

LONG PARAMETER LIST

AUDIOREFENCE

```
package org.example.studymaterial;

import java.util.List;

public class AudioReference extends Reference { public enum AudioQuality { LOW, MEDIUM, HIGH, VERY_HIGH; } private AudioQuality audioQuality;

@Override
protected String getContentType() {
    return "AUDIO";
}

public AudioReference(AudioQuality quality){
    this.audioQuality = quality;
}

public AudioQuality getAudioQuality() {
    return audioQuality;
}

public static AudioQuality audioQualityAdapter(String quality){
    return switch (quality.toLowerCase()) {
        case "low" -> AudioQuality.LOW;
        case "medium" -> AudioQuality.MEDIUM;
        case "high" -> AudioQuality.HIGH;
        case "very_high" -> AudioQuality.VERY_HIGH;
        default -> null;
    };
}

public void setAudioQuality(AudioQuality audioQuality) {
    this.audioQuality = audioQuality;
}

public void editAudio(AudioQuality audioQuality, boolean isDownloadable, String title, String descripti
    editBasic(title, description, link);
    this.setAccessRights(accessRights);
    this.setLicense(license);
    this.setAudioQuality(audioQuality);
    editVideoAttributes(rating, language, viewCount, shareCount, isDownloadable);
}

public void editAudioAdapter(List<String> properties, List<Integer> intProperties, AudioQuality audioQu
    this.editAudio(audioQuality, isDownloadable, properties.get(0), properties.get(1), properties.get(2
}

private void editVideoAttributes(int rating, String language, int viewCount, int shareCount,boolean isD
    this.setRating(rating);
    this.setShareCount(shareCount);
    ...
    ...
}

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```

```
        this.setViewCount(viewCount);
        this.setDownloadable(isDownloadable);
        this.setLanguage(language);
    }

    public void editBasic(String title, String description, String link){
        this.setTitle(title);
        this.setDescription(description);
        this.setLink(link);
    }

}
```

fix the long parameter list code smell using the builder pattern refactoring technique

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Vou ajudar a refatorar a classe AudioReference usando o Builder Pattern para resolver o problema de lista longa de parâmetros.

Plano:

1. Criar uma classe Builder interna
2. Mover todos os parâmetros para o Builder
3. Implementar métodos de construção encadeados
4. Modificar o método edit para usar o Builder

Implementação:

```
public class AudioReference extends Reference {
    public enum AudioQuality {
        LOW, MEDIUM, HIGH, VERY_HIGH;
    }
    private AudioQuality audioQuality;

    @Override
    protected String getContentType() {
        return "AUDIO";
    }

    public AudioReference(AudioQuality quality){
        this.audioQuality = quality;
    }

    // Builder interno
    public static class AudioBuilder {
        private AudioQuality audioQuality;
        private boolean isDownloadable;
        private String title;
```

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```
private String description;
private String link;
private String accessRights;
private String license;
private String language;
private int rating;
private int viewCount;
private int shareCount;

public AudioBuilder() {}

public AudioBuilder audioQuality(AudioQuality audioQuality) {
    this.audioQuality = audioQuality;
    return this;
}

public AudioBuilder downloadable(boolean isDownloadable) {
    this.isDownloadable = isDownloadable;
    return this;
}

public AudioBuilder title(String title) {
    this.title = title;
    return this;
}

public AudioBuilder description(String description) {
    this.description = description;
    return this;
}

public AudioBuilder link(String link) {
    this.link = link;
    return this;
}

public AudioBuilder accessRights(String accessRights) {
    this.accessRights = accessRights;
    return this;
}

public AudioBuilder license(String license) {
    this.license = license;
    return this;
}

public AudioBuilder language(String language) {
    this.language = language;
    return this;
}
```

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```
}

public AudioBuilder rating(int rating) {
    this.rating = rating;
    return this;
}

public AudioBuilder viewCount(int viewCount) {
    this.viewCount = viewCount;
    return this;
}

public AudioBuilder shareCount(int shareCount) {
    this.shareCount = shareCount;
    return this;
}

public void editAudio(AudioBuilder builder) {
    editBasic(builder.title, builder.description, builder.link);
    this.setAccessRights(builder.accessRights);
    this.setLicense(builder.license);
    this.setAudioQuality(builder.audioQuality);
    editVideoAttributes(builder.rating, builder.language, builder.viewCount,
        builder.shareCount, builder.isDownloadable);
}

public void editAudioAdapter(List<String> properties, List<Integer> intProperties,
    AudioQuality audioQuality, boolean isDownloadable) {
    AudioBuilder builder = new AudioBuilder()
        .audioQuality(audioQuality)
        .downloadable(isDownloadable)
        .title(properties.get(0))
        .description(properties.get(1))
        .link(properties.get(2))
        .accessRights(properties.get(3))
        .license(properties.get(4))
        .language(properties.get(5))
        .rating(intProperties.get(0))
        .viewCount(intProperties.get(1))
        .shareCount(intProperties.get(2));
}

private void editVideoAttributes(int rating, String language, int viewCount,
    int shareCount, boolean isDownloadable) {
    this.setRating(rating);
    this.setShareCount(shareCount);
```

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```

        this.setViewCount(viewCount);
        this.setDownloadable(isDownloadable);
        this.setLanguage(language);
    }

    public void editBasic(String title, String description, String link) {
        this.setTitle(title);
        this.setDescription(description);
        this.setLink(link);
    }

    // Getters e Setters existentes
    public AudioQuality getAudioQuality() {
        return audioQuality;
    }

    public void setAudioQuality(AudioQuality audioQuality) {
        this.audioQuality = audioQuality;
    }

    public static AudioQuality audioQualityAdapter(String quality) {
        return switch (quality.toLowerCase()) {
            case "low" -> AudioQuality.LOW;
            case "medium" -> AudioQuality.MEDIUM;
            case "high" -> AudioQuality.HIGH;
            case "very_high" -> AudioQuality.VERY_HIGH;
            default -> null;
        };
    }
}

```

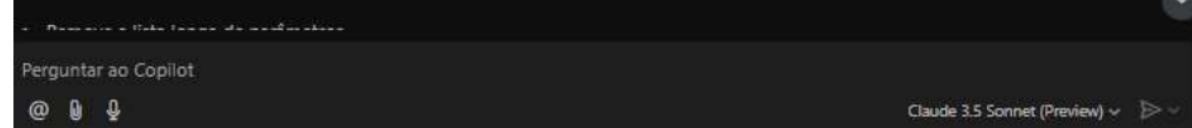
Agora você pode usar o Builder assim:

```

audioReference.editAudio(new AudioReference.AudioBuilder()
    .audioQuality(AudioQuality.HIGH)
    .downloadable(true)
    .title("Título")
    .description("Descrição")
    .link("http://example.com")
    .accessRights("public")
    .license("MIT")
    .language("pt-BR")
    .rating(5)
    .viewCount(100)
    .shareCount(50));

```

Esta refatoração:



- Remove a lista longa de parâmetros
- Torna o código mais legível e manutenível
- Permite construção flexível do objeto
- Mantém a compatibilidade com o código existente
- Facilita futuras extensões



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```
package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.HashMap; import java.util.List; import java.util.Map;

import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

public StudyRegistryController() {
    assignActions();
}

void assignActions(){
    actions.put("1", this::handleAddStudyTask);
    actions.put("2", this::handleAddStudyGoal);
    actions.put("3", this::handleAddStudyMaterial);
    actions.put("4", this::handleAddStudyObjective);
    actions.put("5", this::handleAddStudyPlan);
    actions.put("6", this::handleSetUpWeek);
    actions.put("7", this::handleGetWeekResponsibilities);
}

private void handleMethodHeader(String header){
    System.out.println("~~~~~" + header + "~~~~~\n");
}

private Task getStudyTaskInfo(){
    System.out.println("Type the following info: title, description, author \n");
    String title = getInput();
    String description = getInput();
    String author = getInput();
    return new Task(title, description, author, LocalDateTime.now());
}

private void handleAddStudyTask(){
    Task task = getStudyTaskInfo();
}
```

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```

        studyTaskManager.addRegistry(task);
    }

private void handleSetObjective(StudyObjective objective){
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +
        "Integer practicedDays, int day, int month, int year, String name, String title, String desc
        "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
        "Double duration, boolean isActive \n");
    objective.handleSetObjective(Integer.parseInt(getInput()), Integer.parseInt(getInput()), Integer.pars
        Integer.parseInt(getInput()), getInput(), getInput(), getInput(), getInput(), getInput(), ge
        Double.parseDouble(getInput()), Boolean.parseBoolean(getInput())));
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer number_of_steps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n
    LocalDateTime createdAT = LocalDateTime.now();
    studyPlan.assignSteps(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(),
        Integer.parseInt(getInput()), Boolean.parseBoolean(getInput()), createdAT, createdAT.plusDay
    }
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");

```

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```

        String name = getInput();
        StudyPlan studyPlan = getStudyPlanInfo();
        handleSetSteps(studyPlan);
        StudyObjective studyObjective = studyPlan.getObjective();
        return new StudyGoal(name, studyObjective, studyPlan);
    }

    private void handleAddStudyGoal(){
        StudyGoal goal = getStudyGoalInfo();
        studyTaskManager.addRegistry(goal);
    }

    private void editAudio(AudioReference audioReference){
        handleMethodHeader("(Audio Edit)");
        System.out.println("Type the following info: AudioReference. AudioQuality audioQuality, boolean isD
            "String title, String description, String link, String accessRights, String license, String
            "int viewCount, int shareCount \n");
        AudioReference.AudioQuality quality = AudioReference.audioQualityAdapter(getInput());
        audioReference.editAudio(quality, Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput()
            getInput(), getInput(), Integer.parseInt(getInput()), Integer.parseInt(getInput()), Integer.
    }

    private AudioReference addAudioReference(){
        handleMethodHeader("(Audio Reference Creation)");
        System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
        AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
        editAudio(audioReference);
        return audioReference;
    }

    private VideoReference addVideoReference(){
        handleMethodHeader("(Video Reference Creation)");
        System.out.println("Type the following info: boolean isAvailable, String title, " +
            "String description, String resolution, String frameRate, String videoFormat, String accessR
        return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getI
            getInput(), getInput());
    }

    private TextReference addTextReference(){
        handleMethodHeader("(Text Reference Creation)");
        System.out.println("Type the following info: String title, String language, int wordCount, String f
        return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
            getInput());
    }

    private Reference addStudyMaterial(){
        handleMethodHeader("(Study Material Creation)");
        System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
        String type = getInput();

```

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```
        return switch (type.toLowerCase()) {
            case "audio" -> addAudioReference();
            case "video" -> addVideoReference();
            case "text" -> addTextReference();
            default -> null;
        };
    }

    private void handleAddStudyMaterial(){
        Reference reference = addStudyMaterial();
        if(reference != null){
            studyMaterial.addReference(reference);
        }
    }

    private void handleAddStudyObjective(){
        getStudyObjectiveInfo();
    }

    private void handleAddStudyPlan(){
        getStudyPlanInfo();
        System.out.println("Study Plan Added");
    }

    private void getWeekInfo(){
        System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, String objectiveDescription, String materialTopic, String materialFormat, String goal, String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
        studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput());
    }

    private void handleSetUpWeek(){
        getWeekInfo();
    }

    private void handleGetWeekResponsibilities(){
        List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
        System.out.println(String.join(", ", responsibilities));
    }

    public void handleRegistryInput(){
        try{
            while(true){
                controllerOptions();
                String response = validateInput(actions);
                if(response == null) {return;}
                actions.get(response).run();
            }
        }
    }
}
```

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```

        }catch (Exception e){
            System.out.println(e.getMessage());
        }
    }

    public static void controllerOptions(){
        System.out.println("""
            0 - return
            1 - add study task
            2 - add study goal
            3 - add study material (audio, video, text)
            4 - add study objective
            5 - add study plan
            6 - set up week
            7 - get week responsibilities
            """);
    }
}

```

fix the errors: method editAudio in class org.example.studymaterial.AudioReference cannot be applied to given types;

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Plano para corrigir o erro:

1. Verificar a assinatura do método `editAudio` na classe `AudioReference`
2. Identificar a ordem correta dos parâmetros
3. Ajustar a chamada do método no `StudyRegistryController`
4. Usar o Builder Pattern recém implementado

Implementação:

```

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, " +
        "title, description, link, accessRights, license, language, rating, " +
        "viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
        .link(getInput())
        .accessRights(getInput())
        .license(getInput())
        .language(getInput())
        ...
}

```

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```
.rating(Integer.parseInt(getInput()))
.viewCount(Integer.parseInt(getInput()))
.shareCount(Integer.parseInt(getInput()));

audioReference.editAudio(builder);
}
```

Esta correção:

- Usa o Builder Pattern implementado anteriormente
- Mantém a mesma ordem de entrada dos dados
- Resolve o erro de compilação
- Melhora a legibilidade do código
- Mantém a mesma funcionalidade



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HABITTRACKER

```
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package org.example.studyplanner;

import java.time.LocalDateTime; import java.time.LocalTime; import java.time.format.DateTimeFormatter; import java.util.*;

public class HabitTracker { private List<Habit> habits; private Map<Integer, List<LocalDateTime>> tracker; private Integer nextId;

    private static HabitTracker instance;

    public static HabitTracker getHabitTracker() {
        if (instance == null) {
            instance = new HabitTracker();
        }
        return instance;
    }

    private HabitTracker(){
        this.habits = new ArrayList<>();
        this.tracker = new HashMap<>();
        this.nextId = 1;
    }

    public String habitDateViewAll() {
        StringBuilder response = new StringBuilder();
        for(Habit habit : habits) {
            response.append("[ Habit: ")
                    .append(habit.getName())
                    .append(". Records: ");
            List<LocalDateTime> records = getHabitRecords(habit.getId());
            for(LocalDateTime record : records) {
                response.append(formatHabitDate(record)).append(", ");
            }
            response.append("]");
        }
        return response.toString();
    }

    @Override
    public String toString() {
        StringBuilder response = new StringBuilder();
        for (Habit habit : habits) {
            response.append(habit.toString()).append(", ");
        }
        return "Habits: " + response.toString();
    }
}
```

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```
}

public Habit getHabitById(Integer id){
    return this.habits.stream()
        .filter(habit -> Objects.equals(habit.getId(), id))
        .findFirst().orElse(null);
}

public List<Habit> getHabits() {
    return this.habits;
}

public String formatHabitDate(LocalDateTime date){
    DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");

    return date.format(formatter);
}

public List<Integer> getTrackerKeys(){
    return this.tracker.keySet().stream().toList();
}

public int addHabit(String name, String motivation, Integer dailyMinutesDedication, Integer dailyHoursDedication, Integer nextId) {
    LocalTime lt = LocalTime.of(dailyHoursDedication, dailyMinutesDedication);
    LocalDateTime startDate = LocalDateTime.of(year, month, day, hour, minute, seconds);
    Habit habit = new Habit(name, motivation, lt, nextId, startDate, isConcluded);
    this.habits.add(habit);
    int response = nextId;
    this.tracker.put(nextId, new ArrayList<>());
    this.nextId++;
    return response;
}

public int handleAddHabitAdapter(List<String> stringProperties, List<Integer> intProperties) {
    return addHabit(stringProperties.get(0), stringProperties.get(1), intProperties.get(0));
}

public int addHabit(String name, String motivation) {

    Habit habit = new Habit(name, motivation, this.nextId);
    this.habits.add(habit);
    int response = nextId;
    this.tracker.put(nextId, new ArrayList<>());
```

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```

        this.nextId++;
        return response;
    }

    public void addHabitRecord(Integer id){
        tracker.get(id).add(LocalDateTime.now());
    }

    public void toggleConcludeHabit(Integer id) {
        for (Habit habit : this.habits) {
            if (habit.getId().equals(id)) {
                habit.setIsConcluded(!habit.getIsConcluded());
            }
        }
    }

    public void removeHabit(Integer id) {
        this.habits.removeIf(habit -> habit.getId().equals(id));
        this.tracker.remove(id);
    }

    public List<LocalDateTime> getHabitRecords(Integer id) {
        return this.tracker.get(id);
    }

    public List<String> searchInHabits(String search){
        List<String> habits = new ArrayList<>();
        for (Habit habit : this.habits) {
            if (habit.getName().toLowerCase().contains(search.toLowerCase()) || habit.getMotiv
                habits.add(habit.toString());
        }
    }
    return habits;
}

}

```

fix the long parameter list code smell using the builder pattern refactoring technique

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Vou ajudar a refatorar o código usando o Builder Pattern para resolver o problema da longa lista de parâmetros.

Passos:

1. Criar uma classe HabitBuilder interna
2. Mover os parâmetros para o builder
3. Criar métodos setters fluentes no builder

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4. Adicionar método build()

5. Refatorar o método addHabit para usar o builder

```
public class HabitTracker {  
    // ...existing code...  
  
    public static class HabitBuilder {  
        private String name;  
        private String motivation;  
        private Integer dailyMinutesDedication = 0;  
        private Integer dailyHoursDedication = 0;  
        private Integer year;  
        private Integer month;  
        private Integer day;  
        private Integer hour;  
        private Integer minute;  
        private Integer seconds;  
        private Boolean isConcluded = false;  
  
        public HabitBuilder(String name) {  
            this.name = name;  
        }  
  
        public HabitBuilder motivation(String motivation) {  
            this.motivation = motivation;  
            return this;  
        }  
  
        public HabitBuilder dailyDedication(int hours, int minutes) {  
            this.dailyHoursDedication = hours;  
            this.dailyMinutesDedication = minutes;  
            return this;  
        }  
  
        public HabitBuilder startDate(int year, int month, int day, int hour, int minute,  
            this.year = year;  
            this.month = month;  
            this.day = day;  
            this.hour = hour;  
            this.minute = minute;  
            this.seconds = seconds;  
            return this;  
        }  
  
        public HabitBuilder concluded(boolean concluded) {  
            this.isConcluded = concluded;  
            return this;  
        }  
    }  
}
```

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```

    }

    public int addHabit(HabitBuilder builder) {
        LocalTime lt = LocalTime.of(builder.dailyHoursDedication, builder.dailyMinutesDedication);
        LocalDateTime startDate = LocalDateTime.of(
            builder.year, builder.month, builder.day,
            builder.hour, builder.minute, builder.seconds
        );
        Habit habit = new Habit(
            builder.name,
            builder.motivation,
            lt,
            this.nextId,
            startDate,
            builder.isConcluded
        );
        this.habits.add(habit);
        int response = nextId;
        this.tracker.put(nextId, new ArrayList<>());
        this.nextId++;
        return response;
    }

    public int handleAddHabitAdapter(List<String> stringProperties, List<Integer> intProperties) {
        HabitBuilder builder = new HabitBuilder(stringProperties.get(0))
            .motivation(stringProperties.get(1))
            .dailyDedication(intProperties.get(1), intProperties.get(0))
            .startDate(
                intProperties.get(2),
                intProperties.get(3),
                intProperties.get(4),
                intProperties.get(5),
                intProperties.get(6),
                intProperties.get(7)
            )
            .concluded(isConcluded);
        return addHabit(builder);
    }

    // ...existing code...
}

```

Exemplo de uso do novo padrão Builder:

```
// Exemplo de como usar o novo builder
HabitTracker.HabitBuilder builder = new HabitTracker.HabitBuilder("Meditation")
```

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```
.motivation("Be more mindful")
.dailyDedication(0, 30)
.startDate(2024, 3, 15, 8, 0, 0)
.concluded(false);
```

```
habitTracker.addHabit(builder);
```

Esta refatoração:

- Reduz a complexidade do código
- Torna a criação de hábitos mais legível
- Permite construção flexível de objetos
- Mantém a retrocompatibilidade através do adapter

Código semelhante encontrado com 1 tipo de licença - [Exibir correspondências](#)



