IT314 - Software Engineering

Prof : Saurabh Tiwari

Group 9 : Pull Panda

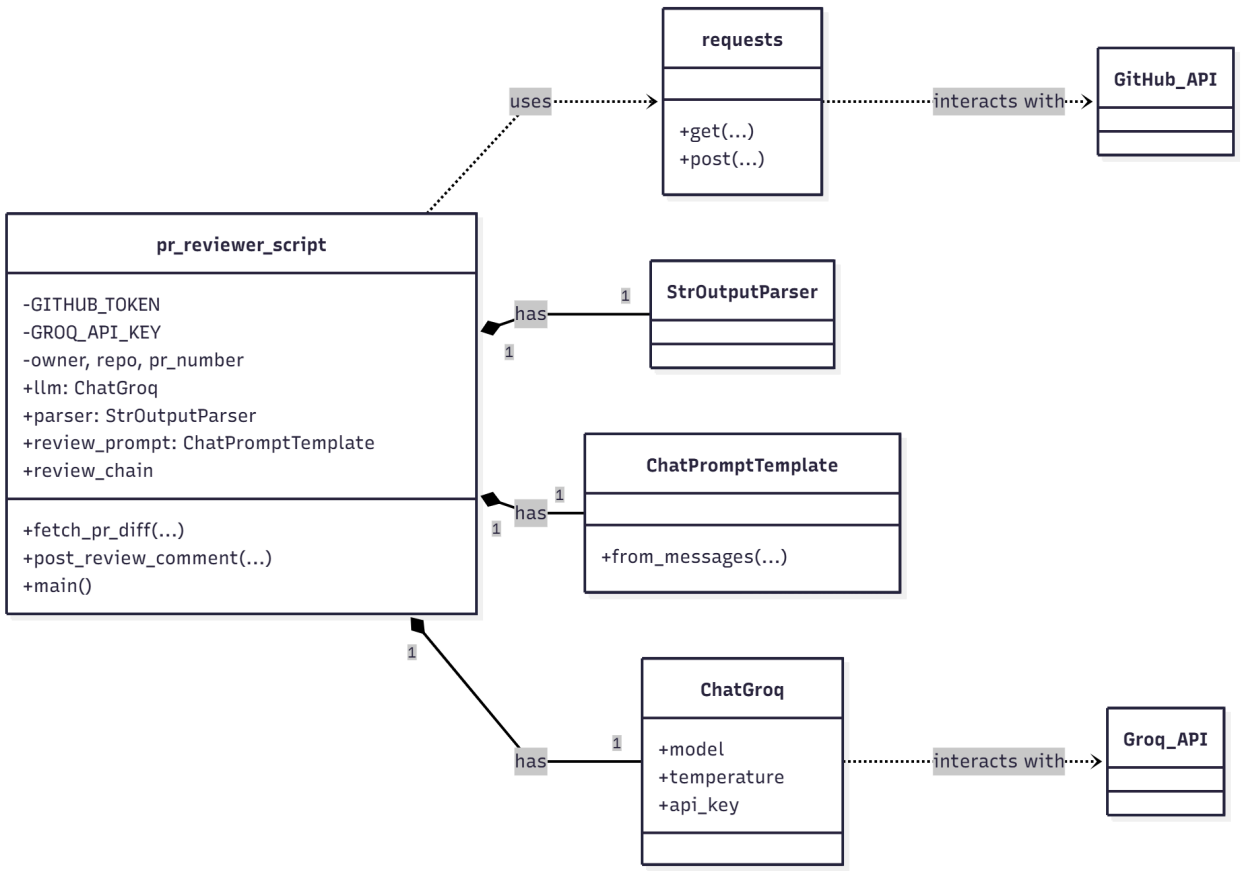
(AI-powered Pull Request Reviewer)

