicants within the database, alongside their details.

Response

Code: 200 OK

json

```
[
  {list},
  {of},
  {applicants},
]
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 404 Not Found

json

```
{
  "detail": "Not found."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

PATCH Update Applicant

<http://localhost:5000/api/applicants/2215a9aa-af3d-46e3-8279-d647850c8a33/>

Updates an existing applicant.

Accepts the same fields as the create endpoint, allows partial updates.

Parameters

- `applicant` (required): The UUID of the applicant to update

Response

Code: 200 OK

json

```
{
  // updated applicants
}
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```


Code: 404 Not Found

```
json

{
  "detail": "No Applicant matches the given query."
}
```

Code: 500 Internal Server Error

```
json

{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

```
json

{
  "name": "Jamie Bull"
}
```

PUT Update Applicant

<http://localhost:5000/api/applicants/2215a9aa-af3d-46e3-8279-d647850c8a33/>

Updates an existing applicant.

Accepts the same fields as the create endpoint, requires ALL fields.

Parameters

- `applicant` (required): The UUID of the applicant to update

Response

Code: 200 OK

```
json
```

json

```
{  
  // updated applicants  
}
```

Code: 401 Unauthorized

json

```
{  
  "detail": "Authentication credentials were not provided."  
}
```

Code: 404 Not Found

json

```
{  
  "detail": "No Applicant matches the given query."  
}
```

Code: 500 Internal Server Error

json

```
{  
  "error": "An unexpected error occurred: [error details]"  
}
```

HEADERS

Authorization

Body raw (json)

json

```
{  
  "nric": "S122243I",  
  "name": "Jolly Bull",  
  "sex": "Female",  
  "date_of_birth": "1950-01-01",  
  "marital_status": "Married",  
  "employment_status": "Unemployed",  
  "retrenchment_date": null,  
  "address": {  
    "postal_code": "211222",  
    "unit_number": "1"
```

```

    "unit_number": "1",
    "address_line_1": "1 Main Rd",
    "address_line_2": ""
  },
  "contact_info": "81111499",
  "current_education": "not in education",
  "monthly_income": 500,
  "completed_national_service": false,
  "household_members": [
    {
      "nric": "T9111113I",
      "name": "Sally Bull",
      "sex": "Female",
      "date_of_birth": "2022-05-15",
      "marital_status": "Single",
      "employment_status": "Unemployed",
      "address": {
        "postal_code": "211222",
        "unit_number": "1",
        "address_line_1": "1 Main Rd",
        "address_line_2": ""
      }
    },
    {
      "contact_info": "23311119",
      "relationship_to_applicant": "Child",
      "current_education": "pre-primary",
      "monthly_income": 0,
      "completed_national_service": false
    }
  ]
}

```

DELETE Delete Applicant

<http://localhost:5000/api/applicants/562cb6e3-eb84-4d7d-9266-f281ea7ae34d/>

Deletes a specific applicant and their associated data from the applicant and household member table, NOT the people table.

Parameters

- `applicant` (required): The UUID of the applicant to delete

Code: 204 No Content

json

```

{
  "message": "Applicant successfully deleted."
}

```

Error Responses

Code: 400 Bad Request

json

```
{  
  "error": "Cannot delete applicant as they have related records."  
}
```

Code: 400 Bad Request

```
json  
  
{  
  "detail": "Authentication credentials were not provided."  
}
```

Code: 404 Not Found

```
json  
  
{  
  "detail": "No Applicant matches the given query."  
}
```

Code: 500 Internal Server Error

```
json  
  
{  
  "error": "An unexpected error occurred: [error details]"  
}
```

HEADERS

Authorization

POST Create Scheme

<http://localhost:5000/api/schemes/>

Creates a new scheme with associated eligibility criteria and benefits. A scheme_id will be created using Django AutoField.

