

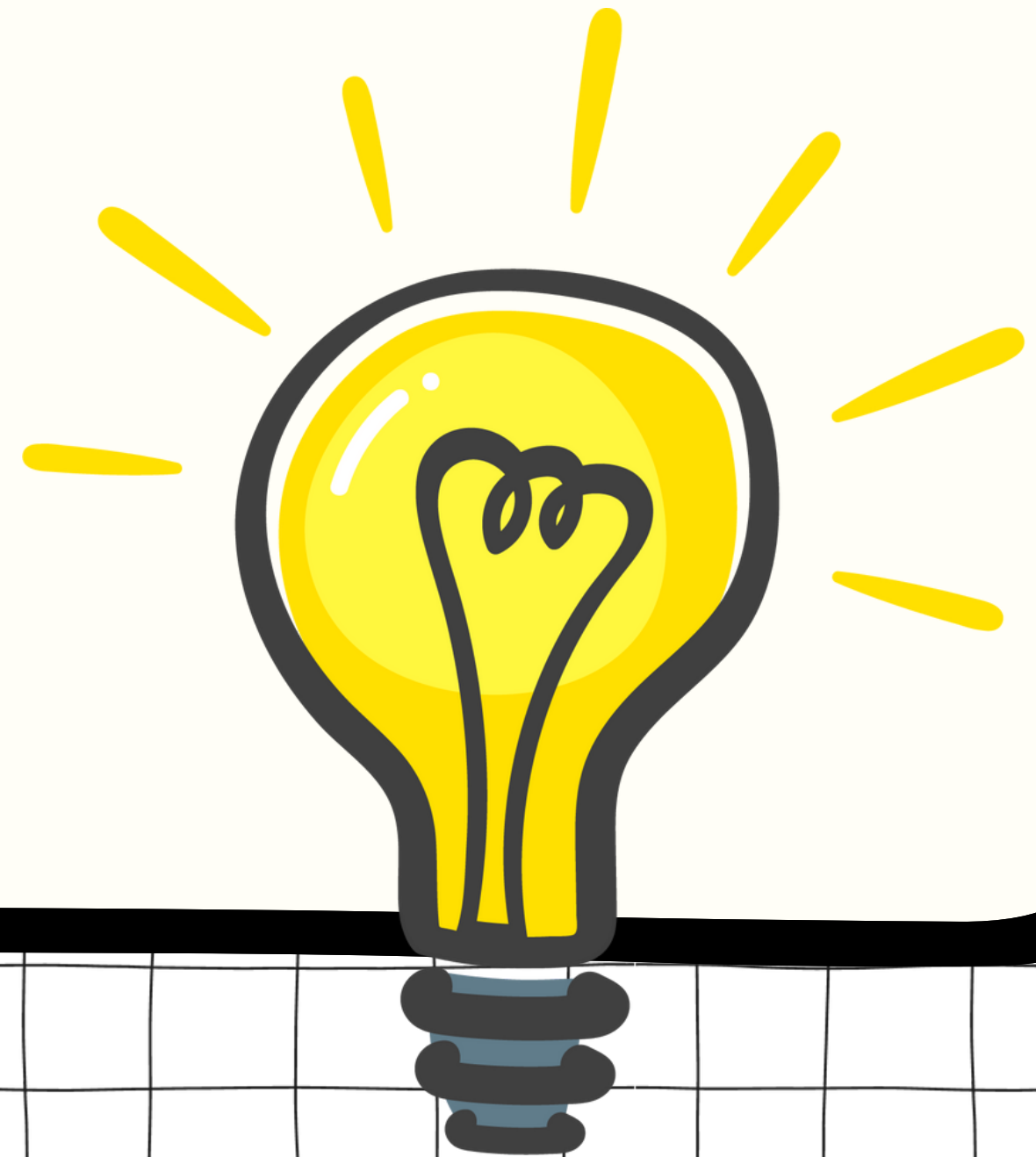


Hackathon Solution

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FAF-202

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Human Trafficking Risk Evaluation System

Purpose of the system:

Evaluate human trafficking risk using an expert system and topic modeling

Technology stack:

Flask: Web framework for serving the system

Gensim: Library for topic modeling and text processing

Components

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graph TD; Components[Components] --> Flask[Flask Web Application]; Components --> LDA[LDA Model Training]; Components --> Expert[Expert System for Risk Evaluation]; Components --> Data[Region Data, Training Data, and User Data];
```

Flask Web Application

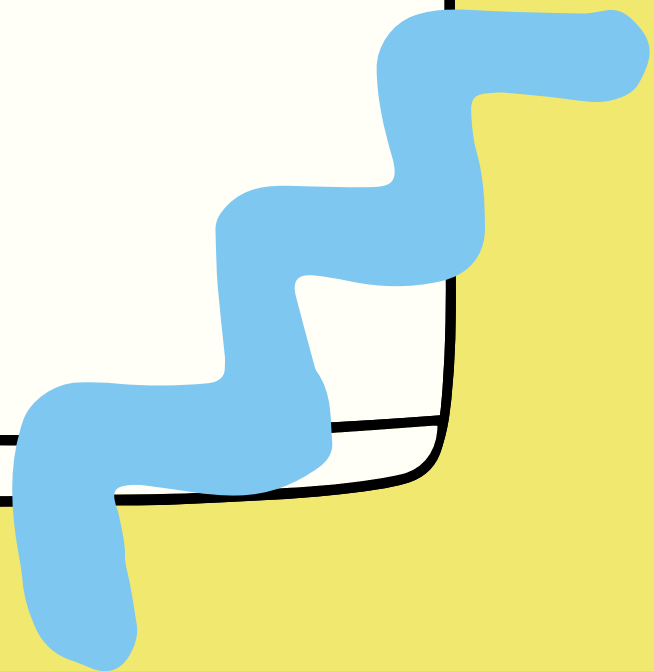
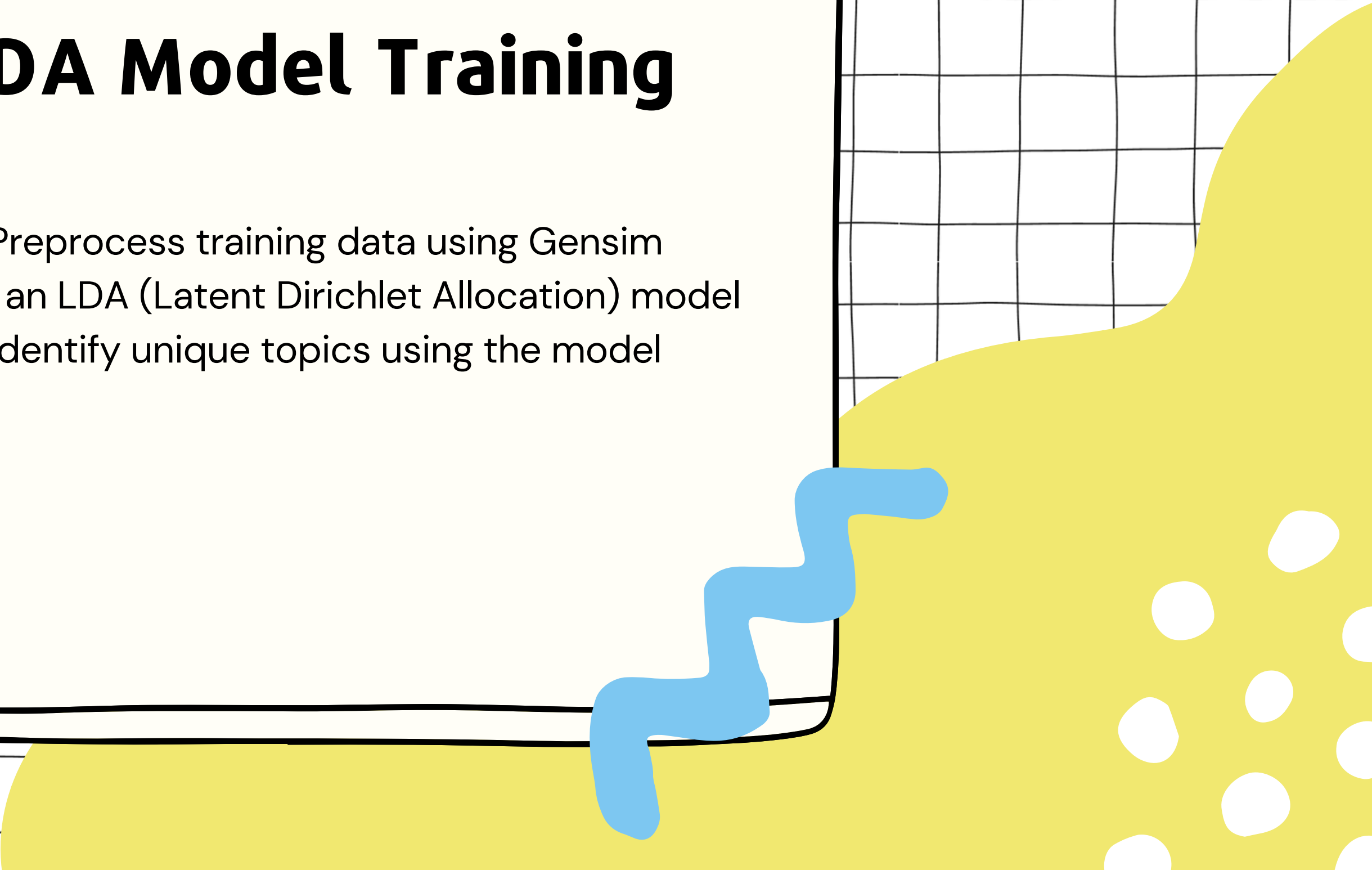
LDA Model Training