Design Document

Class diagrams

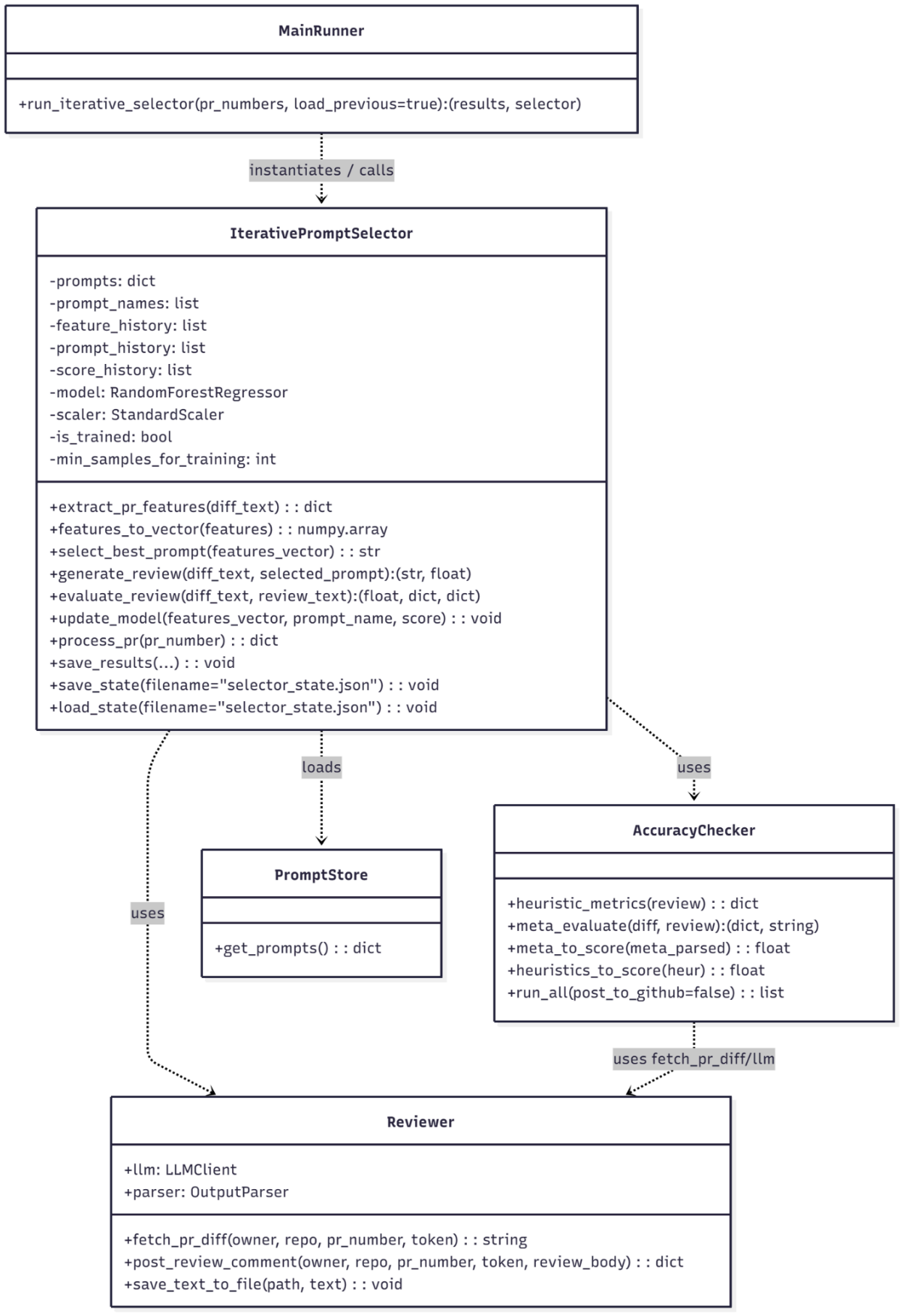
Sprint 1

(version_1)

