



This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# SPRING AI

## GENERATIVE ARTIFICIAL INTELLIGENCE CON JAVA

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Corso avanzato per Venis S.p.A, Venezia, Italia

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### Note

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general writing. There are no margins, text, or other markings on the paper.



## PARTE 3 - APPROCCIO RAG ADVISOR

### Note

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[illegible]

```
package it.venis.ai.spring.demo.config;

...

@Configuration
public class RAGConfig {

    ...

    @Bean
    RetrievalAugmentationAdvisor geminiRetrievalAugmentationAdvisor(
        @Qualifier("geminiVectorStore") VectorStore geminiVectorStore) {

        return RetrievalAugmentationAdvisor.builder()
            .documentRetriever(
                VectorStoreDocumentRetriever.builder()
                    .vectorStore(geminiVectorStore)
                    .topK(4)
                    .similarityThreshold(.2)
                    .build())
            .build();
    }
}
```

[illegible]

```
package it.venis.ai.spring.demo.Services;

...

@Service
@Configuration
public class RAGServiceImpl implements RAGService {

    ...

    private RetrievalAugmentationAdvisor geminiRetrievalAugmentationAdvisor;

    public RAGServiceImpl(
        @Qualifier("geminiChatClient") ChatClient geminiChatClient,
        @Qualifier("ollamaChatClient") ChatClient ollamaChatClient,
        @Qualifier("ollamaMemoryChatClient") ChatClient ollamaMemoryChatClient,
        @Qualifier("geminiVectorStore") VectorStore geminiVectorStore,
        @Qualifier("ollamaVectorStore") VectorStore ollamaVectorStore,
        @Qualifier("geminiRetrievalAugmentationAdvisor") RetrievalAugmentationAdvisor geminiRetrievalAugmentationAdvisor) {

        this.geminiChatClient = geminiChatClient;
        this.ollamaChatClient = ollamaChatClient;
        this.ollamaMemoryChatClient = ollamaMemoryChatClient;
        this.geminiVectorStore = geminiVectorStore;
        this.ollamaVectorStore = ollamaVectorStore;
        this.geminiRetrievalAugmentationAdvisor = geminiRetrievalAugmentationAdvisor;
    }

    @Value("${demo.rag.prompt.system.eng}")
    private Resource ragDataSystemEngPrompt;

    ...
}
```

[illegible]

## Implementazione servizio - II

```

@Override
public Answer getGeminiRAGAnswer(QuestionRequest request) {
    /*
     * This code is no longer needed, because all is handled by the logic behind the
     * geminiRetrievalAugmentationAdvisor!
     */
    SearchRequest searchRequest = SearchRequest.builder()
        .query(request.body().question())
        .topK(4)
        .similarityThreshold(.2)
        .build();

    List<Document> similarDocs =
        geminiVectorStore.similaritySearch(searchRequest);

    String similarDocsString = similarDocs.stream()
        .map(Document::getText)
        .collect(Collectors.joining(System.lineSeparator()));
}
...

```

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## Implementazione servizio - III

```

...
return new Answer(this.geminiChatClient.prompt()
    .advisors(List.of(new SimpleLoggerAdvisor(), geminiRetrievalAugmentationAdvisor))
    /*
     * The geminiRetrievalAugmentationAdvisor takes also care to create
     * a dedicated system prompt to handle the RAG strategy!
     *
     * .system(s -> s.text(this.ragDataSystemEngPrompt)
     * .params(Map.of("documenti", similarDocsString)))
     */
    .user(request.body().question()))
    /*
     * The template rendered is now useless, since the system prompt is
     * automatically created!
     *
     * .templateRenderer(StTemplateRenderer.builder().startDelimiterToken('<')
     * .endDelimiterToken('>')
     * .build())
     */
    .call()
    .content());
}
...
}

```

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**Branch:** 9-spring-ai-gemini-ollama-rag-advisor

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