Criterion Types and Evaluation

The eligibility criteria system compares the given criterion to the fields of the applicant to determine applicant eligibility. Each criterion consists of:

1. **criterion_type**: Maps to specific applicant attributes in the backend
 - a. Example types:
 - i. "age": Compares against applicant's age

ii. "income": Compares against applicant's monthly income

2. **criterion_value**: The threshold or reference value for comparison

a. Must be compatible with the criterion_type's expected format

b. Examples:

i. For age: "<19" (minimum age)

ii. For income: "<2001" (maximum monthly income)

3. **additional_conditions**: Reserved for future implementation of complex comparison logic

a. Currently not utilised

b. Intended for implementing complex comparisons (\geq , \leq) or custom validation rules

Currently Accepted Criterion Types

python

```
[
    "age",
    "marital_status",
    "sex",
    "employment_status",
    "current_education",
    "monthly_income",
    "completed_national_service",
    "disability",
    "household_member_relationship",
    "household member age",
```

Response

Code: 201 Created

json

```
[
    {
        "scheme_id": 1,
        "scheme_name": "Name",
        "description": "Scheme description",
        "eligibility_criteria": [...],
        "benefits": [...]
    }
]
```

Code: 400 Bad Request

json

```
{
    "error": "An error occurred while creating the scheme: [error details]"
}
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

HEADERS

Authorization

Body raw (json)

json

```
{
  "scheme_name": "Government-Paid Maternity Leave (GPML)",
  "description": "Provides up to 16 weeks of paid leave for eligible working mothers.",
  "eligibility_criteria": [
    {
      "criterion_type": "sex",
      "criterion_value": "Female",
      "additional_conditions": ""
    },
    {
      "criterion_type": "household_member_relationship",
      "criterion_value": "Child",
      "additional_conditions": ""
    },
    {
      "criterion_type": "employment_status",
      "criterion_value": "Employed",
      "additional_conditions": ""
    }
  ],
  "benefits": [
    {
      "benefit_type": "Paid Leave",
      "description": "16 weeks of paid maternity leave",
      "conditions": ""
    },
    {
      "benefit_type": "Shared Leave",
      "description": "Option to share up to 4 weeks of leave with spouse",
      "conditions": ""
    }
  ]
}
```

http://localhost:5000/api/schemes/

Retrieves a list of all available schemes with their associated eligibility criteria and benefits.

Response

Code: 200 OK

```
json

[
  {list},
  {of},
  {schemes},
]
```

Code: 401 Unauthorized

```
json

{
  "detail": "Authentication credentials were not provided."
}
```

Code: 500 Internal Server Error

```
json

{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

GET Eligible Schemes (for applicant)

http://localhost:5000/api/schemes/eligible?applicant=2f26383c-3f8a-495a-9d89-93692422d623

List the eligible schemes for a specific applicant, based on the schemes that he or she qualifies for.

Parameters

- `applicant` (required): The UUID of the applicant to check eligibility for

Response

Code: 200 OK

json

```
[
  {list},
  {of},
  {eligible},
  {schemes},
]
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 404 Not Found

json

```
{
  "detail": "No Applicant matches the given query."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

PARAMS

applicant

2f26383c-3f8a-495a-9d89-93692422d623

PATCH Update Scheme

<http://localhost:5000/api/schemes/8/>

http://localhost:3000/api/schemes/0/

Updates an existing application.

Accepts the same fields as the create endpoint, allows partial updates.

Parameters

- `applicant` (required): The UUID of the applicant to update

Code: 200 OK

json

```
{
  // updated application
}
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 404 Not Found

json

```
{
  "detail": "No Scheme matches the given query."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

ison

```
json

{
  "scheme_name": "Government-Paid Paternity Leave (GPML)",
  "description": "Provides up to 4 weeks of paid leave for eligible working fathers.",
  "eligibility_criteria": [
    {
      "criterion_type": "sex",
      "criterion_value": "Male",
      "additional_conditions": ""
    },
    {
      "criterion_type": "household_member_relationship",
      "criterion_value": "Child",
      "additional_conditions": ""
    },
    {
      "criterion_type": "employment_status",
      "criterion_value": "Employed",
      "additional_conditions": ""
    }
  ],
  "benefits": [
    {
      "benefit_type": "Paid Leave",
      "description": "4 weeks of paid maternity leave",
      "conditions": ""
    },
    {
      "benefit_type": "Shared Leave",
      "description": "Option to share up to 4 weeks of leave with spouse",
      "conditions": ""
    }
  ]
}
```

DELETE Delete Scheme

<http://localhost:5000/api/schemes/7/>

Deletes a specific scheme and its associated data.