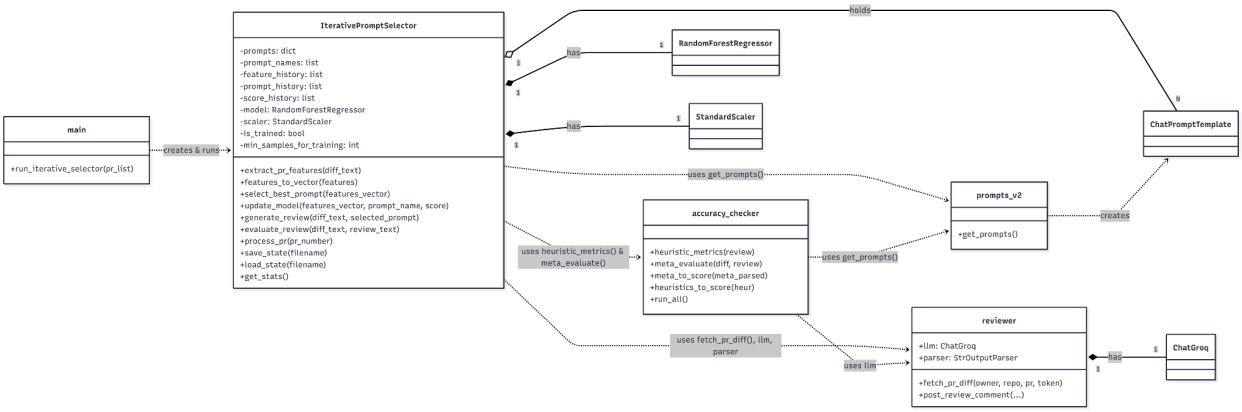


Sprint 2

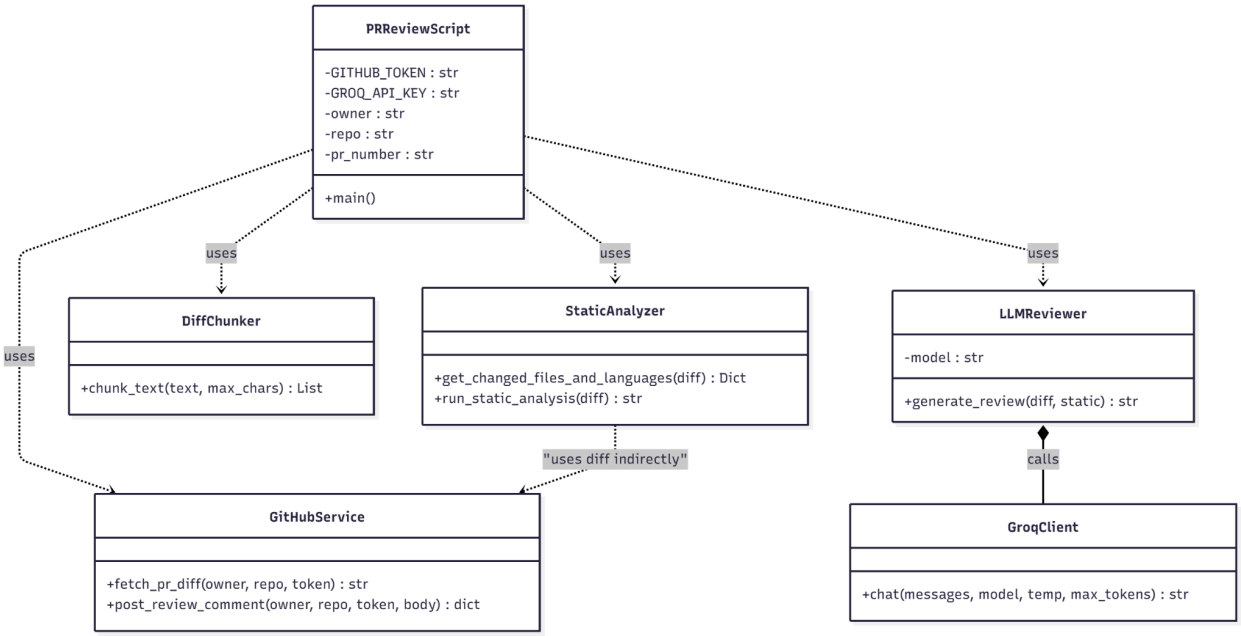
(version_1.1)