Expert System for Risk
Evaluation

Region Data, Training Data,
and User Data

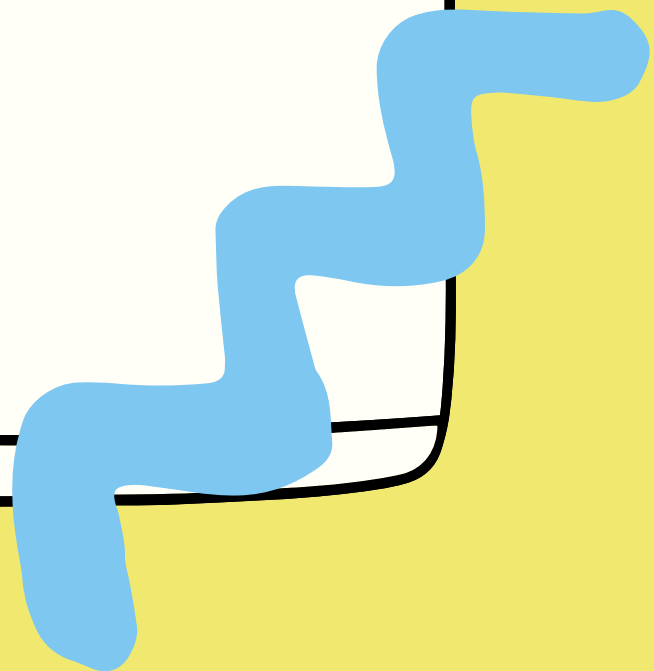
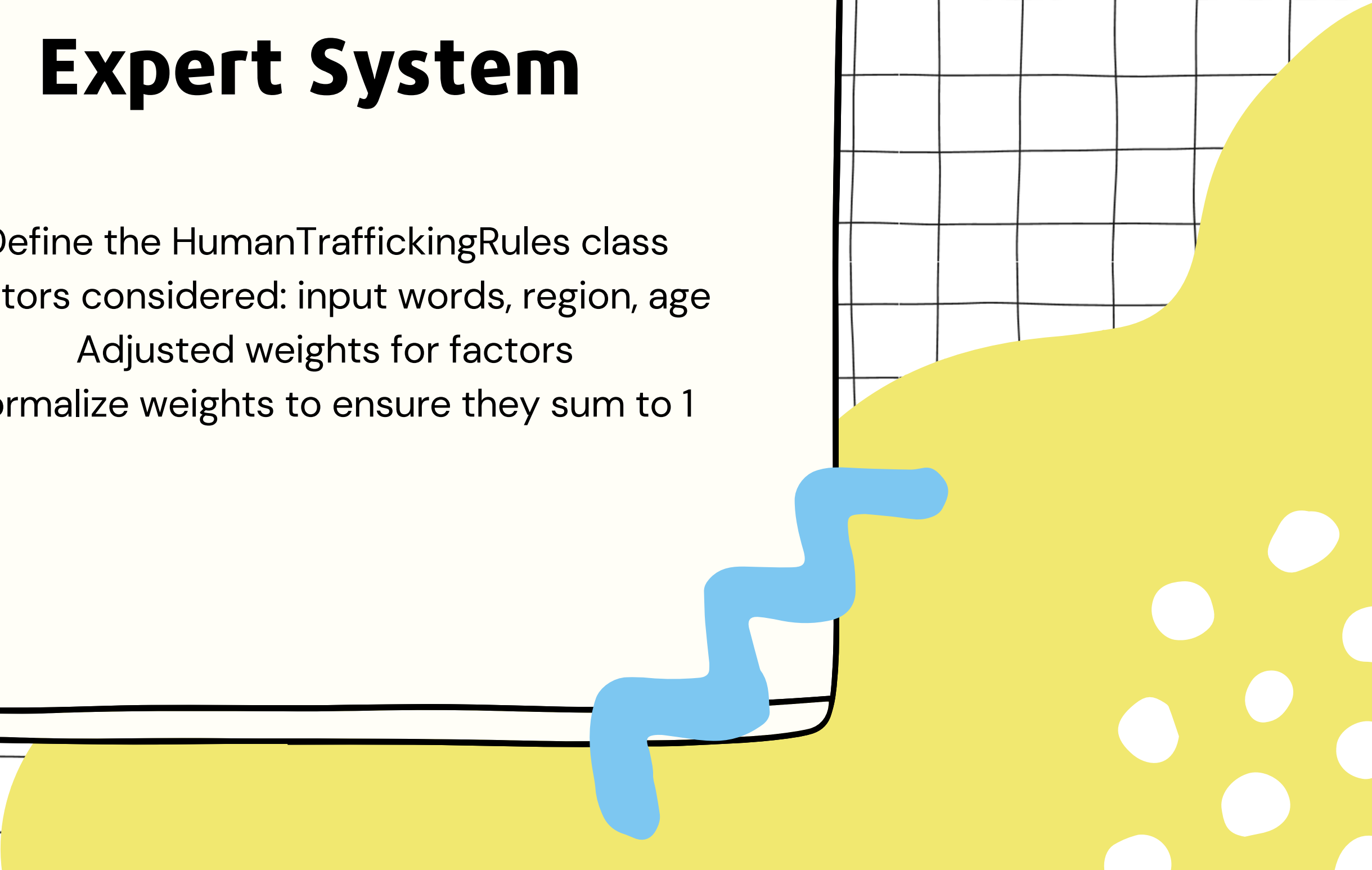


LDA Model Training

- Preprocess training data using Gensim
 - Train an LDA (Latent Dirichlet Allocation) model
 - Identify unique topics using the model
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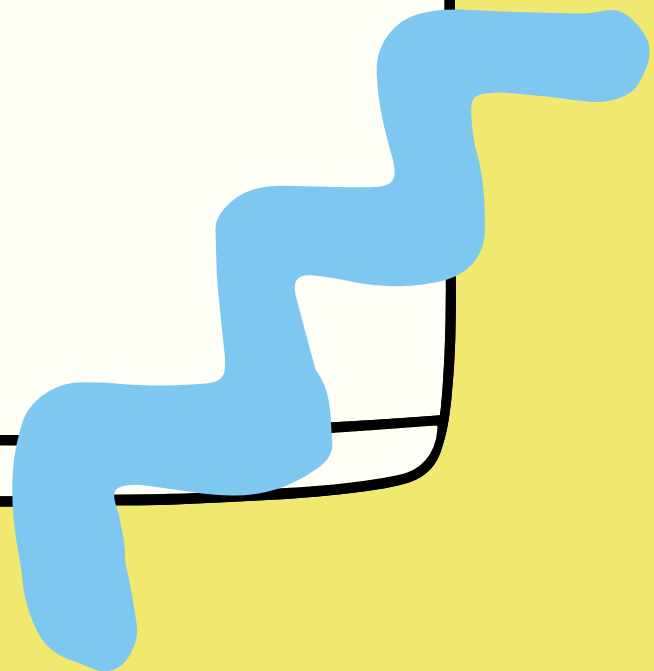


Expert System

- Define the HumanTraffickingRules class
 - Factors considered: input words, region, age
 - Adjusted weights for factors
 - Normalize weights to ensure they sum to 1
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Risk Evaluation Process

- Evaluate risk for each user using the expert system
 - Categorize risk levels: Low, Medium, High
 - Update region probabilities based on user input
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Results

- Display identified topics from the LDA model
- Present risk levels and probabilities for each user
- Show updated region probabilities



Thank you