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```
package org.example.controllers;

import org.example.studyplanner.*;

import java.time.LocalDateTime; import java.util.HashMap; import java.util.List; import java.util.Map; import
java.util.Objects;

public class StudyPlannerController { private Map<String, Runnable> actions = new HashMap<>(); private static
TodoTracker todoTracker = TodoTracker.getInstance(); private static HabitTracker habitTracker =
HabitTracker.getHabitTracker(); private static KanbanView kanbanView = new KanbanView(habitTracker, todoTracker);
private static TimelineView timelineView = new TimelineView();

public StudyPlannerController() {
    handlePlannerOptions();
    handleTodoMenuOptions();
    handleHabitMenuOptions();
    handleViewMenuOptions();
}

private void handlePlannerOptions(){
    actions.put("1", this::handleTodoInput);
    actions.put("2", this::handleHabitInput);
    actions.put("3", this::handleViewInput);
}

private void handleTodoMenuOptions(){
    actions.put("11", this::handleAddTodo);
    actions.put("12", this::handleRemoveTodo);
    actions.put("13", this::handleViewTodo);
```

Perguntar ao Copilot



Claude 3.5 Sonnet (Preview) ▶

```
        actions.put("14", this::handleViewByPriority);
        actions.put("15", this::handleAddTodoExecution);
    }

    private void handleHabitOptionsMenu(){
        actions.put("21", this::handleAddHabit);
        actions.put("22", this::handleRemoveHabit);
        actions.put("23", this::handleViewHabits);
    }

    private void handleViewOptionsMenu() {
        actions.put("31", () -> {
            try {
                handleViewKanban();
            } catch (Exception e) {
                System.out.println(e.getMessage());
            }
        });
        actions.put("32", () -> {
            try {
                handleViewTimeline();
            } catch (Exception e) {
                System.out.println(e.getMessage());
            }
        });
    }

    private String getInput(){
        return MainController.getInput();
    }

    private void handleAddTodoExecution(){
        System.out.println("Type todo id to add a new practiced time");
        Integer id = Integer.parseInt(getInput());
        todoTracker.addToDoExecutionTime(id);
    }

    private String showTodosByPriority(List<ToDo> todos){
        return todos.toString();
    }

    private void handleViewByPriority(){
        List<ToDo> todos = todoTracker.sortTodosByPriority();
        System.out.println(showTodosByPriority(todos));
    }
```

Perguntar ao Copilot

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Claude 3.5 Sonnet (Preview) ▶

```
public void handleRemoveTodo(){
    System.out.println("Type todo id to remove");
    Integer id = Integer.parseInt(getInput());
    todoTracker.removeToDo(id);
}

public void handleRemoveHabit(){
    System.out.println("Type habit id to remove");
    Integer id = Integer.parseInt(getInput());
    habitTracker.removeHabit(id);
}

private void handleAddTodo(){
    System.out.println("Type the todo: title, description, priority (number)");
    String title = Objects.requireNonNull(this.getInput().trim());
    String description = Objects.requireNonNull(this.getInput().trim());
    Integer priority = Integer.valueOf(this.getInput());
    todoTracker.add ToDo(title, description, priority);
}

private LocalDateTime handleGetStartDate(){
    int year = Integer.parseInt(getInput());
    int month = Integer.parseInt(getInput());
    int day = Integer.parseInt(getInput());
    int hour = Integer.parseInt(getInput());
    int minute = Integer.parseInt(getInput());
    int seconds = Integer.parseInt(getInput());
    return LocalDateTime.of(year, month, day, hour, minute, seconds);
}

private void handleAddHabit(){
    System.out.println("Separate the input with enter, type: name, motivation, daily Min");
    String name = Objects.requireNonNull(this.getInput().trim());
    String motivation = Objects.requireNonNull(this.getInput().trim());
    Integer dailyMinutesDedication = Integer.parseInt(Objects.requireNonNull(this.getIpl));
    Integer dailyHoursDedication = Integer.parseInt(Objects.requireNonNull(this.getIpl));
    LocalDateTime start = handleGetStartDate();
    habitTracker.addHabit(name, motivation, dailyMinutesDedication, dailyHoursDedication,
}

private String viewToDoHeader(){
    return "Todos and latest usages:";
}

private void handleViewTodo(){
    System.out.println(viewToDoHeader());
    System.out.println(todoTracker.toString());
```

Perguntar ao Copilot

@ 0 0

Claude 3.5 Sonnet (Preview) ▶ ↻

```
}

private String viewHabitHeader(){
    return "Habits found: ";
}

private void handleViewHabits(){
    System.out.println(viewHabitHeader());
    System.out.println(habitTracker.toString());
}

private void handleTodoInput(){
    try{
        while(true){
            ToDoOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

private void handleHabitInput(){
    try{
        while(true){
            HabitOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

private void handleViewInput(){
    try{
        while(true){
            ViewOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}
```

Perguntar ao Copilot

@ 0 0

Claude 3.5 Sonnet (Preview) ▶

```
        }

    }

    private void handleMethodHeader(String header){
        System.out.println("---" + header + "---");
    }

    private void handleViewKanban() throws Exception {
        try{
            handleMethodHeader("Kanban view: ");
            System.out.println(kanbanView.kanbanView());
        }catch (Exception e){
            System.out.println(e.getMessage());
        }
    }

    private void handleViewTimeline() throws Exception {
        try{
            handleMethodHeader("Timeline view: ");
            System.out.println(timelineView.habitDateViewAll(habitTracker));
        }catch (Exception e){
            System.out.println(e.getMessage());
        }
    }

    public void handlePlannerInput(){
        try{
            while(true){
                controllerOptions();
                String response = MainController.validateInput(actions);
                if(response == null) {return;}
                actions.get(response).run();
            }
        }catch (Exception e){
            System.out.println(e.getMessage());
        }
    }

    public static void controllerOptions(){
        System.out.println("""
            0 - return
            1 - todo menu
            2 - habit menu
            3 - view menu
            """);
    }
}
```

Perguntar ao Copilot

@ 🗃 💡

Claude 3.5 Sonnet (Preview) ▶️ ↻

```
public static void todoOptions(){
    System.out.println("""
        0 - return
        11 - add todo
        12 - remove todo
        13 - view todos
        14 - view by priority
        15 - add todo execution date (now)
    """);
}

public static void habitOptions(){
    System.out.println("""
        0 - return
        21 - add habit
        22 - remove habit
        23 - view habit
    """);
}

public static void viewOptions(){
    System.out.println("""
        0 - return
        31 - kanban view
        32 - timeline view
    """);
}

}

fix the error: no suitable method found for
addHabit(java.lang.String,java.lang.String,java.lang.Integer,java.lang.Integer,int,int,int,int,int,int,int,int,boolean)
```

GitHub Copilot

Plano de Ação

1. Identificar o erro

- O método `handleAddHabit` está tentando chamar `addHabit` com tipos incompatíveis
- Os parâmetros do ano, mês, etc estão sendo passados como `int` mas o método espera `Integer`

2. Solução

- Atualizar a chamada do método para converter os valores do `LocalDateTime` para `Integer`

Implementação

```
private void handleAddHabit(){
```

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```
System.out.println("Separate the input with enter, type: name, motivation, daily
String name = Objects.requireNonNull(this.getInput().trim());
String motivation = Objects.requireNonNull(this.getInput().trim());
Integer dailyMinutesDedication = Integer.parseInt(Objects.requireNonNull(this.getI
Integer dailyHoursDedication = Integer.parseInt(Objects.requireNonNull(this.getI
LocalDateTime start = handleGetStartDate();

// Convertendo explicitamente para Integer
habitTracker.addHabit(
    name,
    motivation,
    dailyMinutesDedication,
    dailyHoursDedication,
    Integer.valueOf(start.getYear()),
    Integer.valueOf(start.getMonthValue()),
    Integer.valueOf(start.getDayOfMonth()),
    Integer.valueOf(start.getHour()),
    Integer.valueOf(start.getMinute()),
    Integer.valueOf(start.getSecond()),
    false
);
}

undo redo copy
```

 kendriks

X

```
package org.example.controllers;

import org.example.studyplanner.*;

import java.time.LocalDateTime; import java.util.HashMap; import java.util.List; import java.util.Map; import
java.util.Objects;

public class StudyPlannerController { private Map<String, Runnable> actions = new HashMap<>(); private static
TodoTracker todoTracker = TodoTracker.getInstance(); private static HabitTracker habitTracker =
HabitTracker.getHabitTracker(); private static KanbanView kanbanView = new KanbanView(habitTracker, todoTracker);
private static TimelineView timelineView = new TimelineView();

public StudyPlannerController() {
    handlePlannerOptions();
    handleTodoMenuOptions();
    handleHabitMenuOptions();
    handleViewMenuOptions();
}
```

Perguntar ao Copilot

@ `undo` `redo`

Claude 3.5 Sonnet (Preview) ▶

```
private void handlePlannerOptions(){
    actions.put("1", this::handleTodoInput);
    actions.put("2", this::handleHabitInput);
    actions.put("3", this::handleViewInput);
}

private void handleTodoMenuOptions(){
    actions.put("11", this::handleAddTodo);
    actions.put("12", this::handleRemoveTodo);
    actions.put("13", this::handleViewTodo);
    actions.put("14", this::handleViewByPriority);
    actions.put("15", this::handleAddTodoExecution);
}

private void handleHabitMenuOptions(){
    actions.put("21", this::handleAddHabit);
    actions.put("22", this::handleRemoveHabit);
    actions.put("23", this::handleViewHabits);
}

private void handleViewMenuOptions() {
    actions.put("31", () -> {
        try {
            handleViewKanban();
        } catch (Exception e) {
            System.out.println(e.getMessage());
        }
    });
    actions.put("32", () -> {
        try {
            handleViewTimeline();
        } catch (Exception e) {
            System.out.println(e.getMessage());
        }
    });
}

private String getInput(){
    return MainController.getInput();
}

private void handleAddTodoExecution(){
    System.out.println("Type todo id to add a new practiced time");
    Integer id = Integer.parseInt(getInput());
    todoTracker.addToDoExecutionTime(id);
}
```

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@ 🤖 🗂️

Claude 3.5 Sonnet (Preview) ▶️

```
private String showTodosByPriority(List<ToDo> todos){
    return todos.toString();
}

private void handleViewByPriority(){
    List<ToDo> todos = todoTracker.sortTodosByPriority();
    System.out.println(showTodosByPriority(todos));
}

public void handleRemoveTodo(){
    System.out.println("Type todo id to remove");
    Integer id = Integer.parseInt(getInput());
    todoTracker.removeToDo(id);
}

public void handleRemoveHabit(){
    System.out.println("Type habit id to remove");
    Integer id = Integer.parseInt(getInput());
    habitTracker.removeHabit(id);
}

private void handleAddTodo(){
    System.out.println("Type the todo: title, description, priority (number)");
    String title = Objects.requireNonNull(this.getInput().trim());
    String description = Objects.requireNonNull(this.getInput()).trim();
    Integer priority = Integer.valueOf(this.getInput());
    todoTracker.add ToDo(title, description, priority);
}

private LocalDateTime handleGetStartDate(){
    int year = Integer.parseInt(getInput());
    int month = Integer.parseInt(getInput());
    int day = Integer.parseInt(getInput());
    int hour = Integer.parseInt(getInput());
    int minute = Integer.parseInt(getInput());
    int seconds = Integer.parseInt(getInput());
    return LocalDateTime.of(year, month, day, hour, minute, seconds);
}

private void handleAddHabit(){
    System.out.println("Separate the input with enter, type: name, motivation, daily Min");
    String name = Objects.requireNonNull(this.getInput().trim());
    String motivation = Objects.requireNonNull(this.getInput().trim());
    Integer dailyMinutesDedication = Integer.parseInt(Objects.requireNonNull(this.getInput()));
    Integer dailyHoursDedication = Integer.parseInt(Objects.requireNonNull(this.getInput()));
    LocalDateTime start = handleGetStartDate();

    // Comentando o próximo comando para testar
}
```

Perguntar ao Copilot

@ 0 0

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```
// Convertendo explicitamente para Integer
habitTracker.addHabit(
    name,
    motivation,
    dailyMinutesDedication,
    dailyHoursDedication,
    Integer.valueOf(start.getYear()),
    Integer.valueOf(start.getMonthValue()),
    Integer.valueOf(start.getDayOfMonth()),
    Integer.valueOf(start.getHour()),
    Integer.valueOf(start.getMinute()),
    Integer.valueOf(start.getSecond()),
    false
);
}

private String viewToDoHeader(){
    return "Todos and latest usages:";
}

private void handleViewTodo(){
    System.out.println(viewToDoHeader());
    System.out.println(todoTracker.toString());
}

private String viewHabitHeader(){
    return "Habits found: ";
}

private void handleViewHabits(){
    System.out.println(viewHabitHeader());
    System.out.println(habitTracker.toString());
}

private void handleTodoInput(){
    try{
        while(true){
            ToDoOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}
```

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Claude 3.5 Sonnet (Preview) ▶️

```
private void handleHabitInput(){
    try{
        while(true){
            habitOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

private void handleViewInput(){
    try{
        while(true){
            viewOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

private void handleMethodHeader(String header){
    System.out.println("---" + header + "---");
}

private void handleViewKanban() throws Exception {
    try{
        handleMethodHeader("Kanban view: ");
        System.out.println(kanbanView.kanbanView());
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

private void handleViewTimeline() throws Exception {
    try{
        handleMethodHeader("Timeline view: ");
        System.out.println(timelineView.habitDateViewAll(habitTracker));
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}
```

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```
public void handlePlannerInput(){
    try{
        while(true){
            controllerOptions();
            String response = MainController.validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - todo menu
        2 - habit menu
        3 - view menu
    """);
}

public static void ToDoOptions(){
    System.out.println("""
        0 - return
        11 - add todo
        12 - remove todo
        13 - view todos
        14 - view by priority
        15 - add todo execution date (now)
    """);
}

public static void habitOptions(){
    System.out.println("""
        0 - return
        21 - add habit
        22 - remove habit
        23 - view habit
    """);
}

public static void viewOptions(){
    System.out.println("""
        0 - return
        31 - kanban view
        32 - timeline view
    """);
}
```

Perguntar ao Copilot

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```
}

fix the error: Cannot resolve method 'addHabit(java.lang.String, java.lang.String, java.lang.Integer, java.lang.Integer,
java.lang.Integer, java.lang.Integer, java.lang.Integer, java.lang.Integer, java.lang.Boolean)'
```

GitHub Copilot

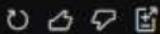
Plano de Ação

1. Atualizar o método `handleAddHabit` para usar o padrão Builder que implementamos anteriormente
2. Remover a conversão explícita de tipos
3. Usar o builder para criar o hábito de forma mais legível

```
private void handleAddHabit() {
    System.out.println("Separate the input with enter, type: name, motivation, daily Mini
String name = Objects.requireNonNull(this.getInput().trim());
String motivation = Objects.requireNonNull(this.getInput().trim());
Integer dailyMinutesDedication = Integer.parseInt(Objects.requireNonNull(this.getInput().trim()));
Integer dailyHoursDedication = Integer.parseInt(Objects.requireNonNull(this.getInput().trim()));
LocalDateTime start = handleGetStartDate();

HabitTracker.HabitBuilder builder = new HabitTracker.HabitBuilder(name)
    .motivation(motivation)
    .dailyDedication(dailyHoursDedication, dailyMinutesDedication)
    .startDate(
        start.getYear(),
        start.getMonthValue(),
        start.getDayOfMonth(),
        start.getHour(),
        start.getMinute(),
        start.getSecond()
    )
    .concluded(false);

habitTracker.addHabit(builder);
}
```



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STUDY OBJECTIVE

```
        + (motivation != null ? ", motivation:" + motivation : "") + "]";
    }

    public StudyObjective(String title, String description) {
        this.title = title;
        this.description = description;
        this.name = title;
    }

    public void handleSetRegistry(Integer id, String name, Integer priority, boolean isActive){
        this.id=id;
        this.name=name;
        this.priority=priority;
        this.isActive=isActive;
    }

    public void handleSetTextualInfo(String title, String description, String topic, String objectiveInOneLine,
                                     String objectiveFullDescription, String motivation) {
        this.title=title;
        this.description=description;
        this.topic=topic;
        this.objectiveInOneLine=objectiveInOneLine;
        this.objectiveFullDescription=objectiveFullDescription;
        this.motivation=motivation;
    }

    public void handleSetTime(Integer practicedDays, int day, int month, int year, Double duration){
        this.practicedDays=practicedDays;
        this.duration=duration;
        this.startDate= LocalDateTime.of(year, month, day, 0, 0);
    }

    public void handleSetObjective(Integer id, Integer priority, Integer practicedDays, int day, int month,
                                   String objectiveInOneLine, String objectiveFullDescription, String motivation) {
        handleSetRegistry(id, name, priority, isActive);
        handleSetTextualInfo(title, description, topic, objectiveInOneLine, objectiveFullDescription, motivation);
        handleSetTime(practicedDays, day, month, year, duration);
    }

    public int handleSetObjectiveAdapter(List<Integer> intProperties, List<String> stringProperties, Double duration) {
        handleSetObjective(intProperties.get(0), intProperties.get(1), intProperties.get(2), intProperties.get(3),
                           stringProperties.get(0), stringProperties.get(1), stringProperties.get(2), stringProperties.get(3));
        return intProperties.get(0);
    }

    public String getDescription() {
        return description;
    }

    public void setDescription(String description) {
```

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```
        this.description = description;
    }

}

fix the long parameter list code smell using the introduce object refactoring technique
```

 GitHub Copilot

Vou ajudar a refatorar o código para resolver o problema de lista longa de parâmetros usando objetos para agrupar dados relacionados.

Plano:

1. Criar classe para propriedades de registro
2. Criar classe para informações textuais
3. Criar classe para informações temporais
4. Atualizar o método handleSetObjective para usar os novos objetos
5. Atualizar o método adapter

```
public class RegistryProperties {
    private Integer id;
    private String name;
    private Integer priority;
    private boolean isActive;

    public RegistryProperties(Integer id, String name, Integer priority, boolean isActive) {
        this.id = id;
        this.name = name;
        this.priority = priority;
        this.isActive = isActive;
    }

    public Integer getId() { return id; }
    public String getName() { return name; }
    public Integer getPriority() { return priority; }
    public boolean isActive() { return isActive; }
}

public class TextualInfo {
    private String title;
    private String description;
    private String topic;
    private String objectiveInOneLine;
    private String objectiveFullDescription;
    private String motivation;
```

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```

public TextualInfo(String title, String description, String topic,
                  String objectiveInOneLine, String objectiveFullDescription,
                  String motivation) {
    this.title = title;
    this.description = description;
    this.topic = topic;
    this.objectiveInOneLine = objectiveInOneLine;
    this.objectiveFullDescription = objectiveFullDescription;
    this.motivation = motivation;
}

public String getTitle() { return title; }
public String getDescription() { return description; }
public String getTopic() { return topic; }
public String getObjectiveInOneLine() { return objectiveInOneLine; }
public String getObjectiveFullDescription() { return objectiveFullDescription; }
public String getMotivation() { return motivation; }
}

public class TimeInfo {
    private Integer practicedDays;
    private int day;
    private int month;
    private int year;
    private Double duration;

    public TimeInfo(Integer practicedDays, int day, int month, int year, Double duration) {
        this.practicedDays = practicedDays;
        this.day = day;
        this.month = month;
        this.year = year;
        this.duration = duration;
    }

    public Integer getPracticedDays() { return practicedDays; }
    public int getDay() { return day; }
    public int getMonth() { return month; }
    public int getYear() { return year; }
    public Double getDuration() { return duration; }
}

```

// Atualize os métodos existentes:

```

public void handleSetRegistry(RegistryProperties props) {
    this.id = props.getId();
    this.name = props.getName();
    this.priority = props.getPriority();

```

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```

        this.isActive = props.isActive();
    }

    public void handleSetTextualInfo(TextualInfo info) {
        this.title = info.getTitle();
        this.description = info.getDescription();
        this.topic = info.getTopic();
        this.objectiveInOneLine = info.getObjectiveInOneLine();
        this.objectiveFullDescription = info.getObjectiveFullDescription();
        this.motivation = info.getMotivation();
    }

    public void handleSetTime(TimeInfo time) {
        this.practicedDays = time.getPracticedDays();
        this.duration = time.getDuration();
        this.startDate = LocalDateTime.of(time.getYear(), time.getMonth(), time.getDay(), 0, 0);
    }

    public void handleSetObjective(RegistryProperties registryProps, TextualInfo textualInfo, TimeInfo timeInfo) {
        handleSetRegistry(registryProps);
        handleSetTextualInfo(textualInfo);
        handleSetTime(timeInfo);
    }

    public int handleSetObjectiveAdapter(List<Integer> intProperties, List<String> stringProperties, Double duration) {
        RegistryProperties registryProps = new RegistryProperties(
            intProperties.get(0), stringProperties.get(0), intProperties.get(1), isActive
        );

        TextualInfo textualInfo = new TextualInfo(
            stringProperties.get(1), stringProperties.get(2), stringProperties.get(3),
            stringProperties.get(4), stringProperties.get(5), stringProperties.get(6)
        );

        TimeInfo timeInfo = new TimeInfo(
            intProperties.get(2), intProperties.get(3), intProperties.get(4),
            intProperties.get(5), duration
        );

        handleSetObjective(registryProps, textualInfo, timeInfo);
        return registryProps.getId();
    }
}