MainRunner
+run_iterative_selector(pr_numbers, load_previous=true):(results, selector)
instantiates / calls
IterativePromptSelector
-prompts: dict
-prompt_names: list
-feature_history: list
-prompt_history: list
-score_history: list
-model: RandomForestRegressor
-scaler: StandardScaler
-is_trained: bool
-min_samples_for_training: int
+extract_pr_features(diff_text) : : dict
+features_to_vector(features) : : numpy.array
+select_best_prompt(features_vector) : : str
+generate_review(diff_text, selected_prompt):(str, float)
+evaluate_review(diff_text, review_text):(float, dict, dict)
+update_model(features_vector, prompt_name, score) : : void
+process_pr(pr_number) : : dict
+save_results(...) : : void
+save_state(filename="selector_state.json") : : void
+load_state(filename="selector_state.json") : : void
loads
uses
uses
PromptStore
+get_prompts() : : dict
AccuracyChecker
+heuristic_metrics(review) : : dict
+meta_evaluate(diff, review):(dict, string)
+meta_to_score(meta_parsed) : : float
+heuristics_to_score(heur) : : float
+run_all(post_to_github=false) : : list
uses fetch_pr_diff/llm
Reviewer
+llm: LLMClient
+parser: OutputParser
+fetch_pr_diff(owner, repo, pr_number, token) : : string
+post_review_comment(owner, repo, pr_number, token, review_body) : : dict
+save_text_to_file(path, text) : : void

(version_1.2)