Code: 204 No Content

json

```
{
  "message": "Application successfully deleted."
}
```

Error Responses

Code: 400 Bad Request

json

```
{  
  "error": "Cannot delete application as they have related records."  
}
```

Code: 400 Bad Request

json

```
{  
  "detail": "Authentication credentials were not provided."  
}
```

Code: 404 Not Found

json

```
{  
  "detail": "No Scheme matches the given query."  
}
```

Code: 500 Internal Server Error

json

```
{  
  "error": "An unexpected error occurred: [error details]"  
}
```

HEADERS

Authorization

POST Create Applications

<http://localhost:5000/api/applications/>

Create a new application using an applicant's applicant_id, and the relevant scheme_ids. An application ID will automatically be generated using UUID.

Response

Code: 201 Created

json

```
{
  "id": "uuid",

  "applicant": {
    "applicant_id": "uuid",
    "details": "...",
  },
  "application_status": "...",
  "remarks": "...",
  "schemes": [
    {
```

Code: 400 Bad Request

json

```
{
  "error": "Invalid applicant ID."
}
```

json

```
{
  "error": "At least one scheme must be provided."
}
```

json

```
{
  "error": "One or more provided scheme IDs are invalid."
}
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

json

```
{
  "applicant_id": "2215a9aa-af3d-46e3-8279-d647850c8a33",
  "application_status": "Pending",
  "remarks": "Rejected multiple times",
  "schemes": [1]
}
```

GET List Applications

<http://localhost:5000/api/applications/>

Returns all applications within the database, alongside their details.

Response

Code: 200 OK

json

```
[
  {list},
  {of},
  {applications},
]
```

Code: 401 Unauthorized

json

```
{
  "detail": "Authentication credentials were not provided."
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

GET List Applications (for applicant)

`http://localhost:5000/api/applications/applicant/?applicant=2f26383c-3f8a-495a-9d89-93692422d623`

Returns all applications within the database associated with the applicant queried, alongside their details.

Parameters

- `applicant` (required): The UUID of the applicant to check for relevant applications

Response

Code: 200 OK

```
json

[
  {list},
  {of},
  {applications},
]
```

Code: 401 Unauthorized

```
json

{
  "detail": "Authentication credentials were not provided."
}
```

Code: 404 Not Found

```
json

{
  "detail": "No Applicant matches the given query."
}
```

Code: 500 Internal Server Error

```
json

{
  "error": "An unexpected error occurred: [error details]"
}
```

```
{
```

HEADERS

Authorization

PARAMS

applicant	2f26383c-3f8a-495a-9d89-93692422d623
-----------	--------------------------------------

PATCH Update Application

`http://localhost:5000/api/applications/5a09bec3-6237-480a-b707-9096be45898b/`

Updates an existing application.

Accepts the same fields as the create endpoint, allows partial updates.

Parameters

- `application` (required): The UUID of the application to update

Code: 200 OK

json

```
{  
  // updated application  
}
```

Code: 401 Unauthorized

json

```
{  
  "detail": "Authentication credentials were not provided."  
}
```

Code: 404 Not Found

json

```
{  
  "detail": "No Application matches the given query."  
}
```

Code: 500 Internal Server Error

json

```
{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

json

```
{
  "applicant_id": "be92c248-31ca-4c23-9145-93be998144fd",
  "application_status": "Pending",
  "remarks": "Wrong scheme applied",
  "schemes": [1, 3]
}
```

DELETE Delete Application

<http://localhost:5000/api/applications/6bc45d49-1a36-4cee-abd4-e26b56bd622c/>

Deletes a specific application and its associated data.

Parameters

- `application` (required): The UUID of the application to delete

Code: 204 No Content

json

```
{
  "message": "Application successfully deleted."
}
```

Error Responses

Code: 400 Bad Request

json


```
json

{
  "error": "Cannot delete application as they have related records."
}
```

Code: 400 Bad Request

```
json

{
  "detail": "Authentication credentials were not provided."
}
```

Code: 404 Not Found

```
json

{
  "detail": "No Application matches the given query."
}
```

Code: 500 Internal Server Error

```
json

{
  "error": "An unexpected error occurred: [error details]"
}
```

HEADERS

Authorization

Body raw (json)

```
json

{
  "applicant_id": "be92c248-31ca-4c23-9145-93be998144fd",
  "application_status": "Pending",
  "remarks": "single scheme applied",
  "schemes": [1]
}
```