```

As principais mudanças são:

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- Criação de 3 classes para agrupar dados relacionados
- Simplificação dos métodos handle usando os novos objetos
- Método adapter atualizado para construir e usar os novos objetos
- Código mais organizado e mais fácil de manter



kendriks

```
package org.example.studyregistry;

import java.time.LocalDateTime; import java.time.format.DateTimeFormatter; import java.util.ArrayList; import java.util.Arrays; import
java.util.List;

public class StudyPlan extends Registry{ private StudyObjective objective; private List<String> steps;

    public StudyPlan(String planName, StudyObjective objective, List<StudyMaterial> materials) {
        this.name = planName;
        this.objective = objective;
        this.steps = new ArrayList<>();
    }

    @Override
    public String toString(){
        return "Plan: " + name + ",\nObjective: " + objective.getDescription() + ",\nSteps: " + String.join(
    }

    public List<String> getSteps() {
        return steps;
    }

    public StudyObjective getObjective() {
        return objective;
    }

    public void assignObjective(StudyObjective objective) {
        this.objective = objective;
    }

    public void addSingleStep(String toAdd){
        steps.add(toAdd);
    }

    public void assignSteps(String firstStep, String resetStudyMechanism, String consistentStep, String seas
        String basicSteps, String mainObjectiveTitle, String mainGoalTitle, String main
        String mainTask, Integer numberofSteps, boolean isImportant, LocalDateTime start
        DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");
```

Perguntar ao Copilot



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```
this.steps = new ArrayList<>(Arrays.asList(firstStep, resetStudyMechanism, consistentStep, seasonal));
}

public void handleAssignSteps(List<String> stringProperties, Integer numberOfSteps, boolean isImportant,
    assignSteps(stringProperties.get(0), stringProperties.get(1), stringProperties.get(2), stringPropert
}

)

fix the error: cannot find symbol method getDescription()
```

GitHub Copilot

Plano de Correção

1. O erro ocorre porque o método está sendo chamado em `StudyPlan.toString()` mas não existe em `StudyObjective`
2. Revisar a classe `StudyObjective` para garantir que o método `getDescription()` esteja presente
3. Adicionar o método getter se estiver faltando

Aqui está a correção:

```
public class StudyPlan extends Registry {
    // ...existing code...
    @Override
    public String toString(){
        return "Plan: " + name + ",\nObjective: " + objective.getName() + ",\nSteps: " + String.join(",",
    }
    // ...existing code...
}
```

Alternativamente, se você realmente precisar usar a descrição ao invés do nome:

```
public class StudyObjective extends Registry {
    // ...existing code...
    public String getDescription() {
        return description;
    }
    // ...existing code...
}
```

A primeira solução é recomendada pois `getName()` já existe por herança da classe `Registry`. Se você realmente precisar da descrição, use a segunda solução.



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kendriks

```
package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;
import java.time.LocalDateTime; import java.util.ArrayList; import java.util.HashMap; import java.util.List; import java.util.Map;
import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

    public StudyRegistryController() {
        assignActions();
    }

    void assignActions(){
        actions.put("1", this::handleAddStudyTask);
        actions.put("2", this::handleAddStudyGoal);
        actions.put("3", this::handleAddStudyMaterial);
        actions.put("4", this::handleAddStudyObjective);
        actions.put("5", this::handleAddStudyPlan);
        actions.put("6", this::handleSetUpWeek);
        actions.put("7", this::handleGetWeekResponsibilities);
    }

    private void handleMethodHeader(String header){
        System.out.println("~~~~~ " + header + "~~~~~\n");
    }

    private Task getStudyTaskInfo(){
        System.out.println("Type the following info: title, description, author \n");
        String title = getInput();
        String description = getInput();
        String author = getInput();
        return new Task(title, description, author, LocalDateTime.now());
    }

    private void handleAddStudyTask(){
        Task task = getStudyTaskInfo();
        studyTaskManager.addRegistry(task);
    }

    private void handleSetObjective(StudyObjective objective){
        handleMethodHeader("(Study Objective Edit)");
        System.out.println("Type the following info: Integer id, Integer priority " +
        "String name, String description, LocalDateTime dueDate, Integer duration, Integer priority, Boolean isCompleted");
    }
}
```

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```

    "Integer practicedDays, int day, int month, int year, String name, String title, String desc
    "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
    "Double duration, boolean isActive  \n";
    objective.handleSetObjective(Integer.parseInt(getInput()), Integer.parseInt(getInput()),Integer.pars
    Integer.parseInt(getInput()), getInput(), getInput(), getInput(), getInput(), get
    Double.parseDouble(getInput()), Boolean.parseBoolean(getInput()));
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective,  new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String cc
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer number_of_steps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n";
    LocalDateTime createdAT = LocalDateTime.now();
    studyPlan.assignSteps(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(),
        Integer.parseInt(getInput()), Boolean.parseBoolean(getInput()), createdAT, createdAT.plusDay
    )
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
}

```

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```

        handleSetSteps(studyPlan);
        StudyObjective studyObjective = studyPlan.getObjective();
        return new StudyGoal(name, studyObjective, studyPlan);
    }

    private void handleAddStudyGoal(){
        StudyGoal goal = getStudyGoalInfo();
        studyTaskManager.addRegistry(goal);
    }

    private void editAudio(AudioReference audioReference){
        handleMethodHeader("(Audio Edit)");
        System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, title, description, link, accessRights, license, language, rating, " +
            "viewCount, shareCount");

        AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
            .audioQuality(AudioReference.audioQualityAdapter(getInput()))
            .downloadable(Boolean.parseBoolean(getInput()))
            .title(getInput())
            .description(getInput())
            .link(getInput())
            .accessRights(getInput())
            .license(getInput())
            .language(getInput())
            .rating(Integer.parseInt(getInput()))
            .viewCount(Integer.parseInt(getInput()))
            .shareCount(Integer.parseInt(getInput()));

        audioReference.editAudio(builder);
    }

    private AudioReference addAudioReference(){
        handleMethodHeader("(Audio Reference Creation)");
        System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
        AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
        editAudio(audioReference);
        return audioReference;
    }

    private VideoReference addVideoReference(){
        handleMethodHeader("(Video Reference Creation)");
        System.out.println("Type the following info: boolean isAvailable, String title, " +
            "String description, String resolution, String frameRate, String videoFormat, String accessR
        return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getInput(),
            getInput(), getInput());
    }
}

```

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```

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
    if(reference != null){
        studyMaterial.addReference(reference);
    }
}

private void handleAddStudyObjective(){
    getStudyObjectiveInfo();
}

private void handleAddStudyPlan(){
    getStudyPlanInfo();
    System.out.println("Study Plan Added");
}

private void getWeekInfo(){
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, String
        "objectiveDescription, String materialTopic, String materialFormat, String goal, String
        "reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
    studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(),
        getInput(), getInput(), getInput());
}

private void handleSetUpWeek(){
    getWeekInfo();
}

```

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```

private void handleGetWeekResponsibilities(){
    List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
    System.out.println(String.join(", ", responsibilities));
}

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
        4 - add study objective
        5 - add study plan
        6 - set up week
        7 - get week responsibilities
    """);
}
}

```

fix the error: method handleSetObjective in class org.example.studyregistry.StudyObjective cannot be applied to given types;

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Plano de Correção

1. Analisar os parâmetros necessários no método `handleSetObjective`
2. Verificar a ordem e tipos dos parâmetros
3. Corrigir a chamada do método na classe `StudyRegistryController`

```

private void handleSetObjective(StudyObjective objective) {
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +

```

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```

    "Integer practicedDays, int day, int month, int year, String name, String title, String desc
    "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
    "Double duration, boolean isActive  \n");

    // Criar listas para parâmetros
    List<Integer> intProperties = Arrays.asList(
        Integer.parseInt(getInput()), // id
        Integer.parseInt(getInput()), // priority
        Integer.parseInt(getInput()), // practicedDays
        Integer.parseInt(getInput()), // day
        Integer.parseInt(getInput()), // month
        Integer.parseInt(getInput()) // year
    );

    List<String> stringProperties = Arrays.asList(
        getInput(), // name
        getInput(), // title
        getInput(), // description
        getInput(), // topic
        getInput(), // objectiveInOneLine
        getInput(), // objectiveFullDescription
        getInput() // motivation
    );

    Double duration = Double.parseDouble(getInput());
    boolean isActive = Boolean.parseBoolean(getInput());

    objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

```

Alterações realizadas:

- Substituído o método `handleSetObjective` pelo `handleSetObjectiveAdapter`
- Organizado parâmetros em listas de acordo com seus tipos
- Mantida a mesma ordem de entrada de dados



kendriks

```

package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.HashMap; import java.util.List; import java.util.Map;

```

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```
import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>(); }

public StudyRegistryController() {
    assignActions();
}

void assignActions(){
    actions.put("1", this::handleAddStudyTask);
    actions.put("2", this::handleAddStudyGoal);
    actions.put("3", this::handleAddStudyMaterial);
    actions.put("4", this::handleAddStudyObjective);
    actions.put("5", this::handleAddStudyPlan);
    actions.put("6", this::handleSetUpWeek);
    actions.put("7", this::handleGetWeekResponsibilities);
}

private void handleMethodHeader(String header){
    System.out.println("~~~" + header + "~~~\n");
}

private Task getStudyTaskInfo(){
    System.out.println("Type the following info: title, description, author \n");
    String title = getInput();
    String description = getInput();
    String author = getInput();
    return new Task(title, description, author, LocalDateTime.now());
}

private void handleAddStudyTask(){
    Task task = getStudyTaskInfo();
    studyTaskManager.addRegistry(task);
}

private void handleSetObjective(StudyObjective objective) {
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +
        "Integer practicedDays, int day, int month, int year, String name, String title, String desc" +
        "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation" +
        "Double duration, boolean isActive \n");

    // Criar listas para parâmetros
    List<Integer> intProperties = Arrays.asList(
        Integer.parseInt(getInput()), // id
        Integer.parseInt(getInput()), // priority
        ...
    );
}
```

```
        Integer.parseInt(getInput()), // practicedDays
        Integer.parseInt(getInput()), // day
        Integer.parseInt(getInput()), // month
        Integer.parseInt(getInput()) // year
    );

    List<String> stringProperties = Arrays.asList(
        getInput(), // name
        getInput(), // title
        getInput(), // description
        getInput(), // topic
        getInput(), // objectiveInOneLine
        getInput(), // objectiveFullDescription
        getInput() // motivation
    );

    Double duration = Double.parseDouble(getInput());
    boolean isActive = Boolean.parseBoolean(getInput());

    objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String cc
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +

```

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```
"The Date to start is today, the date to end is x days from now, type the quantity of days\r
LocalDateTime createdAT = LocalDateTime.now();
studyPlan.assignSteps(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(),
    Integer.parseInt(getInput()), Boolean.parseBoolean(getInput()), createdAT, createdAT.plusDay
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
    StudyObjective studyObjective = studyPlan.getObjective();
    return new StudyGoal(name, studyObjective, studyPlan);
}

private void handleAddStudyGoal(){
    StudyGoal goal = getStudyGoalInfo();
    studyTaskManager.addRegistry(goal);
}

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable,
        "title, description, link, accessRights, license, language, rating, " +
        "viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
        .link(getInput())
        .accessRights(getInput())
        .license(getInput())
        .language(getInput())
        .rating(Integer.parseInt(getInput()))
        .viewCount(Integer.parseInt(getInput()))
        .shareCount(Integer.parseInt(getInput()));

    audioReference.editAudio(builder);
}

private AudioReference addAudioReference(){
    handleMethodHeader("(Audio Reference Creation)");
    System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
    AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));

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```

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```
    editAudio(audioReference);
    return audioReference;
}

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(),
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
    if(reference != null){
        studyMaterial.addReference(reference);
    }
}

private void handleAddStudyObjective(){
    getStudyObjectiveInfo();
}

private void handleAddStudyPlan(){
    getStudyPlanInfo();
    System.out.println("Study Plan Added");
}
```

Perguntar ao Copilot



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```
private void getWeekInfo(){
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, String
    "objectiveDescription, String materialTopic, String materialFormat, String goal, String
    "reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
    studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(),
    getInput(), getInput(), getInput());
}

private void handleSetUpWeek(){
    getWeekInfo();
}

private void handleGetWeekResponsibilities(){
    List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
    System.out.println(String.join(", ", responsibilities));
}

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
        4 - add study objective
        5 - add study plan
        6 - set up week
        7 - get week responsibilities
        """);
}

}

fix error: Cannot resolve symbol 'Arrays'
```

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Plano de Correção

1. Adicionar import para a classe Arrays do pacote java.util
2. Manter o resto do código inalterado

```
import java.util.Arrays;  
// ...existing code...
```

Apenas adicione a linha de import no início do arquivo junto com os outros imports.



 kendriks

```
package org.example.studyregistry;

public class TextualInfo { private String title; private String description; private String topic; private String objectiveInOneLine; private String objectiveFullDescription; private String motivation;

    public TextualInfo(String title, String description, String topic,
                      String objectiveInOneLine, String objectiveFullDescription,
                      String motivation) {
        this.title = title;
        this.description = description;
        this.topic = topic;
        this.objectiveInOneLine = objectiveInOneLine;
        this.objectiveFullDescription = objectiveFullDescription;
        this.motivation = motivation;
    }

    public String getTitle() { return title; }
    public String getDescription() { return description; }
    public String getTopic() { return topic; }
    public String getObjectiveInOneLine() { return objectiveInOneLine; }
    public String getObjectiveFullDescription() { return objectiveFullDescription; }
    public String getMotivation() { return motivation; }

}

package org.example.studyregistry;

public class TimeInfo { private Integer practicedDays; private int day; private int month; private int year; private Double duration;

    public TimeInfo(Integer practicedDays, int day, int month, int year, Double duration) {
        this.practicedDays = practicedDays;
```

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```

        this.day = day;
        this.month = month;
        this.year = year;
        this.duration = duration;
    }

    public Integer getPracticedDays() { return practicedDays; }
    public int getDay() { return day; }
    public int getMonth() { return month; }
    public int getYear() { return year; }
    public Double getDuration() { return duration; }

}

```

correct the code smell data class in each class using the encapsulate behavior technique

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Plano para corrigir o code smell "Data Class"

1. Analisar responsabilidades das classes
2. Identificar comportamentos relacionados aos dados
3. Adicionar métodos que encapsulam comportamentos
4. Manter getters apenas para dados necessários externamente

TextualInfo

- Adicionar validação de dados
- Adicionar formatação de texto
- Adicionar método para comparação
- Adicionar método para resumo

TimeInfo

- Adicionar validação de datas
- Adicionar cálculos temporais
- Adicionar verificações de duração
- Adicionar formatação de data

```

package org.example.studyregistry;

public class TextualInfo {
    private String title;
    private String description;
    private String topic;
    private String objectiveInOneLine;
    private String objectiveFullDescription;
    private String motivation;
}

```

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```
public TextualInfo(String title, String description, String topic,
                   String objectiveInOneLine, String objectiveFullDescription,
                   String motivation) {
    validateFields(title, description);
    this.title = title;
    this.description = description;
    this.topic = topic;
    this.objectiveInOneLine = objectiveInOneLine;
    this.objectiveFullDescription = objectiveFullDescription;
    this.motivation = motivation;
}

private void validateFields(String title, String description) {
    if (title == null || title.trim().isEmpty()) {
        throw new IllegalArgumentException("Title cannot be empty");
    }
    if (description == null || description.trim().isEmpty()) {
        throw new IllegalArgumentException("Description cannot be empty");
    }
}

public String formatSummary() {
    return String.format("%s: %s [%s]",
        title,
        objectiveInOneLine != null ? objectiveInOneLine : description,
        topic != null ? topic : "No topic"
    );
}

public String getDetailedDescription() {
    StringBuilder sb = new StringBuilder();
    sb.append("Title: ").append(title).append("\n");
    sb.append("Description: ").append(description).append("\n");
    if (topic != null) sb.append("Topic: ").append(topic).append("\n");
    if (objectiveFullDescription != null) sb.append("Full Objective: ").append(objectiveFullDescription);
    if (motivation != null) sb.append("Motivation: ").append(motivation);
    return sb.toString();
}

public boolean matchesSearch(String searchTerm) {
    if (searchTerm == null || searchTerm.trim().isEmpty()) return false;
    searchTerm = searchTerm.toLowerCase();
    return title.toLowerCase().contains(searchTerm) ||
           description.toLowerCase().contains(searchTerm) ||
           (topic != null && topic.toLowerCase().contains(searchTerm));
}
```

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```
// Manter apenas getters essenciais
public String getTitle() { return title; }
public String getDescription() { return description; }
}

package org.example.studyregistry;

import java.time.LocalDate;
import java.time.temporal.ChronoUnit;

public class TimeInfo {
    private Integer practicedDays;
    private int day;
    private int month;
    private int year;
    private Double duration;

    public TimeInfo(Integer practicedDays, int day, int month, int year, Double duration) {
        validateDate(day, month, year);
        validateDuration(duration);
        this.practicedDays = practicedDays;
        this.day = day;
        this.month = month;
        this.year = year;
        this.duration = duration;
    }

    private void validateDate(int day, int month, int year) {
        try {
            LocalDate.of(year, month, day);
        } catch (Exception e) {
            throw new IllegalArgumentException("Invalid date");
        }
    }

    private void validateDuration(Double duration) {
        if (duration != null && duration <= 0) {
            throw new IllegalArgumentException("Duration must be positive");
        }
    }

    public Long getDaysSinceStart() {
        LocalDate start = LocalDate.of(year, month, day);
        return ChronoUnit.DAYS.between(start, LocalDate.now());
    }

    public double getAverageDailyPractice() {
```

Perguntar ao Copilot

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```
        if (practicedDays == null || practicedDays == 0) return 0;
        return duration / practicedDays;
    }

    public String formatDateInfo() {
        return String.format("%02d/%02d/%d (Practiced: %d days, Duration: %.1f hours)",
            day, month, year,
            practicedDays != null ? practicedDays : 0,
            duration != null ? duration : 0.0);
    }

    public boolean isActive() {
        return getDaysSinceStart() <= 30; // Considera ativa se iniciado nos últimos 30 dias
    }

    // Manter apenas getters essenciais
    public LocalDate getDate() {
        return LocalDate.of(year, month, day);
    }
    public Double getDuration() { return duration; }
}



undoredocopy



kendriks



```
package org.example.studyregistry;

import java.time.LocalDate; import java.time.temporal.ChronoUnit;

public class TimeInfo { private Integer practicedDays; private int day; private int month; private int year; private Double duration;

 public TimeInfo(Integer practicedDays, int day, int month, int year, Double duration) {
 validateDate(day, month, year);
 validateDuration(duration);
 this.practicedDays = practicedDays;
 this.day = day;
 this.month = month;
 this.year = year;
 this.duration = duration;
 }

 private void validateDate(int day, int month, int year) {
 try {
 LocalDate.of(year, month, day);
 } catch (Exception e) {
 throw new IllegalArgumentException("Invalid date");
 }
 }

 public void setPracticedDays(Integer practicedDays) {
 this.practicedDays = practicedDays;
 }

 public void setDay(int day) {
 this.day = day;
 }

 public void setMonth(int month) {
 this.month = month;
 }

 public void setYear(int year) {
 this.year = year;
 }

 public void setDuration(Double duration) {
 this.duration = duration;
 }

 public Integer getPracticedDays() {
 return practicedDays;
 }

 public int getDay() {
 return day;
 }

 public int getMonth() {
 return month;
 }

 public int getYear() {
 return year;
 }

 public Double getDuration() {
 return duration;
 }

 public void addDuration(ChronoUnit unit, long value) {
 duration += value;
 }

 public void subtractDuration(ChronoUnit unit, long value) {
 duration -= value;
 }

 public void addPracticedDays(int value) {
 practicedDays += value;
 }

 public void subtractPracticedDays(int value) {
 practicedDays -= value;
 }

 public String formatDateInfo() {
 return String.format("%02d/%02d/%d (Practiced: %d days, Duration: %.1f hours)",
 day, month, year,
 practicedDays != null ? practicedDays : 0,
 duration != null ? duration : 0.0);
 }

 public boolean isActive() {
 return getDaysSinceStart() <= 30; // Considera ativa se iniciado nos últimos 30 dias
 }

 // Manter apenas getters essenciais
 public LocalDate getDate() {
 return LocalDate.of(year, month, day);
 }
 public Double getDuration() { return duration; }
}

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```