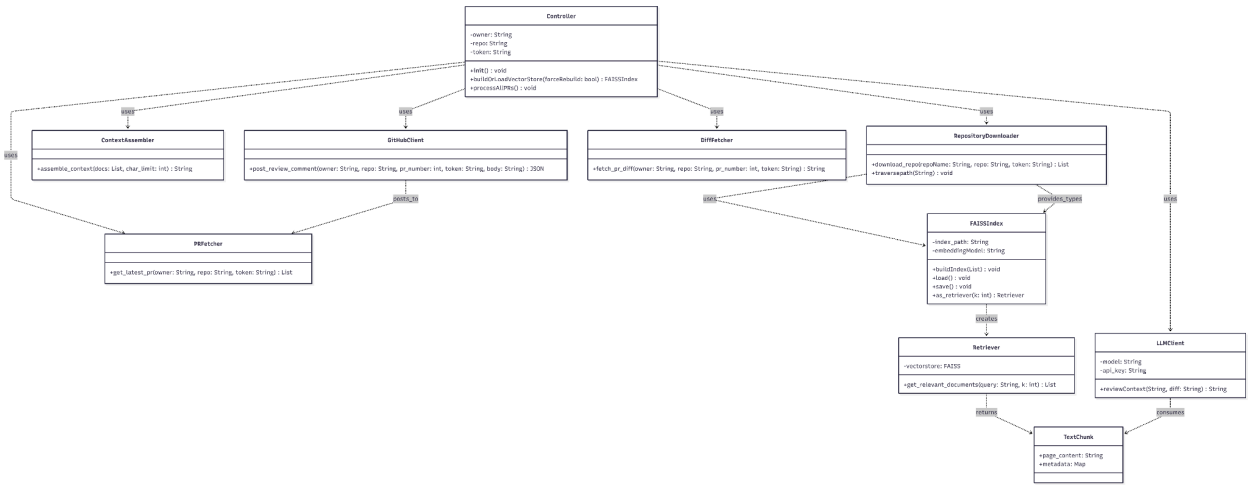

main
+run_iterative_selector(pr_list)
creates & runs
IterativePromptSelector
-prompts: dict
-prompt_names: list
-feature_history: list
-prompt_history: list
-score_history: list
-model: RandomForestRegressor
-scaler: StandardScaler
-is_trained: bool
-min_samples_for_training: int
+extract_pr_features(diff_text)
+features_to_vector(features)
+select_best_prompt(features_vector)
+update_model(features_vector, prompt_name, score)
+generate_review(diff_text, selected_prompt)
+evaluate_review(diff_text, review_text)
+process_pr(pr_number)
+save_state(filename)
+load_state(filename)
+get_stats()
holds
has
RandomForestRegressor
has
StandardScaler
ChatPromptTemplate
uses get_prompts()
prompts_v2
+get_prompts()
creates
uses heuristic_metrics() & meta_evaluate()
accuracy_checker
+heuristic_metrics(review)
+meta_evaluate(diff, review)
+meta_to_score(meta_parsed)
+heuristics_to_score(heur)
+run_all()
uses get_prompts()
uses fetch_pr_diff(), llm, parser
uses llm
reviewer
+llm: ChatGroq
+parser: StrOutputParser
+fetch_pr_diff(owner, repo, pr, token)
+post_review_comment(...)
has
ChatGroq

(version_2)


PRReviewScript
-GITHUB_TOKEN : str
-GROQ_API_KEY : str
-owner : str
-repo : str
-pr_number : str
+main()
uses
uses
uses
uses
DiffChunker
+chunk_text(text, max_chars) : List
StaticAnalyzer
+get_changed_files_and_languages(diff) : Dict
+run_static_analysis(diff) : str
LLMReviewer
-model : str
+generate_review(diff, static) : str
"uses diff indirectly"
calls
GitHubService
+fetch_pr_diff(owner, repo, token) : str
+post_review_comment(owner, repo, token, body) : dict
GroqClient
+chat(messages, model, temp, max_tokens) : str

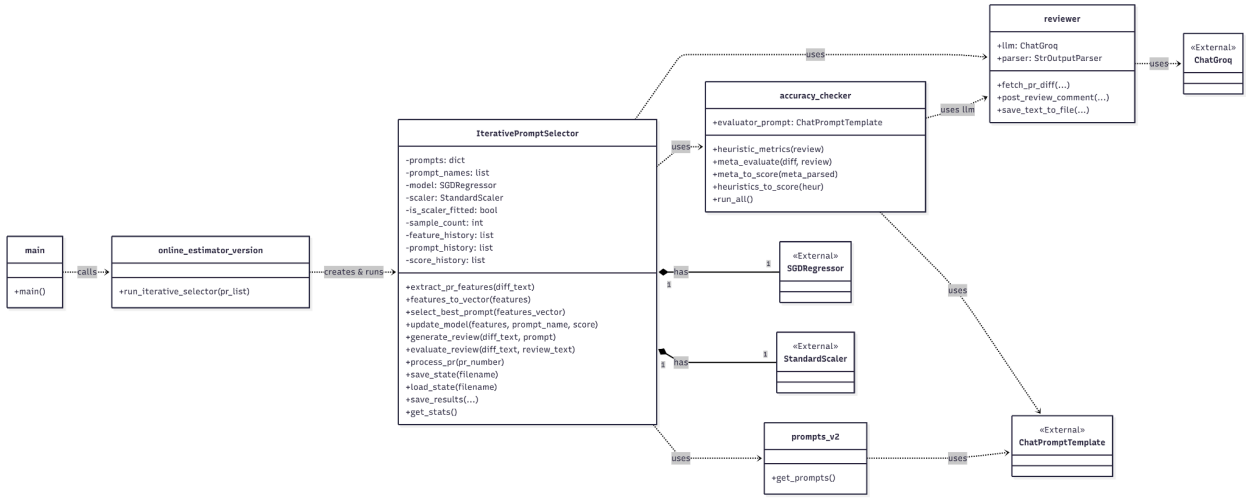
Sprint 3

(version_1_traditional _rag)

