

# Intelligent Sri Lanka IRD Tax Intelligence & Compliance Assistant


## API Documentation

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### 1. Overview

The **IRD Tax Intelligence API** provides a secure, document-grounded interface for querying Sri Lanka Inland Revenue Department (IRD) tax information.

*This API is part of the Intelligent Sri Lanka IRD Tax Intelligence & Compliance Assistant project.*

 **Important Guarantee** All answers are generated **strictly from IRD-published PDF documents**. The system **does not guess, does not hallucinate**, and **does not use external knowledge**.

If information is unavailable or ambiguous, the API clearly informs the user.

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### 2. Base URL

```
http://127.0.0.1:8000
```

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### 3. Authentication

No authentication is required (local academic prototype).

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### 4. API Endpoints

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#### ◇ 4.1 Upload IRD Documents

##### Endpoint

```
POST /upload
```

##### Purpose

Upload one or more **official IRD PDF documents** and automatically rebuild:

- Text extraction
  - Chunking
  - Vector embeddings
  - FAISS index
-

Request

**Content-Type:** multipart/form-data

Field	Type	Description
files	File[]	One or more IRD PDF files

Example (Swagger / Postman)

Upload:

```
PN_IT_2025-01.pdf
SET_25_26_Detail_Guide_E.pdf
```

Response (200 OK)

```
{
  "message": "Uploaded and rebuilt index successfully",
  "files": [
    "PN_IT_2025-01.pdf",
    "SET_25_26_Detail_Guide_E.pdf"
  ]
}
```

Possible Errors

Status	Meaning
400	File is not a PDF
500	Index rebuild failed

◇ 4.2 Query Tax Information

Endpoint

```
POST /query
```

Purpose

Ask tax-related questions using IRD documents only.

The API automatically:

- 1. Retrieves relevant document sections
- 2. Applies guardrails
- 3. Generates a safe answer
- 4. Adds citations
- 5. Appends a mandatory disclaimer

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### Request Body

```
{
  "question": "What is the personal relief for 2025/2026?",
  "top_k": 5,
  "use_llm": true
}
```

Field	Type	Description
question	string	User tax question
top_k	number	Number of chunks to retrieve
use_llm	boolean	Enable LLM answering (optional)

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### Response Structure

```
{
  "answer": "...",
  "sources": [],
  "status": "ok",
  "used_llm": true
}
```

Field	Description
answer	Final response text
sources	List of cited documents
status	ok / missing / ambiguous
used_llm	Whether LLM was used

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## 5. Example Scenarios

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- ☒ Example 1: Valid Question

## Request

```
{
  "question": "What is the personal relief for 2025/2026?"
}
```

## Response

```
{
  "answer": "Personal Relief for the year of assessment 2025/2026 is Rs. 1,800,000.",
  "sources": [
    {
      "document": "PN_IT_2025-01_26032025_E.pdf",
      "page_range": [1],
      "section": "PN/IT/2025-01"
    }
  ],
  "status": "ok",
  "used_llm": true
}
```

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## ✗ Example 2: Missing Information

### Request

```
{
  "question": "What is the VAT rate for 2025?"
}
```

### Response

```
{
  "answer": "This information is not available in the provided IRD documents.\n\nThis response is based solely on IRD-published documents and is not professional tax advice.",
  "sources": [],
  "status": "missing",
  "used_llm": false
}
```

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## ⚠ Example 3: Ambiguous Question

Request

```
{
  "question": "What is the tax rate?"
}
```

Response

```
{
  "answer": "Your question may be ambiguous. Do you mean Personal Income Tax (PIT), Corporate Income Tax (CIT), or SET instructions? Please specify the tax type and year of assessment.",
  "sources": [],
  "status": "ambiguous",
  "used_llm": false
}
```

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## 6. Guardrails & Safety

The API enforces **three critical guardrails**:

Condition	Behavior
Missing info	Returns “Not available”
Ambiguous query	Requests clarification
Low confidence	Refuses to answer

This guarantees **zero hallucination**.

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## 7. Disclaime

Every response automatically ends with:

“This response is based solely on IRD-published documents and is not professional tax advice.”

This is enforced at code level.

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## 8. Testing the API

Swagger UI

```
http://127.0.0.1:8000/docs
```

## CLI Testing

```
python -m llm.answer_with_llm
```

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## 9. Limitations

- Only IRD PDFs are used
  - No external tax knowledge
  - LLM runs locally (Ollama)
  - Not a replacement for a tax professional
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## 10. Version

**API Version:** 1.0.0 **Project Type:** Academic / Research Prototype

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