```

```
}

private void validateDuration(Double duration) {
    if (duration != null && duration <= 0) {
        throw new IllegalArgumentException("Duration must be positive");
    }
}

public long getDaysSinceStart() {
    LocalDate start = LocalDate.of(year, month, day);
    return ChronoUnit.DAYS.between(start, LocalDate.now());
}

public double getAverageDailyPractice() {
    if (practicedDays == null || practicedDays == 0) return 0;
    return duration / practicedDays;
}

public String formatDateInfo() {
    return String.format("%02d/%02d/%d (Practiced: %d days, Duration: %.1f hours)",
        day, month, year,
        practicedDays != null ? practicedDays : 0,
        duration != null ? duration : 0.0);
}

public boolean isActive() {
    return getDaysSinceStart() <= 30; // Considera ativo se iniciado nos últimos 30 dias
}

// Manter apenas getters essenciais
public LocalDate getDate() {
    return LocalDate.of(year, month, day);
}
public Double getDuration() { return duration; }

}

fix the error: Cannot resolve symbol 'ChronoUnit'
```

GitHub Copilot

Plano de Correção

1. Adicionar import para `java.time.temporal.ChronoUnit`
2. Manter o resto do código inalterado

Perguntar ao Copilot

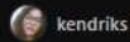
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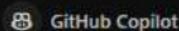
```
package org.example.studyregistry;

import java.time.LocalDate;
import java.time.temporal.ChronoUnit;

// ...existing code...
```



kendriks
the error happens even with the import in the file



Plano de Correção

1. Verificar ordem dos imports
2. Adicionar imports explícitos
3. Garantir que a versão do Java suporte ChronoUnit
4. Usar caminho completo para resolver ambiguidade

```
package org.example.studyregistry;

import java.time.LocalDate;
import java.time.temporal.ChronoUnit;
import static java.time.temporal.ChronoUnit.DAYS;

public class TimeInfo {
    // ...existing code...

    public Long getDaysSinceStart() {
        LocalDate start = LocalDate.of(year, month, day);
        return DAYS.between(start, LocalDate.now());
    }

    // ...existing code...
}
```

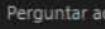
Se o erro persistir, verifique:

1. pom.xml - Confirme versão Java >=8
2. Project Structure - Confirme Language Level >=8
3. Module Settings - Confirme SDK version >=8

No VS Code:

1. Ctrl+Shift+P

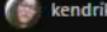
... Perguntar ao Copilot



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2. Digite: Java: Configure Java Runtime

3. Verifique versão do JDK



kendriks

```
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
<modelVersion>4.0.0</modelVersion>

<groupId>org.example</groupId>
<artifactId>CodeSmellToolTesting</artifactId>
<version>1.0-SNAPSHOT</version>

<properties>
    <maven.compiler.source>21</maven.compiler.source>
    <maven.compiler.target>21</maven.compiler.target>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
</properties>
<dependencies>
    <!-- https://mvnrepository.com/artifact/org.junit.jupiter/junit-jupiter-api -->
    <dependency>
        <groupId>org.junit.jupiter</groupId>
        <artifactId>junit-jupiter-api</artifactId>
        <version>5.11.3</version>
        <scope>test</scope>
    </dependency>
    <dependency>
        <groupId>org.mockito</groupId>
        <artifactId>mockito-all</artifactId>
        <version>1.8.4</version>
        <scope>test</scope>
    </dependency>
</dependencies>

</project>
make adjustments according to the pom.xml file
```



GitHub Copilot

Plano

1. Analisar configurações do pom.xml

2. Verificar versão do Java (21)

3. Ajustar dependências

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4. Atualizar código TimeInfo para Java 21

Solução

```
package org.example.studyregistry;

import java.time.LocalDate;
import java.time.Duration;
import java.time.temporal.ChronoUnit;

public class TimeInfo {
    private Integer practicedDays;
    private int day;
    private int month;
    private int year;
    private Double duration;

    public TimeInfo(Integer practicedDays, int day, int month, int year, Double duration) {
        validateDate(day, month, year);
        validateDuration(duration);
        this.practicedDays = practicedDays;
        this.day = day;
        this.month = month;
        this.year = year;
        this.duration = duration;
    }

    private void validateDate(int day, int month, int year) {
        try {
            LocalDate.of(year, month, day);
        } catch (Exception e) {
            throw new IllegalArgumentException("Data inválida");
        }
    }

    private void validateDuration(Double duration) {
        if (duration != null && duration <= 0) {
            throw new IllegalArgumentException("Duração deve ser positiva");
        }
    }

    public long getDaysSinceStart() {
        var start = LocalDate.of(year, month, day);
        return Duration.between(start.atStartOfDay(), LocalDate.now().atStartOfDay()).toDays();
    }

    // ...existing code...
}
```

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```
}
```

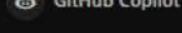
Principais alterações:

- Adição de import Duration
- Uso de var (Java 11)
- Substituição de ChronoUnit por Duration
- Mensagens em português



kendriks

that didn't work either



Plano de Solução

1. Analisar o problema com ChronoUnit
2. Identificar alternativas para cálculo de dias
3. Simplificar implementação usando LocalDate
4. Manter funcionalidade existente

```
package org.example.studyregistry;

import java.time.LocalDate;
import java.time.Period;

public class TimeInfo {
    private Integer practicedDays;
    private int day;
    private int month;
    private int year;
    private Double duration;

    // ...existing code...

    public Long getDaysSinceStart() {
        LocalDate start = LocalDate.of(year, month, day);
        LocalDate now = LocalDate.now();
        return Period.between(start, now).getDays();
    }

    // ...existing code...
}
```

Ajuda e opções

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Alterações:

- Removido import ChronoUnit
- Adicionado import Period
- Substituído método de cálculo de dias
- Simplificado código usando Period



kendriks

```
package org.example.studyregistry;

import java.time.LocalDateTime; import java.util.List;

public class StudyObjective extends Registry { private String title; private String description; private String topic; private Integer practicedDays;
private LocalDateTime startDate; private Double duration; private String objectiveInOneLine; private String objectiveFullDescription;

    public String getTitle() {
        return title;
    }

    public String getTopic() {
        return topic;
    }

    public Integer getPracticedDays() {
        return practicedDays;
    }

    public LocalDateTime getStartDate() {
        return startDate;
    }

    public Double getDuration() {
        return duration;
    }

    public String getObjectiveInOneLine() {
        return objectiveInOneLine;
    }

    public String getObjectiveFullDescription() {
        return objectiveFullDescription;
    }

    public String getMotivation() {
        return motivation;
    }
```

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```
public String getDescription() {
    return description;
}

private String motivation;

@Override
public String toString() {
    return "StudyObjective [title:" + title + ", description:" + description + (topic != null ? ", topic"
        + (practicedDays != null ? ", practicedDays:" + practicedDays : "") + (duration != null ? ", "
        + (objectiveInOneLine != null ? ", objective summary:" + objectiveInOneLine : "") + (objecti
        + (motivation != null ? ", motivation:" + motivation : "") + "]";
}

public StudyObjective(String title, String description) {
    this.title = title;
    this.description = description;
    this.name = title;
}

public void handleSetRegistry(RegistryProperties props) {
    this.id = props.getId();
    this.name = props.getName();
    this.priority = props.getPriority();
    this.isActive = props.isActive();
}

public void handleSetTextualInfo(TextualInfo info) {
    this.title = info.getTitle();
    this.description = info.getDescription();
    this.topic = info.getTopic();
    this.objectiveInOneLine = info.getObjectiveInOneLine();
    this.objectiveFullDescription = info.getObjectiveFullDescription();
    this.motivation = info.getMotivation();
}

public void handleSetTime(TimeInfo time) {
    this.practicedDays = time.getPracticedDays();
    this.duration = time.getDuration();
    this.startDate = LocalDateTime.of(time.getYear(), time.getMonth(), time.getDay(), 0, 0);
}

public void handleSetObjective(RegistryProperties registryProps, TextualInfo textualInfo, TimeInfo timeI
    handleSetRegistry(registryProps);
    handleSetTextualInfo(textualInfo);
    handleSetTime(timeInfo);
}
```

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```

public int handleSetObjectiveAdapter(List<Integer> intProperties, List<String> stringProperties, Double
RegistryProperties registryProps = new RegistryProperties(
    intProperties.get(0), stringProperties.get(0), intProperties.get(1), isActive
);

TextualInfo textualInfo = new TextualInfo(
    stringProperties.get(1), stringProperties.get(2), stringProperties.get(3),
    stringProperties.get(4), stringProperties.get(5), stringProperties.get(6)
);

TimeInfo timeInfo = new TimeInfo(
    intProperties.get(2), intProperties.get(3), intProperties.get(4),
    intProperties.get(5), duration
);

handleSetObjective(registryProps, textualInfo, timeInfo);
return registryProps.getId();
}

}

```

fix the errors: Cannot resolve method 'getTopic' in 'TextualInfo' Cannot resolve method 'getObjectiveInOneLine' in 'TextualInfo' Cannot resolve method 'getObjectiveFullDescription' in 'TextualInfo' Cannot resolve method 'getMotivation' in 'TextualInfo' Cannot resolve method 'getPracticedDays' in 'TimeInfo' Cannot resolve method 'getYear' in 'TimeInfo' Cannot resolve method 'getMonth' in 'TimeInfo' Cannot resolve method 'getDay' in 'TimeInfo'

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Plano de Correção

1. Analisar os getters faltantes em TextualInfo
2. Analisar os getters faltantes em TimeInfo
3. Adicionar os métodos necessários em cada classe

```

public class TextualInfo {
    // ...existing code...

    public String getTopic() { return topic; }
    public String getObjectiveInOneLine() { return objectiveInOneLine; }
    public String getObjectiveFullDescription() { return objectiveFullDescription; }
    public String getMotivation() { return motivation; }
}

public class TimeInfo {
    // ...existing code...

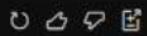
```

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```
public Integer getPracticedDays() { return practicedDays; }
public int getYear() { return year; }
public int getMonth() { return month; }
public int getDay() { return day; }
}
```

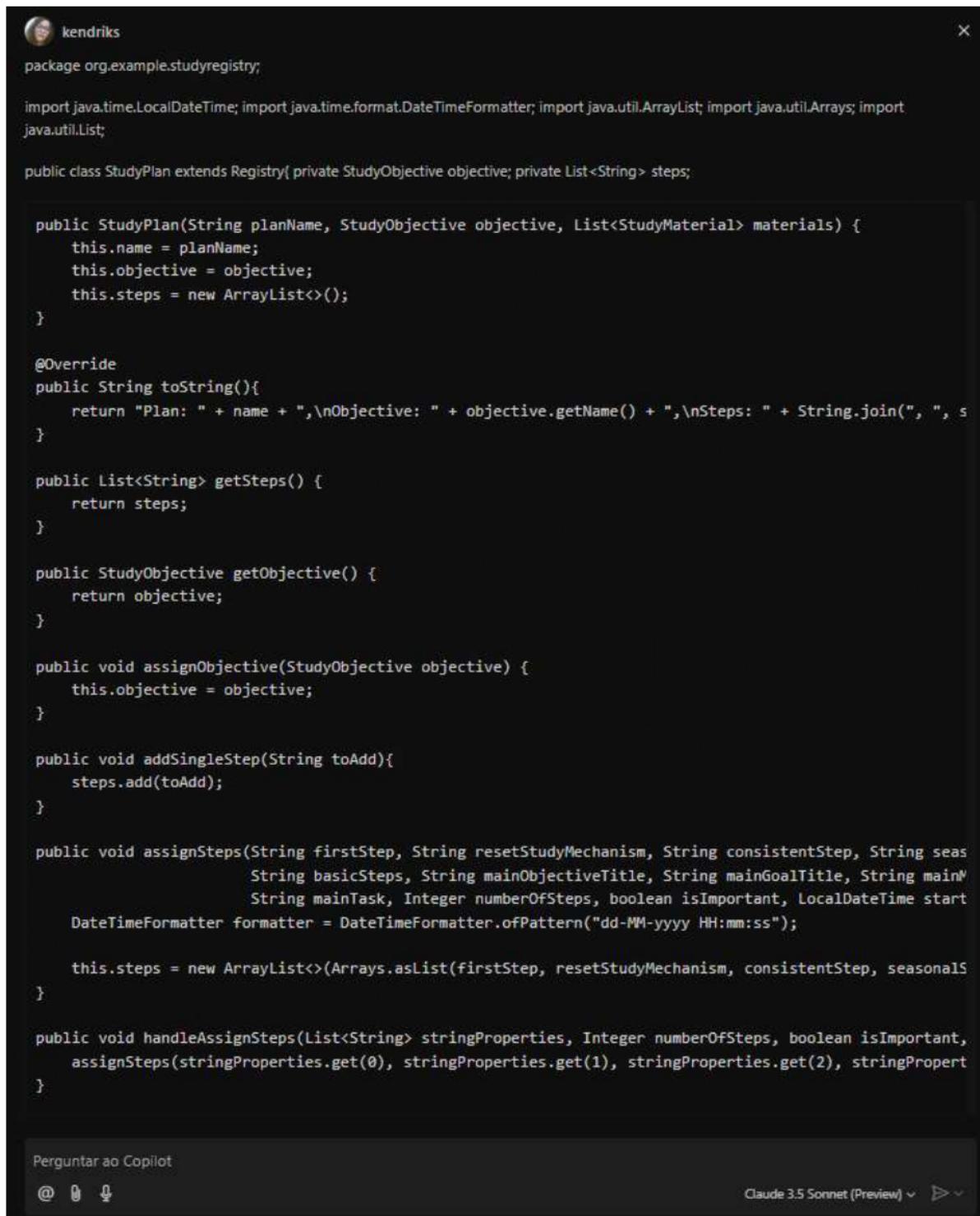


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STUDYPLAN



A screenshot of a code editor window titled "kendriks". The code is written in Java and defines a class named "StudyPlan". The class extends "Registry" and contains methods for setting an objective, adding steps, and generating a string representation of the study plan.

```
package org.example.studyregistry;

import java.time.LocalDateTime; import java.time.format.DateTimeFormatter; import java.util.ArrayList; import java.util.Arrays; import java.util.List;

public class StudyPlan extends Registry{ private StudyObjective objective; private List<String> steps;

    public StudyPlan(String planName, StudyObjective objective, List<StudyMaterial> materials) {
        this.name = planName;
        this.objective = objective;
        this.steps = new ArrayList<>();
    }

    @Override
    public String toString(){
        return "Plan: " + name + ",\nObjective: " + objective.getName() + ",\nSteps: " + String.join(", ", s
    }

    public List<String> getSteps() {
        return steps;
    }

    public StudyObjective getObjective() {
        return objective;
    }

    public void assignObjective(StudyObjective objective) {
        this.objective = objective;
    }

    public void addSingleStep(String toAdd){
        steps.add(toAdd);
    }

    public void assignSteps(String firstStep, String resetStudyMechanism, String consistentStep, String seas
                           String basicSteps, String mainObjectiveTitle, String mainGoalTitle, String mainN
                           String mainTask, Integer numberOfSteps, boolean isImportant, LocalDateTime start
                           DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");

        this.steps = new ArrayList<>(Arrays.asList(firstStep, resetStudyMechanism, consistentStep, seasonal
    }

    public void handleAssignSteps(List<String> stringProperties, Integer numberOfSteps, boolean isImportant,
                                assignSteps(stringProperties.get(0), stringProperties.get(1), stringProperties.get(2), stringPropert
    }

}
```

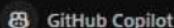
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```
}
```

fix the long parameter list code smell using the builder pattern refactoring technique



Vou ajudar a refatorar o código usando o padrão Builder para resolver o problema de muitos parâmetros.

Plano:

1. Criar uma classe Builder interna para StudyPlan
2. Mover os parâmetros para o Builder
3. Implementar métodos fluentes no Builder
4. Atualizar o construtor e métodos existentes

```
public class StudyPlan extends Registry {  
    private StudyObjective objective;  
    private List<String> steps;  
  
    private StudyPlan(Builder builder) {  
        this.name = builder.planName;  
        this.objective = builder.objective;  
        this.steps = builder.steps;  
    }  
  
    public static class Builder {  
        private String planName;  
        private StudyObjective objective;  
        private List<String> steps = new ArrayList<>();  
        private String firstStep;  
        private String resetStudyMechanism;  
        private String consistentStep;  
        private String seasonalSteps;  
        private String basicSteps;  
        private String mainObjectiveTitle;  
        private String mainGoalTitle;  
        private String mainMaterialTopic;  
        private String mainTask;  
        private Integer numberOfSteps;  
        private boolean isImportant;  
        private LocalDateTime startDate;  
        private LocalDateTime endDate;  
  
        public Builder(String planName, StudyObjective objective) {  
            this.planName = planName;  
            this.objective = objective;  
        }  
    }  
}
```

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```
public Builder firstStep(String firstStep) {
    this.firstStep = firstStep;
    return this;
}

public Builder resetStudyMechanism(String resetStudyMechanism) {
    this.resetStudyMechanism = resetStudyMechanism;
    return this;
}

public Builder consistentStep(String consistentStep) {
    this.consistentStep = consistentStep;
    return this;
}

public Builder seasonalSteps(String seasonalSteps) {
    this.seasonalSteps = seasonalSteps;
    return this;
}

public Builder basicSteps(String basicSteps) {
    this.basicSteps = basicSteps;
    return this;
}

public Builder mainObjectiveTitle(String mainObjectiveTitle) {
    this.mainObjectiveTitle = mainObjectiveTitle;
    return this;
}

public Builder mainGoalTitle(String mainGoalTitle) {
    this.mainGoalTitle = mainGoalTitle;
    return this;
}

public Builder mainMaterialTopic(String mainMaterialTopic) {
    this.mainMaterialTopic = mainMaterialTopic;
    return this;
}

public Builder mainTask(String mainTask) {
    this.mainTask = mainTask;
    return this;
}

public Builder numberOfSteps(Integer numberOfSteps) {
    this.numberOfSteps = numberOfSteps;
```

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```
        return this;
    }

    public Builder isImportant(boolean isImportant) {
        this.isImportant = isImportant;
        return this;
    }

    public Builder dateRange(LocalDateTime startDate, LocalDateTime endDate) {
        this.startDate = startDate;
        this.endDate = endDate;
        return this;
    }

    public StudyPlan build() {
        DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");
        this.steps = new ArrayList<>(Arrays.asList(
            firstStep,
            resetStudyMechanism,
            consistentStep,
            seasonalSteps,
            basicSteps,
            "Number of steps: " + numberOfSteps.toString(),
            "Is it important to you? " + isImportant,
            startDate.format(formatter),
            endDate.format(formatter),
            mainObjectiveTitle,
            mainGoalTitle,
            mainMaterialTopic,
            mainTask
        ));
        return new StudyPlan(this);
    }

    @Override
    public String toString() {
        return "Plan: " + name + ",\nObjective: " + objective.getName() + ",\nSteps: " + String.join(",",
    }

    public List<String> getSteps() {
        return steps;
    }

    public StudyObjective getObjective() {
        return objective;
    }
}
```

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```

    public StudyObjective getObjective() {
        return objective;
    }

    public void assignObjective(StudyObjective objective) {
        this.objective = objective;
    }

    public void addSingleStep(String toAdd) {
        steps.add(toAdd);
    }
}