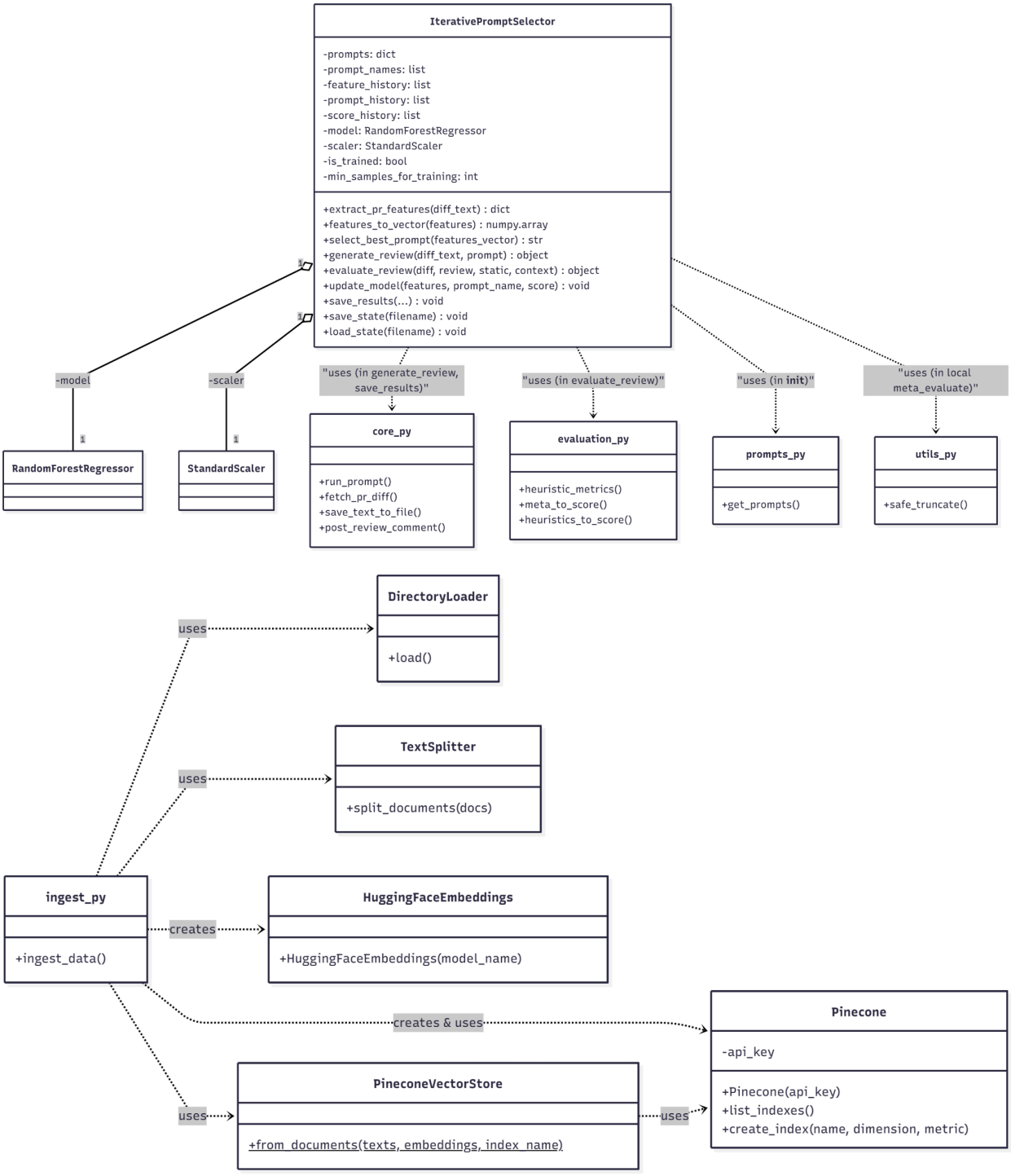


Sprint 4

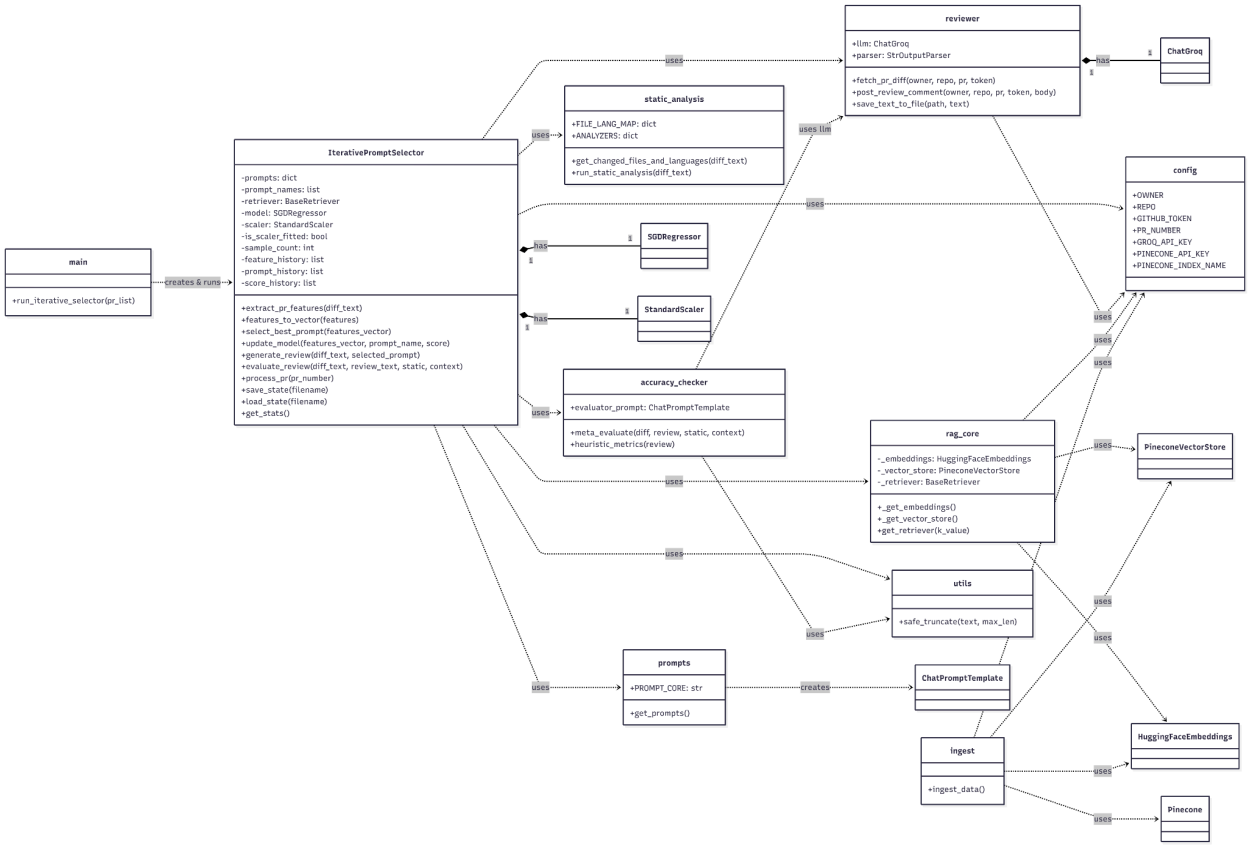
(version_1.3)