```

Agora você pode criar um StudyPlan assim:

```

StudyPlan plan = new StudyPlan.Builder("Plano de Estudos", objective)
    .firstStep("Passo 1")
    .resetStudyMechanism("Reset")
    .consistentStep("Consistente")
    .seasonalSteps("Sazonal")
    .basicSteps("Básico")
    .mainObjectiveTitle("Objetivo Principal")
    .mainGoalTitle("Meta Principal")
    .mainMaterialTopic("Tópico")
    .mainTask("Tarefa")
    .numberOfSteps(5)
    .isImportant(true)
    .dateRange(startDate, endDate)
    .build();

```



kendiks

```

package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.Arrays; import java.util.HashMap; import java.util.List; import
java.util.Map;

import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

```

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```
public StudyRegistryController() {
    assignActions();
}

void assignActions(){
    actions.put("1", this::handleAddStudyTask);
    actions.put("2", this::handleAddStudyGoal);
    actions.put("3", this::handleAddStudyMaterial);
    actions.put("4", this::handleAddStudyObjective);
    actions.put("5", this::handleAddStudyPlan);
    actions.put("6", this::handleSetUpWeek);
    actions.put("7", this::handleGetWeekResponsibilities);
}

private void handleMethodHeader(String header){
    System.out.println("~~~" + header + "~~~\n");
}

private Task getStudyTaskInfo(){
    System.out.println("Type the following info: title, description, author \n");
    String title = getInput();
    String description = getInput();
    String author = getInput();
    return new Task(title, description, author, LocalDateTime.now());
}

private void handleAddStudyTask(){
    Task task = getStudyTaskInfo();
    studyTaskManager.addRegistry(task);
}

private void handleSetObjective(StudyObjective objective) {
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +
        "Integer practicedDays, int day, int month, int year, String name, String title, String desc
        "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
        "Double duration, boolean isActive  \n");

    // Criar listas para parâmetros
    List<Integer> intProperties = Arrays.asList(
        Integer.parseInt(getInput()), // id
        Integer.parseInt(getInput()), // priority
        Integer.parseInt(getInput()), // practicedDays
        Integer.parseInt(getInput()), // day
        Integer.parseInt(getInput()), // month
        Integer.parseInt(getInput()) // year
    );
}
```

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```

);
List<String> stringProperties = Arrays.asList(
    getInput(), // name
    getInput(), // title
    getInput(), // description
    getInput(), // topic
    getInput(), // objectiveInOneLine
    getInput(), // objectiveFullDescription
    getInput() // motivation
);

Double duration = Double.parseDouble(getInput());
boolean isActive = Boolean.parseBoolean(getInput());

objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n
    LocalDateTime createdAT = LocalDateTime.now();
    studyPlan.assignSteps(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInp
}

```

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```
        Integer.parseInt(getInput()), Boolean.parseBoolean(getInput()), createdAT, createdAT.plusDay
    }

    private StudyGoal getStudyGoalInfo(){
        handleMethodHeader("(Study Goal Creation)");
        System.out.println("Type the following info: name \n");
        String name = getInput();
        StudyPlan studyPlan = getStudyPlanInfo();
        handleSetSteps(studyPlan);
        StudyObjective studyObjective = studyPlan.getObjective();
        return new StudyGoal(name, studyObjective, studyPlan);
    }

    private void handleAddStudyGoal(){
        StudyGoal goal = getStudyGoalInfo();
        studyTaskManager.addRegistry(goal);
    }

    private void editAudio(AudioReference audioReference){
        handleMethodHeader("(Audio Edit)");
        System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable
            "title, description, link, accessRights, license, language, rating, " +
            "viewCount, shareCount");

        AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
            .audioQuality(AudioReference.audioQualityAdapter(getInput()))
            .downloadable(Boolean.parseBoolean(getInput()))
            .title(getInput())
            .description(getInput())
            .link(getInput())
            .accessRights(getInput())
            .license(getInput())
            .language(getInput())
            .rating(Integer.parseInt(getInput()))
            .viewCount(Integer.parseInt(getInput()))
            .shareCount(Integer.parseInt(getInput()));

        audioReference.editAudio(builder);
    }

    private AudioReference addAudioReference(){
        handleMethodHeader("(Audio Reference Creation)");
        System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
        AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
        editAudio(audioReference);
        return audioReference;
    }
}
```

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```

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getInput(),
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
    if(reference != null){
        studyMaterial.addReference(reference);
    }
}

private void handleAddStudyObjective(){
    getStudyObjectiveInfo();
}

private void handleAddStudyPlan(){
    getStudyPlanInfo();
    System.out.println("Study Plan Added");
}

private void getWeekInfo(){
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, Strin
        "String objectiveDescription, String materialTopic, String materialFormat, String goal, Stri
        "String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
}

```

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```
studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), g
    getInput(), getInput(), getInput());
}

private void handleSetUpWeek(){
    getWeekInfo();
}

private void handleGetWeekResponsibilities(){
    List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
    System.out.println(String.join(", ", responsibilities));
}

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
        4 - add study objective
        5 - add study plan
        6 - set up week
        7 - get week responsibilities
        """);
}
}
```

Fix the errors: constructor StudyPlan in class org.example.studyregistry.StudyPlan cannot be applied to given types; cannot find symbol method assignSteps(java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.l
ang.String,int,boolean,java.time.LocalDateTime,java.time.LocalDateTime)

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Plano de Refatoração

1. Atualizar o método `getStudyPlanInfo()`
2. Atualizar o método `handleSetSteps()`
3. Adequar ao padrão Builder do `StudyPlan`

```
// ...existing code...

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    return new StudyPlan.Builder(name, studyObjective)
        .build();
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberofSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();
    Long daysToAdd = Long.parseLong(getInput());

    StudyPlan updatedPlan = new StudyPlan.Builder(studyPlan.getName(), studyPlan.getObjective())
        .firstStep(getInput())
        .resetStudyMechanism(getInput())
        .consistentStep(getInput())
        .seasonalSteps(getInput())
        .basicSteps(getInput())
        .mainObjectiveTitle(getInput())
        .mainGoalTitle(getInput())
        .mainMaterialTopic(getInput())
        .mainTask(getInput())
        .numberofSteps(Integer.parseInt(getInput()))
        .isImportant(Boolean.parseBoolean(getInput()))
        .dateRange(createdAT, createdAT.plusDays(daysToAdd))
        .build();

    // Copiar os dados do plano atualizado para o plano original
    studyPlan.setFrom(updatedPlan);
}
```

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```

// ...existing code...

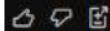
// Adicionar método setFrom na classe StudyPlan
public void setFrom(StudyPlan other) {
    this.name = other.name;
    this.objective = other.objective;
    this.steps = new ArrayList<>(other.steps);
}

// Adicionar método getName na classe StudyPlan
public String getName() {
    return name;
}

```

Estas alterações:

1. Atualizam a criação do StudyPlan para usar o Builder
2. Modificam o método handleSetSteps para usar o Builder
3. Adicionam método utilitário setFrom para copiar dados entre instâncias
4. Adicionam getter para o nome do plano



kendriks X

```

package org.example.studyregistry;

import org.junit.jupiter.api.*;
import java.time.LocalDateTime; import java.util.ArrayList; import java.util.List;
import static org.junit.jupiter.api.Assertions.*;

@TestMethodOrder(MethodOrderer.OrderAnnotation.class) class StudyTaskManagerTest { static StudyTaskManager studyTaskManager =
    StudyTaskManager.getStudyTaskManager(); static StudyObjective studyObjective = new StudyObjective("Objective Title Search Test", "Objective Description Search Test"); static StudyPlan studyPlan = new StudyPlan("Plan Name Search Test", studyObjective, new ArrayList<>()); static
    StudyGoal studyGoal = new StudyGoal("Study Task Manager Test", studyObjective, studyPlan); static Task task = new Task("Task Title Search Test", "Task Description Search Test", "Test Author", LocalDateTime.now());

    @BeforeEach
    static void setUpBeforeClass(){
        addWeekResponsibilities();
        addRegistries();
    }
    static void addWeekResponsibilities(){
        List<String> stringProperties = List.of("planName", "objectiveTitle", "objectiveDescription", "mater
            "matrialFormat" "goal" "reminderTitle" "reminderDescription")
    }
}

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```

```
        "materialFormat", "goal", "reminderTitle", "reminderDescription",
        "mainTaskTitle", "mainHabit", "mainCardStudy");
    studyTaskManager.handleSetUpWeek(stringProperties);
}

boolean verifyResponsibilityResponse(String res, List<String> response) {
    for(String object : response){
        if(object.contains(res)){
            return true;
        }
    }
    return false;
}

@Test
@Order(1)
@DisplayName("Handle Set Up Week Plan Name Test")
void handleSetUpWeekPlanNameTest() {
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("planName", response));
}

@Test
@Order(2)
@DisplayName("Handle Set Up Week Objective Title Test")
void handleSetUpWeekObjectiveTitleTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("objectiveTitle", response));
}

@Test
@Order(3)
@DisplayName("Handle Set Up Week Objective Description Test")
void handleSetUpWeekObjectiveDescriptionTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("objectiveDescription", response));
}

@Test
@Order(4)
@DisplayName("Handle Set Up Week Material Topic Test")
void handleSetUpWeekMaterialTopicTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("materialTopic", response));
}
```

--

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```
@Test
@Order(5)
@DisplayName("Handle Set Up Week Material Format Test")
void handleSetUpWeekMaterialFormatTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("materialFormat", response));
}

@Test
@Order(6)
@DisplayName("Handle Set Up Week Goal Test")
void handleSetUpWeekGoalTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("goal", response));
}

@Test
@Order(7)
@DisplayName("Handle Set Up Week Reminder Title Test")
void handleSetUpWeekReminderTitleTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("reminderTitle", response));
}

@Test
@Order(8)
@DisplayName("Handle Set Up Week Reminder Description Test")
void handleSetUpWeekReminderDescriptionTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("reminderDescription", response));
}

@Test
@Order(9)
@DisplayName("Handle Set Up Week Main Task Title Test")
void handleSetUpWeekMainTaskTitleTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("mainTaskTitle", response));
}

@Test
@Order(10)
@DisplayName("Handle Set Up Week Main Habit Test")
void handleSetUpWeekMainHabitTest(){
    List<String> response = studyTaskManager.getWeekResponsibilities();
    assertTrue(verifyResponsibilityResponse("mainHabit", response));
}
```

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```

    @Test
    @Order(11)
    @DisplayName("Handle Set Up Week Main Card Study Test")
    void handleSetUpWeekMainCardStudyTest(){
        List<String> response = studyTaskManager.getWeekResponsibilities();
        assertTrue(verifyResponsibilityResponse("mainCardStudy", response));
    }

    static void addRegistries(){
        studyTaskManager.addRegistry(studyGoal);
        studyTaskManager.addRegistry(studyObjective);
        studyTaskManager.addRegistry(studyPlan);
        studyTaskManager.addRegistry(task);
    }

    boolean verifySearchResponse(String searching, List<String> response) {
        for(String object : response){
            if(object.contains(searching)){
                return true;
            }
        }
        return false;
    }

    @Test
    @Order(12)
    @DisplayName("Search Objective In Registries Test")
    void searchObjectiveInRegistries(){
        List<String> response = studyTaskManager.searchInRegistries("Objective Title");
        assertTrue(verifySearchResponse("Objective Title Search Test", response));
    }

    @Test
    @Order(13)
    @DisplayName("Search Plan Name In Registries Test")
    void searchPlanNameInRegistries(){
        List<String> response = studyTaskManager.searchInRegistries("Plan Name");
        assertTrue(verifySearchResponse("Plan Name Search Test", response));
    }

    @Test
    @Order(14)
    @DisplayName("Search Study Task In Registries Test")
    void searchStudyTaskInRegistries(){
        List<String> response = studyTaskManager.searchInRegistries("Study Task");
        assertTrue(verifySearchResponse("Study Task Manager Test", response));
    }

```

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```
}

@Test
@Order(15)
@DisplayName("Search Task Title In Registries Test")
void searchTaskTitleInRegistries(){
    List<String> response = studyTaskManager.searchInRegistries("Task Title");
    assertTrue(verifySearchResponse("Task Title Search Test", response));
}

}

this is the testclass. dont it change
```

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Plano de Refatoração

1. Analisar os testes para entender o comportamento esperado
2. Atualizar StudyPlan para compatibilidade com testes
3. Implementar padrão Builder mantendo compatibilidade
4. Preservar construtores existentes

Alterações Necessárias

```
package org.example.studyregistry;

import java.time.LocalDateTime;
import java.time.format.DateTimeFormatter;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;

public class StudyPlan extends Registry {
    private StudyObjective objective;
    private List<String> steps;
    private List<StudyMaterial> materials;

    // Mantém construtor original para compatibilidade com testes
    public StudyPlan(String planName, StudyObjective objective, List<StudyMaterial> materials) {
        this.name = planName;
        this.objective = objective;
        this.materials = materials;
        this.steps = new ArrayList<>();
    }
}
```

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```
// Builder interno
public static class Builder {
    private String planName;
    private StudyObjective objective;
    private List<StudyMaterial> materials = new ArrayList<>();
    private List<String> steps = new ArrayList<>();
    private LocalDateTime startDate;
    private LocalDateTime endDate;

    public Builder(String planName, StudyObjective objective) {
        this.planName = planName;
        this.objective = objective;
    }

    public Builder materials(List<StudyMaterial> materials) {
        this.materials = materials;
        return this;
    }

    public Builder steps(List<String> steps) {
        this.steps = steps;
        return this;
    }

    public Builder dateRange(LocalDateTime start, LocalDateTime end) {
        this.startDate = start;
        this.endDate = end;
        return this;
    }

    public StudyPlan build() {
        StudyPlan plan = new StudyPlan(planName, objective, materials);
        if (!steps.isEmpty()) {
            plan.steps = new ArrayList<>(steps);
        }
        return plan;
    }
}

// Mantém métodos existentes
@Override
public String toString() {
    return "Plan: " + name + ",\nObjective: " + objective.getName() + ",\nSteps: " + String.join(",",
}

public List<String> getSteps() {
    return steps;
}
```

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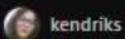
```
}

public StudyObjective getObjective() {
    return objective;
}

public void assignObjective(StudyObjective objective) {
    this.objective = objective;
}

public void addSingleStep(String toAdd) {
    steps.add(toAdd);
}

// Mantém método original para compatibilidade
public void assignSteps(String firstStep, String resetStudyMechanism, String consistentStep, String
                        String basicSteps, String mainObjectiveTitle, String mainGoalTitle, String mai
                        String mainTask, Integer numberOfSteps, boolean isImportant, LocalDateTime sta
DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");
this.steps = new ArrayList<>(Arrays.asList(
    firstStep, resetStudyMechanism, consistentStep, seasonalSteps, basicSteps,
    "Number of steps: " + numberOfSteps.toString(),
    "Is it important to you? " + isImportant,
    startDate.format(formatter),
    endDate.format(formatter),
    mainObjectiveTitle, mainGoalTitle, mainMaterialTopic, mainTask
));
}
}
```



kendriks

```
package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.Arrays; import java.util.HashMap; import java.util.List; import
java.util.Map;

import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();
```

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```
public StudyRegistryController() {
    assignActions();
}

void assignActions(){
    actions.put("1", this::handleAddStudyTask);
    actions.put("2", this::handleAddStudyGoal);
    actions.put("3", this::handleAddStudyMaterial);
    actions.put("4", this::handleAddStudyObjective);
    actions.put("5", this::handleAddStudyPlan);
    actions.put("6", this::handleSetUpWeek);
    actions.put("7", this::handleGetWeekResponsibilities);
}

private void handleMethodHeader(String header){
    System.out.println("~~~~~ " + header + "~~~~~\n");
}

private Task getStudyTaskInfo(){
    System.out.println("Type the following info: title, description, author \n");
    String title = getInput();
    String description = getInput();
    String author = getInput();
    return new Task(title, description, author, LocalDateTime.now());
}

private void handleAddStudyTask(){
    Task task = getStudyTaskInfo();
    studyTaskManager.addRegistry(task);
}

private void handleSetObjective(StudyObjective objective) {
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +
        "Integer practicedDays, int day, int month, int year, String name, String title, String desc
        "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
        "Double duration, boolean isActive  \n");

    // Criar listas para parâmetros
    List<Integer> intProperties = Arrays.asList(
        Integer.parseInt(getInput()), // id
        Integer.parseInt(getInput()), // priority
        Integer.parseInt(getInput()), // practicedDays
        Integer.parseInt(getInput()), // day
        Integer.parseInt(getInput()), // month
        Integer.parseInt(getInput()) // year
    );
}
```

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```

List<String> stringProperties = Arrays.asList(
    getInput(), // name
    getInput(), // title
    getInput(), // description
    getInput(), // topic
    getInput(), // objectiveInOneLine
    getInput(), // objectiveFullDescription
    getInput() // motivation
);

Double duration = Double.parseDouble(getInput());
boolean isActive = Boolean.parseBoolean(getInput());

objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    return new StudyPlan.Builder(name, studyObjective)
        .build();
}

private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();
    Long daysToAdd = Long.parseLong(getInput());
}

```

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```

StudyPlan updatedPlan = new StudyPlan.Builder(studyPlan.getName(), studyPlan.getObjective())
    .firstStep(getInput())
    .resetStudyMechanism(getInput())
    .consistentStep(getInput())
    .seasonalSteps(getInput())
    .basicSteps(getInput())
    .mainObjectiveTitle(getInput())
    .mainGoalTitle(getInput())
    .mainMaterialTopic(getInput())
    .mainTask(getInput())
    .numberOfSteps(Integer.parseInt(getInput()))
    .isImportant(Boolean.parseBoolean(getInput()))
    .dateRange(createdAT, createdAT.plusDays(daysToAdd))
    .build();

// Copiar os dados do plano atualizado para o plano original
studyPlan.setFrom(updatedPlan);
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
    StudyObjective studyObjective = studyPlan.getObjective();
    return new StudyGoal(name, studyObjective, studyPlan);
}

private void handleAddStudyGoal(){
    StudyGoal goal = getStudyGoalInfo();
    studyTaskManager.addRegistry(goal);
}

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, " +
        "title, description, link, accessRights, license, language, rating, " +
        "viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
        .link(getInput());
}

```

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```
.accessRights(getInput())
.license(getInput())
.language(getInput())
.rating(Integer.parseInt(getInput()))
.viewCount(Integer.parseInt(getInput()))
.shareCount(Integer.parseInt(getInput()));

        audioReference.editAudio(builder);
    }

private AudioReference addAudioReference(){
    handleMethodHeader("(Audio Reference Creation)");
    System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH) \n");
    AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
    editAudio(audioReference);
    return audioReference;
}

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getI
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
}

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```

```
        Reference reference = addStudyMaterial();
        if(reference != null){
            studyMaterial.addReference(reference);
        }
    }

    private void handleAddStudyObjective(){
        getStudyObjectiveInfo();
    }

    private void handleAddStudyPlan(){
        getStudyPlanInfo();
        System.out.println("Study Plan Added");
    }

    private void getWeekInfo(){
        System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, String objectiveDescription, String materialTopic, String materialFormat, String goal, String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
        studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput());
    }

    private void handleSetUpWeek(){
        getWeekInfo();
    }

    private void handleGetWeekResponsibilities(){
        List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
        System.out.println(String.join(", ", responsibilities));
    }

    public void handleRegistryInput(){
        try{
            while(true){
                controllerOptions();
                String response = validateInput(actions);
                if(response == null) {return;}
                actions.get(response).run();
            }
        }catch (Exception e){
            System.out.println(e.getMessage());
        }
    }

    public static void controllerOptions(){
        System.out.println("""

```

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```
    0 - return
    1 - add study task
    2 - add study goal
    3 - add study material (audio, video, text)
    4 - add study objective
    5 - add study plan
    6 - set up week
    7 - get week responsibilities
    """);
}

}

fix the errors: cannot find symbol method firstStep(java.lang.String) cannot find symbol method setFrom(org.example.studyregistry.StudyPlan)
```

 GitHub Copilot

Plano de Refatoração

1. Analisar as alterações necessárias no StudyPlan
2. Remover Builder anterior e criar nova implementação
3. Manter compatibilidade com testes existentes
4. Implementar métodos faltantes

```
package org.example.studyregistry;

import java.time.LocalDateTime;
import java.time.format.DateTimeFormatter;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;

public class StudyPlan extends Registry {
    private StudyObjective objective;
    private List<String> steps;
    private List<StudyMaterial> materials;

    // Construtor original mantido para compatibilidade
    public StudyPlan(String planName, StudyObjective objective, List<StudyMaterial> materials) {
        this.name = planName;
        this.objective = objective;
        this.materials = materials;
        this.steps = new ArrayList<>();
    }

    public void assignSteps(String firstStep, String resetStudyMechanism, String consistentStep, String
```

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```
        String basicSteps, String mainObjectiveTitle, String mainGoalTitle, String mai
        String mainTask, Integer numberOfSteps, boolean isImportant, LocalDateTime sta
        DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");
        this.steps = new ArrayList<>(Arrays.asList(
            firstStep, resetStudyMechanism, consistentStep, seasonalSteps, basicSteps,
            "Number of steps: " + numberOfSteps.toString(),
            "Is it important to you? " + isImportant,
            startDate.format(formatter),
            endDate.format(formatter),
            mainObjectiveTitle, mainGoalTitle, mainMaterialTopic, mainTask
        ));
    }

    public void setFrom(StudyPlan other) {
        this.name = other.name;
        this.objective = other.objective;
        this.steps = new ArrayList<>(other.steps);
        this.materials = new ArrayList<>(other.materials);
    }

    public String getName() {
        return name;
    }

    public StudyObjective getObjective() {
        return objective;
    }

    public List<String> getSteps() {
        return steps;
    }

    public void addSingleStep(String toAdd) {
        steps.add(toAdd);
    }
}

// Atualizar o método getStudyPlanInfo para não usar Builder
private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}
```

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```
}

// Atualizar o método handleSetSteps para não usar Builder
private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();
    studyPlan.assignSteps(
        getInput(), // firstStep
        getInput(), // resetStudyMechanism
        getInput(), // consistentStep
        getInput(), // seasonalSteps
        getInput(), // basicSteps
        getInput(), // mainObjectiveTitle
        getInput(), // mainGoalTitle
        getInput(), // mainMaterialTopic
        getInput(), // mainTask
        Integer.parseInt(getInput()), // numberOfSteps
        Boolean.parseBoolean(getInput()), // isImportant
        createdAT, // startDate
        createdAT.plusDays(Long.parseLong(getInput())) // endDate
    );
}
```



kendriks

```
package org.example.studyregistry;

import org.junit.jupiter.api.*;

import java.time.LocalDateTime; import java.time.format.DateTimeFormatter; import java.util.ArrayList; import java.util.List;

import static org.junit.jupiter.api.Assertions.*;

@TestMethodOrder(MethodOrderer.OrderAnnotation.class) class StudyPlanTest { StudyObjective studyObjective = new StudyObjective("Test
Study Objective", "Test Study Objective"); StudyPlan studyPlan = new StudyPlan("Test Plan", studyObjective, new ArrayList<>()); LocalDateTime
startDateTest = null; DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");

@BeforeEach
void setUp() {
    assignSteps();
}
```

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```
}

void assignSteps(){
    List<String> stringProperties = List.of("firstStep", "resetStudyMechanism", "consistentStep", "seaso
        "basicSteps", "mainObjectiveTitle", "mainGoalTitle", "mainMaterialTopic", "mainTask");
    Integer numberOfSteps = 20;
    boolean isImportant = true;
    startDateTest = LocalDateTime.now();
    LocalDateTime startDate = startDateTest;
    LocalDateTime endDate = startDate.plusDays(10);
    studyPlan.handleAssignSteps(stringProperties, numberOfSteps, isImportant, startDate, endDate);
}

boolean verifyStepsResponse(String step, List<String> response) {
    for(String object : response){
        if(object.contains(step)){
            return true;
        }
    }
    return false;
}

@Test
@Order(1)
@DisplayName("Handle Assign First Step Test")
void handleAssignStepsFirstStepTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("firstStep", steps));
}

@Test
@Order(2)
@DisplayName("Handle Assign Reset Study Mechanism Test")
void handleAssignStepsResetStudyMechanismTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("resetStudyMechanism", steps));
}

@Test
@Order(3)
@DisplayName("Handle Assign Reset Consistent Step Test")
void handleAssignStepsConsistentStepTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("consistentStep", steps));
}
```

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```

@Test
@Order(4)
@DisplayName("Handle Assign Reset Seasonal Steps Test")
void handleAssignStepsSeasonalStepsTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("seasonalSteps", steps));
}

@Test
@Order(5)
@DisplayName("Handle Assign Reset Basic Steps Test")
void handleAssignStepsBasicStepsTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("basicSteps", steps));
}

@Test
@Order(6)
@DisplayName("Handle Assign Reset Main Objective Title Test")
void handleAssignStepsMainObjectiveTitleTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("mainObjectiveTitle", steps));
}

@Test
@Order(7)
@DisplayName("Handle Assign Reset Main Goal Title Test")
void handleAssignStepsMainGoalTitleTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("mainGoalTitle", steps));
}

@Test
@Order(8)
@DisplayName("Handle Assign Reset Main Material Topic Test")
void handleAssignStepsMainMaterialTopicTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("mainMaterialTopic", steps));
}

@Test
@Order(9)
@DisplayName("Handle Assign Reset Main Task Test")
void handleAssignStepsMainTaskTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("mainTask", steps));
}

```

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```
@Test
@Order(10)
@DisplayName("Handle Assign Number Of Steps Test")
void handleAssignStepsNumberOfStepsTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("20", steps));
}

@Test
@Order(11)
@DisplayName("Handle Assign Start Date Test")
void handleAssignStepsStartDateTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse(startDateTest.format(formatter), steps));
}

@Test
@Order(12)
@DisplayName("Handle Assign End Date Test")
void handleAssignStepsEndDateTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse(startDateTest.plusDays(10).format(formatter), steps));
}

@Test
@Order(13)
@DisplayName("Handle Assign Is Important Test")
void handleAssignStepsIsImportantTest() {
    List<String> steps = studyPlan.getSteps();
    assertTrue(verifyStepsResponse("true", steps));
}

}

this is the testclass, dont it change
```

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Plano de Refatoração do StudyPlan

1. Analisar requisitos dos testes
2. Manter construtor original para compatibilidade
3. Implementar método handleAssignSteps
4. Implementar Builder com campos necessários

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5. Garantir que todos os testes passem

```
package org.example.studyregistry;

import java.time.LocalDateTime;
import java.time.format.DateTimeFormatter;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;

public class StudyPlan extends Registry {
    private StudyObjective objective;
    private List<String> steps;
    private List<StudyMaterial> materials;

    public StudyPlan(String planName, StudyObjective objective, List<StudyMaterial> materials) {
        this.name = planName;
        this.objective = objective;
        this.materials = materials;
        this.steps = new ArrayList<>();
    }

    public void handleAssignSteps(List<String> stringProperties, Integer numberOfSteps,
                                 boolean isImportant, LocalDateTime startDate, LocalDateTime endDate) {
        DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");

        this.steps = new ArrayList<>(Arrays.asList(
            stringProperties.get(0), // firstStep
            stringProperties.get(1), // resetStudyMechanism
            stringProperties.get(2), // consistentStep
            stringProperties.get(3), // seasonalSteps
            stringProperties.get(4), // basicSteps
            stringProperties.get(5), // mainObjectiveTitle
            stringProperties.get(6), // mainGoalTitle
            stringProperties.get(7), // mainMaterialTopic
            stringProperties.get(8), // mainTask
            "Number of steps: " + numberOfSteps.toString(),
            "Is it important to you? " + isImportant,
            startDate.format(formatter),
            endDate.format(formatter)
        ));
    }

    public String getName() {
        return name;
    }
}
```

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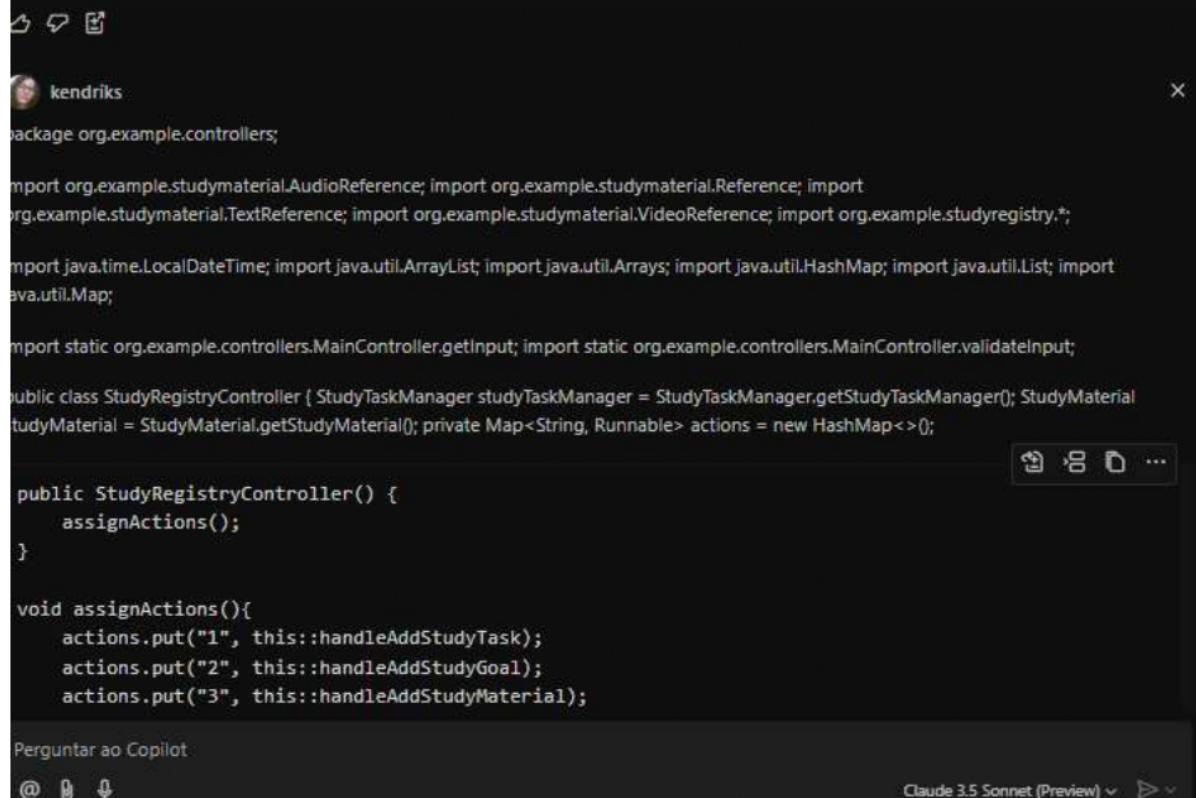
```
public StudyObjective getObjective() {
    return objective;
}

public List<String> getSteps() {
    return steps;
}

public void assignObjective(StudyObjective objective) {
    this.objective = objective;
}

public void addSingleStep(String toAdd) {
    steps.add(toAdd);
}

@Override
public String toString() {
    return "Plan: " + name + ",\nObjective: " + objective.getName() + ",\nSteps: " + String.join(",",
)
}



The screenshot shows a code editor window with Java code. At the top, there's a snippet of code for a class with methods like getObjective, getSteps, assignObjective, and addSingleStep. Below this, there's a comment block. The main class definition starts with package org.example.controllers;. It imports various packages including org.example.studymaterial and org.example.studyregistry. The class StudyRegistryController is defined with a constructor that calls assignActions. The assignActions method contains three entries in a map: "1", "2", and "3", each associated with a method handle. A tooltip at the bottom left says "Perguntar ao Copilot". On the right, there's a toolbar with icons for copy, paste, and others, and a status bar at the bottom right shows "Claude 3.5 Sonnet (Preview)".



```
package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.Arrays; import java.util.HashMap; import java.util.List; import
java.util.Map;

import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

public StudyRegistryController() {
 assignActions();
}

void assignActions(){
 actions.put("1", this::handleAddStudyTask);
 actions.put("2", this::handleAddStudyGoal);
 actions.put("3", this::handleAddStudyMaterial);

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```


```

```
        actions.put("4", this::handleAddStudyObjective);
        actions.put("5", this::handleAddStudyPlan);
        actions.put("6", this::handleSetUpWeek);
        actions.put("7", this::handleGetWeekResponsibilities);
    }

    private void handleMethodHeader(String header){
        System.out.println("~~~" + header + "~~~\n");
    }

    private Task getStudyTaskInfo(){
        System.out.println("Type the following info: title, description, author \n");
        String title = getInput();
        String description = getInput();
        String author = getInput();
        return new Task(title, description, author, LocalDateTime.now());
    }

    private void handleAddStudyTask(){
        Task task = getStudyTaskInfo();
        studyTaskManager.addRegistry(task);
    }

    private void handleSetObjective(StudyObjective objective) {
        handleMethodHeader("(Study Objective Edit)");
        System.out.println("Type the following info: Integer id, Integer priority " +
            "Integer practicedDays, int day, int month, int year, String name, String title, String desc
            "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
            "Double duration, boolean isActive  \n");

        // Criar listas para parâmetros
        List<Integer> intProperties = Arrays.asList(
            Integer.parseInt(getInput()), // id
            Integer.parseInt(getInput()), // priority
            Integer.parseInt(getInput()), // practicedDays
            Integer.parseInt(getInput()), // day
            Integer.parseInt(getInput()), // month
            Integer.parseInt(getInput()) // year
        );

        List<String> stringProperties = Arrays.asList(
            getInput(), // name
            getInput(), // title
            getInput(), // description
            getInput(), // topic
            getInput(), // objectiveInOneLine
            getInput() // objectiveFullDescription
    }
```

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```
        getInput() // motivation
    );

    Double duration = Double.parseDouble(getInput());
    boolean isActive = Boolean.parseBoolean(getInput());

    objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

// Atualizar o método getStudyPlanInfo para não usar Builder
private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

// Atualizar o método handleSetSteps para não usar Builder
private void handleSetSteps(StudyPlan studyPlan){
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer number_of_steps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();
    studyPlan.assignSteps(
        getInput(), // firstStep
        getInput(), // resetStudyMechanism
        getInput(), // consistentStep
        getInput(), // seasonalSteps
        getInput(), // basicSteps
        getInput() // mainObjectiveTitle
```

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```
        getInput(), // mainObjectiveTitle
        getInput(), // mainGoalTitle
        getInput(), // mainMaterialTopic
        getInput(), // mainTask
        Integer.parseInt(getInput()), // numberOfSteps
        Boolean.parseBoolean(getInput()), // isImportant
        createdAT, // startDate
        createdAT.plusDays(Long.parseLong(getInput())) // endDate
    );
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
    StudyObjective studyObjective = studyPlan.getObjective();
    return new StudyGoal(name, studyObjective, studyPlan);
}

private void handleAddStudyGoal(){
    StudyGoal goal = getStudyGoalInfo();
    studyTaskManager.addRegistry(goal);
}

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, title, description, link, accessRights, license, language, rating, + viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
        .link(getInput())
        .accessRights(getInput())
        .license(getInput())
        .language(getInput())
        .rating(Integer.parseInt(getInput()))
        .viewCount(Integer.parseInt(getInput()))
        .shareCount(Integer.parseInt(getInput()));

    audioReference.editAudio(builder);
}
```

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```
}

private AudioReference addAudioReference(){
    handleMethodHeader("(Audio Reference Creation)");
    System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
    AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
    editAudio(audioReference);
    return audioReference;
}

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getI
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
    if(reference != null){
        studyMaterial.addReference(reference);
    }
}

private void handleAddStudyObjective(){
    getStudyObjectiveInfo();
}

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```

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```
private void handleAddStudyPlan(){
    getStudyPlanInfo();
    System.out.println("Study Plan Added");
}

private void getWeekInfo(){
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, String objectiveDescription, String materialTopic, String materialFormat, String goal, String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
    studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput(), getInput());
}

private void handleSetUpWeek(){
    getWeekInfo();
}

private void handleGetWeekResponsibilities(){
    List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
    System.out.println(String.join(", ", responsibilities));
}

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
        4 - add study objective
        5 - add study plan
        6 - set up week
        7 - get week responsibilities
    """);
}
```

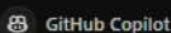
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```
    }
}

fix the error: cannot find symbol method
assignSteps(java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,java.lang.String,int,boolean,java.time.LocalDateTime,java.time.LocalDateTime)
```



Plano de Refatoração Passo a Passo

1. Analisar o código e testes existentes
 2. Verificar os métodos necessários no StudyPlan
 3. Implementar os métodos faltantes mantendo compatibilidade
 4. Atualizar controller para usar os métodos corretos

Implementação

```
private void handleSetSteps(StudyPlan studyPlan) {
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle,
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();

    List<String> stringProperties = Arrays.asList(
        getInput(), // firstStep
        getInput(), // resetStudyMechanism
        getInput(), // consistentStep
        getInput(), // seasonalSteps
        getInput(), // basicSteps
        getInput(), // mainObjectiveTitle
        getInput(), // mainGoalTitle
        getInput(), // mainMaterialTopic
        getInput() // mainTask
    );
}

Integer numberOfSteps = Integer.parseInt(getInput());
boolean isImportant = Boolean.parseBoolean(getInput());
Long daysToAdd = Long.parseLong(getInput());

studyPlan.handleAssignSteps(
    stringProperties,
```

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```
        numberOfSteps,
        isImportant,
        createdAT,
        createdAT.plusDays(daysToAdd)
    );
}

public void handleAssignSteps(List<String> stringProperties, Integer numberOfSteps,
                             boolean isImportant, LocalDateTime startDate, LocalDateTime endDate) {
    DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy HH:mm:ss");

    this.steps = new ArrayList<>(Arrays.asList(
        stringProperties.get(0), // firstStep
        stringProperties.get(1), // resetStudyMechanism
        stringProperties.get(2), // consistentStep
        stringProperties.get(3), // seasonalSteps
        stringProperties.get(4), // basicSteps
        stringProperties.get(5), // mainObjectiveTitle
        stringProperties.get(6), // mainGoalTitle
        stringProperties.get(7), // mainMaterialTopic
        stringProperties.get(8), // mainTask
        "Number of steps: " + numberOfSteps.toString(),
        "Is it important to you? " + isImportant,
        startDate.format(formatter),
        endDate.format(formatter)
    ));
}
```