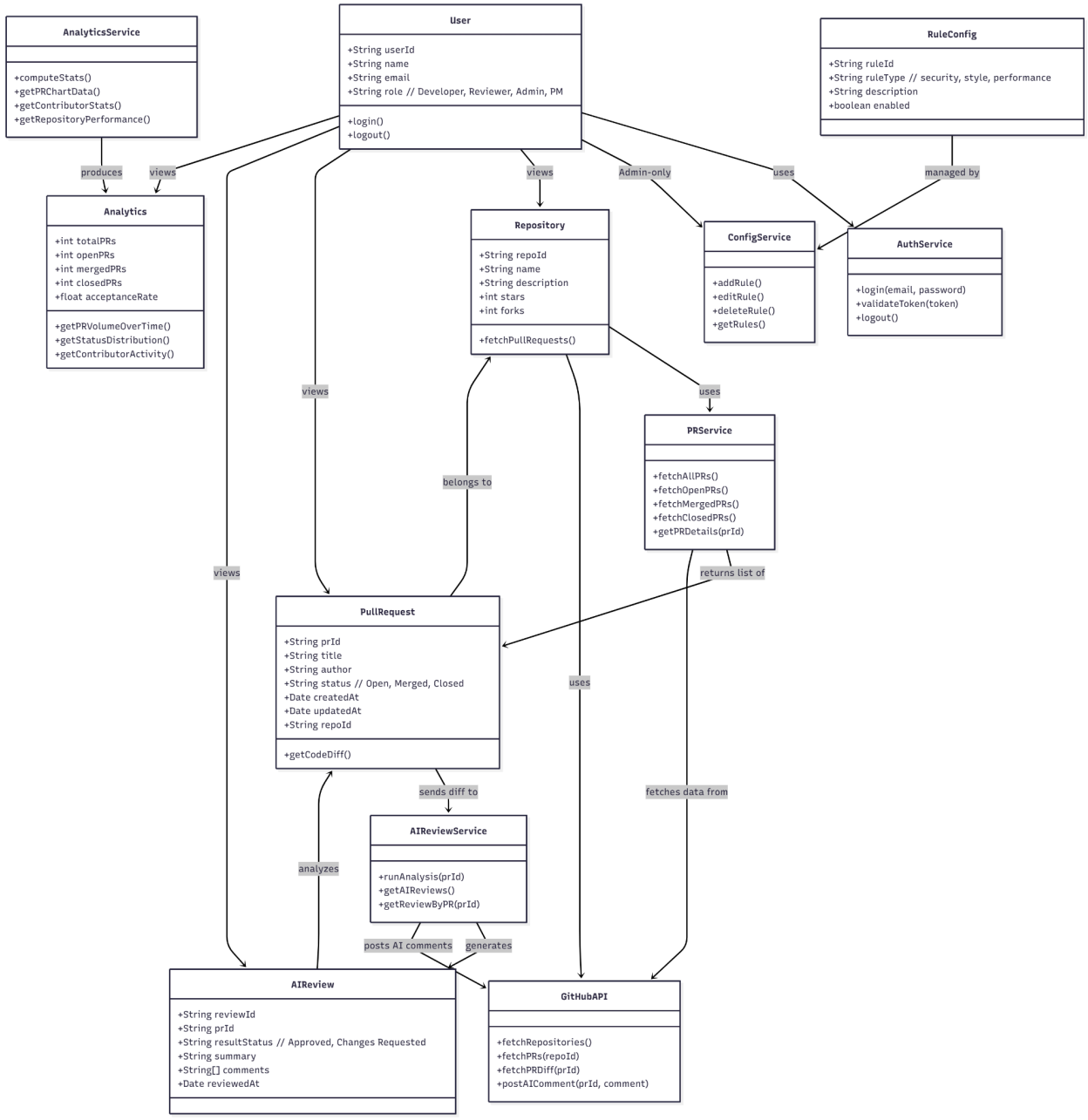


(Version_1.2_rag)



(version_1.3_rag)



Sprint 5

(Dashboard)