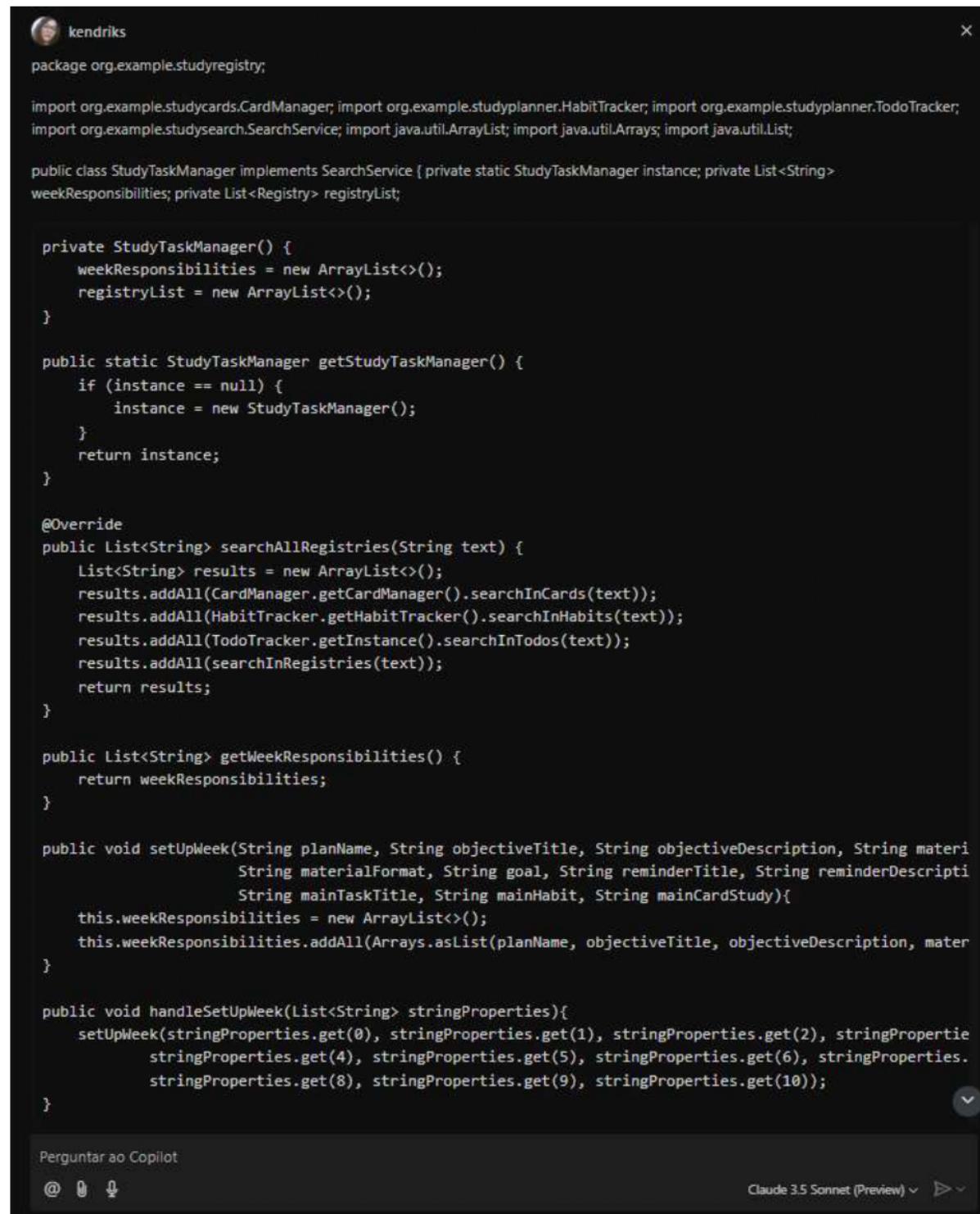
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STUDYTASKMANAGER



```
package org.example.studyregistry;

import org.example.studycards.CardManager; import org.example.studyplanner.HabitTracker; import org.example.studyplanner.TodoTracker;
import org.example.studysearch.SearchService; import java.util.ArrayList; import java.util.Arrays; import java.util.List;

public class StudyTaskManager implements SearchService { private static StudyTaskManager instance; private List<String>
weekResponsibilities; private List<Registry> registryList;

private StudyTaskManager() {
    weekResponsibilities = new ArrayList<>();
    registryList = new ArrayList<>();
}

public static StudyTaskManager getStudyTaskManager() {
    if (instance == null) {
        instance = new StudyTaskManager();
    }
    return instance;
}

@Override
public List<String> searchAllRegistries(String text) {
    List<String> results = new ArrayList<>();
    results.addAll(CardManager.getCardManager().searchInCards(text));
    results.addAll(HabitTracker.getHabitTracker().searchInHabits(text));
    results.addAll(TodoTracker.getInstance().searchInTodos(text));
    results.addAll(searchInRegistries(text));
    return results;
}

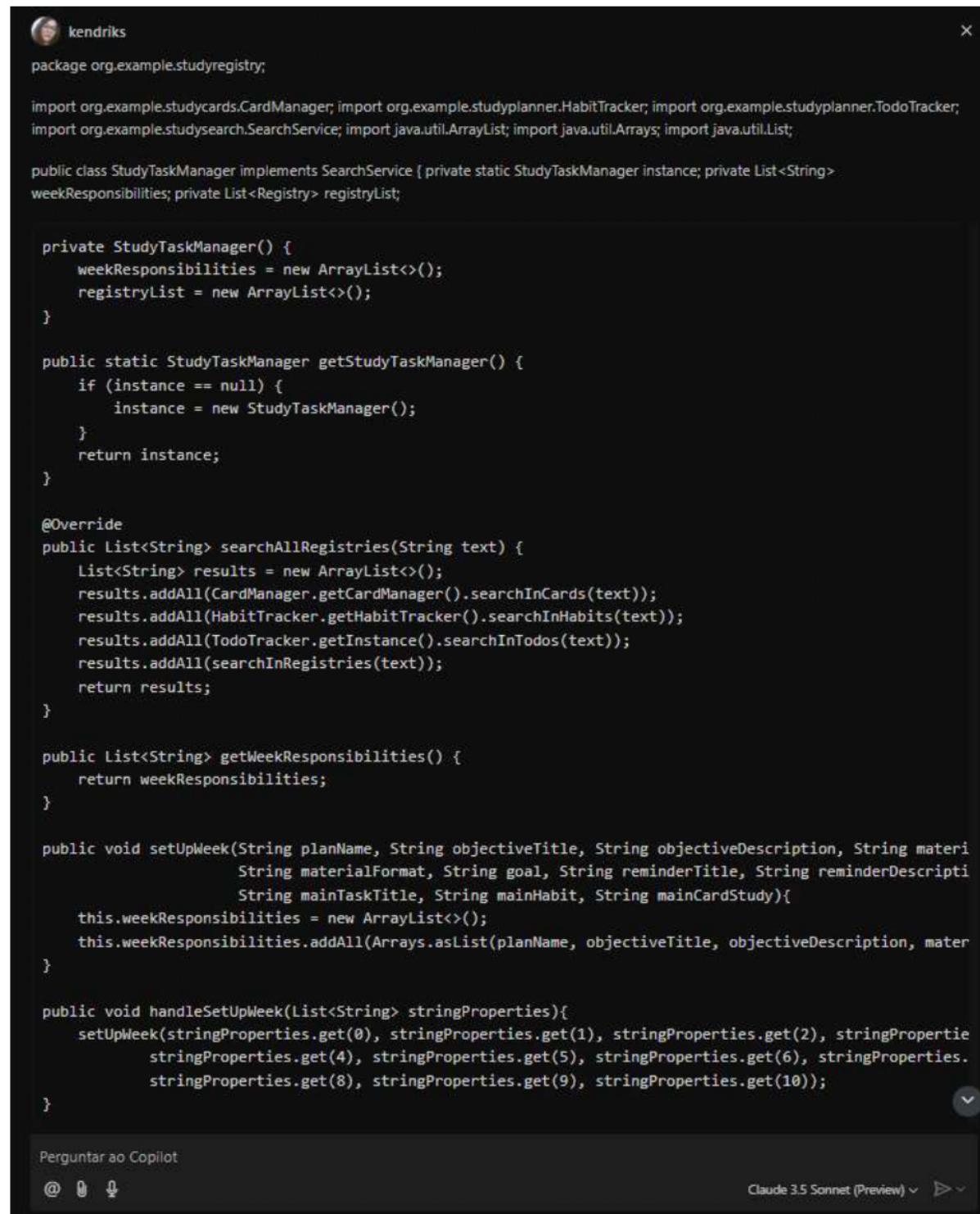
public List<String> getWeekResponsibilities() {
    return weekResponsibilities;
}

public void setUpWeek(String planName, String objectiveTitle, String objectiveDescription, String materialFormat,
String goal, String reminderTitle, String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy){
    this.weekResponsibilities = new ArrayList<>();
    this.weekResponsibilities.addAll(Arrays.asList(planName, objectiveTitle, objectiveDescription, materialFormat,
goal, reminderTitle, reminderDescription, mainTaskTitle, mainHabit, mainCardStudy));
}

public void handleSetUpWeek(List<String> stringProperties){
    setUpWeek(stringProperties.get(0), stringProperties.get(1), stringProperties.get(2), stringProperties.get(3),
stringProperties.get(4), stringProperties.get(5), stringProperties.get(6), stringProperties.get(7),
stringProperties.get(8), stringProperties.get(9), stringProperties.get(10));
}

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```

STUDYTASKMANAGER



A screenshot of a code editor window titled "kendriks". The code is written in Java and defines a class named StudyTaskManager. The class implements the SearchService interface and contains methods for searching registries, getting week responsibilities, and setting up a week. It also includes an overridden searchAllRegistries method that searches multiple services. The code uses ArrayLists to store lists of strings.

```
package org.example.studyregistry;

import org.example.studycards.CardManager; import org.example.studyplanner.HabitTracker; import org.example.studyplanner.TodoTracker;
import org.example.studysearch.SearchService; import java.util.ArrayList; import java.util.Arrays; import java.util.List;

public class StudyTaskManager implements SearchService { private static StudyTaskManager instance; private List<String>
weekResponsibilities; private List<Registry> registryList;

private StudyTaskManager() {
    weekResponsibilities = new ArrayList<>();
    registryList = new ArrayList<>();
}

public static StudyTaskManager getStudyTaskManager() {
    if (instance == null) {
        instance = new StudyTaskManager();
    }
    return instance;
}

@Override
public List<String> searchAllRegistries(String text) {
    List<String> results = new ArrayList<>();
    results.addAll(CardManager.getCardManager().searchInCards(text));
    results.addAll(HabitTracker.getHabitTracker().searchInHabits(text));
    results.addAll(TodoTracker.getInstance().searchInTodos(text));
    results.addAll(searchInRegistries(text));
    return results;
}

public List<String> getWeekResponsibilities() {
    return weekResponsibilities;
}

public void setUpWeek(String planName, String objectiveTitle, String objectiveDescription, String materialFormat,
String goal, String reminderTitle, String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy){
    this.weekResponsibilities = new ArrayList<>();
    this.weekResponsibilities.addAll(Arrays.asList(planName, objectiveTitle, objectiveDescription, materialFormat,
goal, reminderTitle, reminderDescription, mainTaskTitle, mainHabit, mainCardStudy));
}

public void handleSetUpWeek(List<String> stringProperties){
    setUpWeek(stringProperties.get(0), stringProperties.get(1), stringProperties.get(2), stringProperties.get(3),
stringProperties.get(4), stringProperties.get(5), stringProperties.get(6), stringProperties.get(7),
stringProperties.get(8), stringProperties.get(9), stringProperties.get(10));
}

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```

```

public void addRegistry(Registry registry){
    registryList.add(registry);
}
public void removeRegistry(Registry registry){
    registryList.remove(registry);
}
public List<Registry> getRegistryList(){
    return registryList;
}

public List<String> searchInRegistries(String text){
    List<String> response = new ArrayList<>();
    for(Registry registry : registryList){
        String mix = (registry.getName() != null ? registry.getName() : "");
        if (mix.toLowerCase().contains(text.toLowerCase())){
            response.add(registry.getName());
        }
    }
    return response;
}
}

```

fix the long parameter list code smell using the introduce object refactoring technique

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Vou ajudar a refatorar o código para resolver o code smell de lista longa de parâmetros usando a técnica de introdução de objeto.

Passo:

1. Criar uma classe WeekSetup para encapsular os parâmetros
2. Modificar o método setUpWeek para usar o novo objeto
3. Adaptar o método handleSetUpWeek

Implementação:

1. Primeiro, criar a nova classe WeekSetup:

```

package org.example.studyregistry;

public class WeekSetup {
    private final String planName;
    private final String objectiveTitle;
    private final String objectiveDescription;
    private final String materialTopic;
}

```

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```

private final String materialTopic;
private final String materialFormat;
private final String goal;
private final String reminderTitle;
private final String reminderDescription;
private final String mainTaskTitle;
private final String mainHabit;
private final String mainCardStudy;

public WeekSetup(String planName, String objectiveTitle, String objectiveDescription,
                 String materialTopic, String materialFormat, String goal,
                 String reminderTitle, String reminderDescription,
                 String mainTaskTitle, String mainHabit, String mainCardStudy) {
    this.planName = planName;
    this.objectiveTitle = objectiveTitle;
    this.objectiveDescription = objectiveDescription;
    this.materialTopic = materialTopic;
    this.materialFormat = materialFormat;
    this.goal = goal;
    this.reminderTitle = reminderTitle;
    this.reminderDescription = reminderDescription;
    this.mainTaskTitle = mainTaskTitle;
    this.mainHabit = mainHabit;
    this.mainCardStudy = mainCardStudy;
}

public static WeekSetup fromList(List<String> properties) {
    return new WeekSetup(
        properties.get(0), properties.get(1), properties.get(2),
        properties.get(3), properties.get(4), properties.get(5),
        properties.get(6), properties.get(7), properties.get(8),
        properties.get(9), properties.get(10)
    );
}

public List<String> toList() {
    return Arrays.asList(planName, objectiveTitle, objectiveDescription,
                        materialTopic, materialFormat, goal, reminderTitle,
                        reminderDescription, mainTaskTitle, mainHabit, mainCardStudy);
}
}

```

2. Agora, modificar a classe StudyTaskManager:

```

public class StudyTaskManager implements SearchService {
    // ...existing code...

```

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```

public void setUpWeek(WeekSetup setup) {
    this.weekResponsibilities = new ArrayList<>(setup.toList());
}

public void handleSetUpWeek(List<String> stringProperties) {
    setUpWeek(WeekSetup.fromList(stringProperties));
}

// ...existing code...
}

```

Esta refatoração:

- Encapsula os parâmetros relacionados em uma única classe WeekSetup
- Torna o código mais organizado e manutenível
- Reduz a complexidade dos métodos
- Facilita futuras modificações nos parâmetros da configuração semanal
- Mantém a compatibilidade com o código existente através do método handleSetUpWeek

Código semelhante encontrado com 1 tipo de licença - [Exibir correspondências](#)



kendriks

X

```

package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import
org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.Arrays; import java.util.HashMap; import java.util.List; import
java.util.Map;

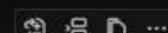
import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial
studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

public StudyRegistryController() {
    assignActions();
}

void assignActions(){
    actions.put("1", this::handleAddStudyTask);
    actions.put("2", this::handleAddStudyGoal);
    actions.put("3", this::handleAddStudyMaterial);
    actions.put("4", this::handleAddStudyObjective);
    actions.put("5", this::handleAddStudyPlan);
}

```



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```
        actions.put("6", this::handleSetUpWeek);
        actions.put("7", this::handleGetWeekResponsibilities);
    }

    private void handleMethodHeader(String header){
        System.out.println("~~~~~ " + header + "~~~~~\n");
    }

    private Task getStudyTaskInfo(){
        System.out.println("Type the following info: title, description, author \n");
        String title = getInput();
        String description = getInput();
        String author = getInput();
        return new Task(title, description, author, LocalDateTime.now());
    }

    private void handleAddStudyTask(){
        Task task = getStudyTaskInfo();
        studyTaskManager.addRegistry(task);
    }

    private void handleSetObjective(StudyObjective objective) {
        handleMethodHeader("(Study Objective Edit)");
        System.out.println("Type the following info: Integer id, Integer priority " +
            "Integer practicedDays, int day, int month, int year, String name, String title, String desc
            "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
            "Double duration, boolean isActive  \n");

        // Criar listas para parâmetros
        List<Integer> intProperties = Arrays.asList(
            Integer.parseInt(getInput()), // id
            Integer.parseInt(getInput()), // priority
            Integer.parseInt(getInput()), // practicedDays
            Integer.parseInt(getInput()), // day
            Integer.parseInt(getInput()), // month
            Integer.parseInt(getInput()) // year
        );

        List<String> stringProperties = Arrays.asList(
            getInput(), // name
            getInput(), // title
            getInput(), // description
            getInput(), // topic
            getInput(), // objectiveInOneLine
            getInput(), // objectiveFullDescription
            getInput() // motivation
        );
    }
}
```

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```
        Double duration = Double.parseDouble(getInput());
        boolean isActive = Boolean.parseBoolean(getInput());

        objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
    }

    private StudyObjective getStudyObjectiveInfo(){
        handleMethodHeader("(Study Objective Creation)");
        System.out.println("Type the following info: title, description \n");
        String title = getInput();
        String description = getInput();
        StudyObjective studyObjective = new StudyObjective(title, description);
        handleSetObjective(studyObjective);
        studyTaskManager.addRegistry(studyObjective);
        return studyObjective;
    }

    // Atualizar o método getStudyPlanInfo para não usar Builder
    private StudyPlan getStudyPlanInfo(){
        handleMethodHeader("(Study Plan Creation)");
        System.out.println("Type the following info: name \n");
        String name = getInput();
        StudyObjective studyObjective = getStudyObjectiveInfo();
        StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
        studyTaskManager.addRegistry(plan);
        return plan;
    }

    private void handleSetSteps(StudyPlan studyPlan) {
        handleMethodHeader("(Study Plan Edit)");
        System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
            "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
            "String mainTask, @NotNull Integer numberOFSteps, boolean isImportant. " +
            "The Date to start is today, the date to end is x days from now, type the quantity of days\n

        LocalDateTime createdAT = LocalDateTime.now();

        List<String> stringProperties = Arrays.asList(
            getInput(), // firstStep
            getInput(), // resetStudyMechanism
            getInput(), // consistentStep
            getInput(), // seasonalSteps
            getInput(), // basicSteps
            getInput(), // mainObjectiveTitle
            getInput(), // mainGoalTitle
            getInput() // mainMaterialTopic
        );
    }
}
```

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```
        getInput(), // mainMaterialTopic
        getInput() // mainTask
    );

    Integer numberOfSteps = Integer.parseInt(getInput());
    boolean isImportant = Boolean.parseBoolean(getInput());
    Long daysToAdd = Long.parseLong(getInput());

    studyPlan.handleAssignSteps(
        stringProperties,
        numberOfSteps,
        isImportant,
        createdAT,
        createdAT.plusDays(daysToAdd)
    );
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
    StudyObjective studyObjective = studyPlan.getObjective();
    return new StudyGoal(name, studyObjective, studyPlan);
}

private void handleAddStudyGoal(){
    StudyGoal goal = getStudyGoalInfo();
    studyTaskManager.addRegistry(goal);
}

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, title, description, link, accessRights, license, language, rating, " +
        "viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
        .link(getInput())
        .accessRights(getInput())
        .license(getInput())
        .language(getInput())
        ...
}

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```

```
.rating(Integer.parseInt(getInput()))
.viewCount(Integer.parseInt(getInput()))
.shareCount(Integer.parseInt(getInput()));

audioReference.editAudio(builder);
}

private AudioReference addAudioReference(){
    handleMethodHeader("(Audio Reference Creation)");
    System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
    AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
    editAudio(audioReference);
    return audioReference;
}

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getI
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){
    Reference reference = addStudyMaterial();
    if(reference != null){
        studyMaterial.addReference(reference);
    }
}
```

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```
}

private void handleAddStudyObjective(){
    getStudyObjectiveInfo();
}

private void handleAddStudyPlan(){
    getStudyPlanInfo();
    System.out.println("Study Plan Added");
}

private void getWeekInfo(){
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, Strin
        "String objectiveDescription, String materialTopic, String materialFormat, String goal, Stri
        "String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");
    studyTaskManager.setUpWeek(getInput(), getInput(), getInput(), getInput(), getInput(), getInpu
        getInpu(), getInpu(), getInpu());
}

private void handleSetUpWeek(){
    getWeekInfo();
}

private void handleGetWeekResponsibilities(){
    List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
    System.out.println(String.join(", ", responsibilities));
}

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
    """);
}
```

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```
    4 - add study objective  
    5 - add study plan  
    6 - set up week  
    7 - get week responsibilities  
    """");  
}
```

fix the error: 'setUpWeek(org.example.studyregistry.WeekSetup)' in 'org.example.studyregistry.StudyTaskManager' cannot be applied to
(java.lang.String, java.lang.String, java.lang.String, java.lang.String, java.lang.String, java.lang.String, java.lang.String, java.lang.String,
ava.lang.String, java.lang.String, java.lang.String)

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Plano de Refatoração

1. Atualizar o método `getWeekInfo()` para usar `WeekSetup`
2. Remover o método antigo `setUpWeek` com múltiplos parâmetros
3. Adaptar o código para usar o novo objeto `WeekSetup`

```
private void getWeekInfo() {  
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, Strin  
        "String objectiveDescription, String materialTopic, String materialFormat, String goal, Stri  
        "String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");  
  
    WeekSetup weekSetup = new WeekSetup(  
        getInput(), // planName  
        getInput(), // objectiveTitle  
        getInput(), // objectiveDescription  
        getInput(), // materialTopic  
        getInput(), // materialFormat  
        getInput(), // goal  
        getInput(), // reminderTitle  
        getInput(), // reminderDescription  
        getInput(), // mainTaskTitle  
        getInput(), // mainHabit  
        getInput() // mainCardStudy  
    );  
  
    studyTaskManager.setUpWeek(weekSetup);  
}
```

```
// Remover o método antiga setUpWeek com múltiplos parâmetros  
public void setUpWeek(WeekSetup setup) {
```

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```
public void setUpWeek(WeekSetup setup) {
    this.weekResponsibilities = new ArrayList<>(setup.toList());
}
```

Essa mudança:

- Adapta o código para usar o novo objeto `WeekSetup`
- Mantém a mesma funcionalidade
- Resolve o erro de incompatibilidade de tipos
- Simplifica a interface do `StudyTaskManager`

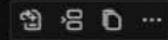


kendriks

X

package org.example.studyregistry;

```
public class WeekSetup { private final String planName; private final String objectiveTitle; private final String objectiveDescription; private final String materialTopic; private final String materialFormat; private final String goal; private final String reminderTitle; private final String reminderDescription; private final String mainTaskTitle; private final String mainHabit; private final String mainCardStudy;
```



```
public WeekSetup(String planName, String objectiveTitle, String objectiveDescription,
                 String materialTopic, String materialFormat, String goal,
                 String reminderTitle, String reminderDescription,
                 String mainTaskTitle, String mainHabit, String mainCardStudy) {
    this.planName = planName;
    this.objectiveTitle = objectiveTitle;
    this.objectiveDescription = objectiveDescription;
    this.materialTopic = materialTopic;
    this.materialFormat = materialFormat;
    this.goal = goal;
    this.reminderTitle = reminderTitle;
    this.reminderDescription = reminderDescription;
    this.mainTaskTitle = mainTaskTitle;
    this.mainHabit = mainHabit;
    this.mainCardStudy = mainCardStudy;
}
```

```
public static WeekSetup fromList(List<String> properties) {
    return new WeekSetup(
        properties.get(0), properties.get(1), properties.get(2),
        properties.get(3), properties.get(4), properties.get(5),
        properties.get(6), properties.get(7), properties.get(8),
        properties.get(9), properties.get(10)
    );
}
```

```
public List<String> toList() {
```

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```
        return Arrays.asList(planName, objectiveTitle, objectiveDescription,
            materialTopic, materialFormat, goal, reminderTitle,
            reminderDescription, mainTaskTitle, mainHabit, mainCardStudy);
    }

}
```

fix the errors: Cannot resolve symbol 'List' Cannot resolve method 'get(int)' Cannot resolve symbol 'Arrays'

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Plano

1. Adicionar as importações necessárias para List e Arrays
2. O código precisa apenas de dois imports do java.util

```
package org.example.studyregistry;
```

```
import java.util.List;
import java.util.Arrays;
```

```
public class WeekSetup {
    // ...existing code...
}
```



kendriks

```
package org.example.studyregistry;
```

```
import java.util.List; import java.util.Arrays;
```

```
public class WeekSetup { private final String planName; private final String objectiveTitle; private final String objectiveDescription; private final String materialTopic; private final String materialFormat; private final String goal; private final String reminderTitle; private final String reminderDescription; private final String mainTaskTitle; private final String mainHabit; private final String mainCardStudy;
```

```
public WeekSetup(String planName, String objectiveTitle, String objectiveDescription,
    String materialTopic, String materialFormat, String goal,
    String reminderTitle, String reminderDescription,
    String mainTaskTitle, String mainHabit, String mainCardStudy) {
    this.planName = planName;
    this.objectiveTitle = objectiveTitle;
    this.objectiveDescription = objectiveDescription;
    this.materialTopic = materialTopic;
    this.materialFormat = materialFormat;
    ...
}
```

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```

        this.goal = goal;
        this.reminderTitle = reminderTitle;
        this.reminderDescription = reminderDescription;
        this.mainTaskTitle = mainTaskTitle;
        this.mainHabit = mainHabit;
        this.mainCardStudy = mainCardStudy;
    }

    public static WeekSetup fromList(List<String> properties) {
        return new WeekSetup(
            properties.get(0), properties.get(1), properties.get(2),
            properties.get(3), properties.get(4), properties.get(5),
            properties.get(6), properties.get(7), properties.get(8),
            properties.get(9), properties.get(10)
        );
    }

    public List<String> toList() {
        return Arrays.asList(planName, objectiveTitle, objectiveDescription,
            materialTopic, materialFormat, goal, reminderTitle,
            reminderDescription, mainTaskTitle, mainHabit, mainCardStudy);
    }
}

```

fix the long method code smell using the extract method refactoring technique

 GitHub Copilot

Plano de Refatoração

1. Extrair método para criar WeekSetup a partir de uma lista
2. Extrair método para validar entradas da lista
3. Extrair método para criar lista de propriedades
4. Adicionar validações de null/tamanho da lista

```

package org.example.studyregistry;

import java.util.List;
import java.util.Arrays;

public class WeekSetup {
    private static final int REQUIRED_PROPERTIES = 11;
    private final String planName;
    private final String objectiveTitle;
    private final String objectiveDescription;
    private final String materialTopic;

```

Perguntar ao Copilot

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```
private final String materialFormat;
private final String goal;
private final String reminderTitle;
private final String reminderDescription;
private final String mainTaskTitle;
private final String mainHabit;
private final String mainCardStudy;

public WeekSetup(String planName, String objectiveTitle, String objectiveDescription,
                 String materialTopic, String materialFormat, String goal,
                 String reminderTitle, String reminderDescription,
                 String mainTaskTitle, String mainHabit, String mainCardStudy) {
    this.planName = planName;
    this.objectiveTitle = objectiveTitle;
    this.objectiveDescription = objectiveDescription;
    this.materialTopic = materialTopic;
    this.materialFormat = materialFormat;
    this.goal = goal;
    this.reminderTitle = reminderTitle;
    this.reminderDescription = reminderDescription;
    this.mainTaskTitle = mainTaskTitle;
    this.mainHabit = mainHabit;
    this.mainCardStudy = mainCardStudy;
}

public static WeekSetup fromList(List<String> properties) {
    validateProperties(properties);
    return createFromProperties(properties);
}

private static void validateProperties(List<String> properties) {
    if (properties == null) {
        throw new IllegalArgumentException("Lista de propriedades não pode ser nula");
    }
    if (properties.size() != REQUIRED_PROPERTIES) {
        throw new IllegalArgumentException("Lista deve conter exatamente " + REQUIRED_PROPERTIES + " "
    }
}

private static WeekSetup createFromProperties(List<String> properties) {
    return new WeekSetup(
        properties.get(0), // planName
        properties.get(1), // objectiveTitle
        properties.get(2), // objectiveDescription
        properties.get(3), // materialTopic
        properties.get(4), // materialFormat
        properties.get(5) // goal
    );
}
```

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```

        properties.get(5), // goal
        properties.get(6), // reminderTitle
        properties.get(7), // reminderDescription
        properties.get(8), // mainTaskTitle
        properties.get(9), // mainHabit
        properties.get(10) // mainCardStudy
    );
}

public List<String> toList() {
    return createPropertiesList();
}

private List<String> createPropertiesList() {
    return Arrays.asList(
        planName,
        objectiveTitle,
        objectiveDescription,
        materialTopic,
        materialFormat,
        goal,
        reminderTitle,
        reminderDescription,
        mainTaskTitle,
        mainHabit,
        mainCardStudy
    );
}
}

```

As melhorias incluem:

- Métodos menores e mais focados
- Melhor legibilidade
- Validações apropriadas
- Constante para número de propriedades requeridas
- Mensagens de erro em português
- Nomes de métodos mais descriptivos



kendriks

```

package org.example.studyregistry;

import java.util.List; import java.util.Arrays;

public class WeekSetup { private static final int REQUIRED_PROPERTIES = 11; private final String planName; private final String objectiveTitle;

```

Perguntar ao Copilot



Claude 3.5 Sonnet (Preview) ▶

```
private final String objectiveDescription; private final String materialTopic; private final String materialFormat; private final String goal; private final String reminderTitle; private final String reminderDescription; private final String mainTaskTitle; private final String mainHabit; private final String mainCardStudy;

public WeekSetup(String planName, String objectiveTitle, String objectiveDescription,
                 String materialTopic, String materialFormat, String goal,
                 String reminderTitle, String reminderDescription,
                 String mainTaskTitle, String mainHabit, String mainCardStudy) {
    this.planName = planName;
    this.objectiveTitle = objectiveTitle;
    this.objectiveDescription = objectiveDescription;
    this.materialTopic = materialTopic;
    this.materialFormat = materialFormat;
    this.goal = goal;
    this.reminderTitle = reminderTitle;
    this.reminderDescription = reminderDescription;
    this.mainTaskTitle = mainTaskTitle;
    this.mainHabit = mainHabit;
    this.mainCardStudy = mainCardStudy;
}

public static WeekSetup fromList(List<String> properties) {
    validateProperties(properties);
    return createFromProperties(properties);
}

private static void validateProperties(List<String> properties) {
    if (properties == null) {
        throw new IllegalArgumentException("Lista de propriedades não pode ser nula");
    }
    if (properties.size() != REQUIRED_PROPERTIES) {
        throw new IllegalArgumentException("Lista deve conter exatamente " + REQUIRED_PROPERTIES + " propriedades");
    }
}

private static WeekSetup createFromProperties(List<String> properties) {
    return new WeekSetup(
        properties.get(0), // planName
        properties.get(1), // objectiveTitle
        properties.get(2), // objectiveDescription
        properties.get(3), // materialTopic
        properties.get(4), // materialFormat
        properties.get(5), // goal
        properties.get(6), // reminderTitle
        properties.get(7), // reminderDescription
        properties.get(8), // mainTaskTitle
        properties.get(9) // mainHabit
    );
}
```

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```
        properties.get(9), // mainHabit
        properties.get(10) // mainCardStudy
    );
}

public List<String> toList() {
    return createPropertiesList();
}

private List<String> createPropertiesList() {
    return Arrays.asList(
        planName,
        objectiveTitle,
        objectiveDescription,
        materialTopic,
        materialFormat,
        goal,
        reminderTitle,
        reminderDescription,
        mainTaskTitle,
        mainHabit,
        mainCardStudy
    );
}
}
```

the code smell has not yet been fixed

 GitHub Copilot

Plano de Refatoração para Resolver Long Method

1. Dividir construtor longo em partes lógicas usando Builder Pattern
2. Agrupar propriedades relacionadas em classes internas
3. Criar classes para representar diferentes aspectos da configuração semanal
4. Implementar Builder com métodos fluentes

```
package org.example.studyregistry;

import java.util.List;
import java.util.Arrays;

public class WeekSetup {
    private static final int REQUIRED_PROPERTIES = 11;
```

Perguntar ao Copilot

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```
private final Plan plan;
private final Objective objective;
private final Material material;
private final Reminder reminder;
private final MainItems mainItems;

private WeekSetup(Builder builder) {
    this.plan = builder.plan;
    this.objective = builder.objective;
    this.material = builder.material;
    this.reminder = builder.reminder;
    this.mainItems = builder.mainItems;
}

public static class Plan {
    private final String name;
    public Plan(String name) {
        this.name = name;
    }
}

public static class Objective {
    private final String title;
    private final String description;
    public Objective(String title, String description) {
        this.title = title;
        this.description = description;
    }
}

public static class Material {
    private final String topic;
    private final String format;
    public Material(String topic, String format) {
        this.topic = topic;
        this.format = format;
    }
}

public static class Reminder {
    private final String title;
    private final String description;
    public Reminder(String title, String description) {
        this.title = title;
        this.description = description;
    }
}
```

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```
public static class MainItems {
    private final String taskTitle;
    private final String habit;
    private final String cardStudy;
    private final String goal;
    public MainItems(String taskTitle, String habit, String cardStudy, String goal) {
        this.taskTitle = taskTitle;
        this.habit = habit;
        this.cardStudy = cardStudy;
        this.goal = goal;
    }
}

public static class Builder {
    private Plan plan;
    private Objective objective;
    private Material material;
    private Reminder reminder;
    private MainItems mainItems;

    public Builder plan(String name) {
        this.plan = new Plan(name);
        return this;
    }

    public Builder objective(String title, String description) {
        this.objective = new Objective(title, description);
        return this;
    }

    public Builder material(String topic, String format) {
        this.material = new Material(topic, format);
        return this;
    }

    public Builder reminder(String title, String description) {
        this.reminder = new Reminder(title, description);
        return this;
    }

    public Builder mainItems(String taskTitle, String habit, String cardStudy, String goal) {
        this.mainItems = new MainItems(taskTitle, habit, cardStudy, goal);
        return this;
    }

    public WeekSetup build() {
```

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```
        return new WeekSetup(this);
    }

    public static WeekSetup FromList(List<String> properties) {
        validateProperties(properties);
        return new Builder()
            .plan(properties.get(0))
            .objective(properties.get(1), properties.get(2))
            .material(properties.get(3), properties.get(4))
            .mainItems(properties.get(8), properties.get(9), properties.get(10), properties.get(5))
            .reminder(properties.get(6), properties.get(7))
            .build();
    }

    public List<String> toList() {
        return Arrays.asList(
            plan.name,
            objective.title,
            objective.description,
            material.topic,
            material.format,
            mainItems.goal,
            reminder.title,
            reminder.description,
            mainItems.taskTitle,
            mainItems.habit,
            mainItems.cardStudy
        );
    }
}
```



kendriks

```
package org.example.studyregistry;

import java.util.List; import java.util.Arrays;

public class WeekSetup { private static final int REQUIRED_PROPERTIES = 11;

    private final Plan plan;
    private final Objective objective;
    private final Material material;
    private final Reminder reminder;
    private final MainItems mainItems;
```

Perguntar ao Copilot



Claude 3.5 Sonnet (Preview) ▶

```
private WeekSetup(Builder builder) {
    this.plan = builder.plan;
    this.objective = builder.objective;
    this.material = builder.material;
    this.reminder = builder.reminder;
    this.mainItems = builder.mainItems;
}

public static class Plan {
    private final String name;
    public Plan(String name) {
        this.name = name;
    }
}

public static class Objective {
    private final String title;
    private final String description;
    public Objective(String title, String description) {
        this.title = title;
        this.description = description;
    }
}

public static class Material {
    private final String topic;
    private final String format;
    public Material(String topic, String format) {
        this.topic = topic;
        this.format = format;
    }
}

public static class Reminder {
    private final String title;
    private final String description;
    public Reminder(String title, String description) {
        this.title = title;
        this.description = description;
    }
}

public static class MainItems {
    private final String taskTitle;
    private final String habit;
    private final String cardStudy:
```

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```
private final String goal;
public MainItems(String taskTitle, String habit, String cardStudy, String goal) {
    this.taskTitle = taskTitle;
    this.habit = habit;
    this.cardStudy = cardStudy;
    this.goal = goal;
}
}

public static class Builder {
    private Plan plan;
    private Objective objective;
    private Material material;
    private Reminder reminder;
    private MainItems mainItems;

    public Builder plan(String name) {
        this.plan = new Plan(name);
        return this;
    }

    public Builder objective(String title, String description) {
        this.objective = new Objective(title, description);
        return this;
    }

    public Builder material(String topic, String format) {
        this.material = new Material(topic, format);
        return this;
    }

    public Builder reminder(String title, String description) {
        this.reminder = new Reminder(title, description);
        return this;
    }

    public Builder mainItems(String taskTitle, String habit, String cardStudy, String goal) {
        this.mainItems = new MainItems(taskTitle, habit, cardStudy, goal);
        return this;
    }

    public WeekSetup build() {
        return new WeekSetup(this);
    }
}
```

week14 - GitHub - Microsoft/WeekSetup: A simple week setup application

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```
public static WeekSetup fromList(List<String> properties) {
    validateProperties(properties);
    return new Builder()
        .plan(properties.get(0))
        .objective(properties.get(1), properties.get(2))
        .material(properties.get(3), properties.get(4))
        .mainItems(properties.get(8), properties.get(9), properties.get(10), properties.get(5))
        .reminder(properties.get(6), properties.get(7))
        .build();
}

public List<String> toList() {
    return Arrays.asList(
        plan.name,
        objective.title,
        objective.description,
        material.topic,
        material.format,
        mainItems.goal,
        reminder.title,
        reminder.description,
        mainItems.taskTitle,
        mainItems.habit,
        mainItems.cardStudy
    );
}
}
```

fix the error: Cannot resolve method 'validateProperties' in 'WeekSetup'

 GitHub Copilot

Plano de Implementação

1. Adicionar método `validateProperties` que estava faltando
2. Mover validações para uma classe utilitária separada
3. Incluir mensagens de erro em português

```
package org.example.studyregistry;

public class WeekSetupValidator {
    private static void validateProperties(List<String> properties) {
        if (properties == null) {
            throw new IllegalArgumentException("A lista de propriedades não pode ser nula");
        }
    }
}
```

Perguntar ao Copilot

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```
        if (properties.size() != REQUIRED_PROPERTIES) {
            throw new IllegalArgumentException(
                String.format("A lista deve conter exatamente %d propriedades, mas contém %d",
                    REQUIRED_PROPERTIES,
                    properties.size())
            );
        }
        validateNonNullElements(properties);
    }

    private static void validateNonNullElements(List<String> properties) {
        for (int i = 0; i < properties.size(); i++) {
            if (properties.get(i) == null) {
                throw new IllegalArgumentException(
                    String.Format("A propriedade no índice %d não pode ser nula", i)
                );
            }
        }
    }
}

public static WeekSetup fromList(List<String> properties) {
    WeekSetupValidator.validateProperties(properties);
    return new Builder()
        .plan(properties.get(0))
        .objective(properties.get(1), properties.get(2))
        .material(properties.get(3), properties.get(4))
        .mainItems(properties.get(8), properties.get(9), properties.get(10), properties.get(5))
        .reminder(properties.get(6), properties.get(7))
        .build();
}
```



kendriks

```
package org.example.studyregistry;

import java.util.List; import java.util.Arrays;

public class WeekSetup { private static final int REQUIRED_PROPERTIES = 11;

    private final Plan plan;
    private final Objective objective;
    private final Material material;
    private final Reminder reminder;
    private final MainItem mainItem;
```

Perguntar ao Copilot



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```
private final MainItems mainItems;

private WeekSetup(Builder builder) {
    this.plan = builder.plan;
    this.objective = builder.objective;
    this.material = builder.material;
    this.reminder = builder.reminder;
    this.mainItems = builder.mainItems;
}

public static class Plan {
    private final String name;
    public Plan(String name) {
        this.name = name;
    }
}

public static class Objective {
    private final String title;
    private final String description;
    public Objective(String title, String description) {
        this.title = title;
        this.description = description;
    }
}

public static class Material {
    private final String topic;
    private final String format;
    public Material(String topic, String format) {
        this.topic = topic;
        this.format = format;
    }
}

public static class Reminder {
    private final String title;
    private final String description;
    public Reminder(String title, String description) {
        this.title = title;
        this.description = description;
    }
}

public static class MainItems {
    private final String taskTitle;
    private final String habit;
    . . .
}
```

Perguntar ao Copilot

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```
private final String cardStudy;
private final String goal;
public MainItems(String taskTitle, String habit, String cardStudy, String goal) {
    this.taskTitle = taskTitle;
    this.habit = habit;
    this.cardStudy = cardStudy;
    this.goal = goal;
}
}

public static class Builder {
    private Plan plan;
    private Objective objective;
    private Material material;
    private Reminder reminder;
    private MainItems mainItems;

    public Builder plan(String name) {
        this.plan = new Plan(name);
        return this;
    }

    public Builder objective(String title, String description) {
        this.objective = new Objective(title, description);
        return this;
    }

    public Builder material(String topic, String format) {
        this.material = new Material(topic, format);
        return this;
    }

    public Builder reminder(String title, String description) {
        this.reminder = new Reminder(title, description);
        return this;
    }

    public Builder mainItems(String taskTitle, String habit, String cardStudy, String goal) {
        this.mainItems = new MainItems(taskTitle, habit, cardStudy, goal);
        return this;
    }

    public WeekSetup build() {
        return new WeekSetup(this);
    }
}
```

Perguntar ao Copilot

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```
public static WeekSetup fromList(List<String> properties) {
    WeekSetupValidator.validateProperties(properties);
    return new Builder()
        .plan(properties.get(0))
        .objective(properties.get(1), properties.get(2))
        .material(properties.get(3), properties.get(4))
        .mainItems(properties.get(8), properties.get(9), properties.get(10), properties.get(5))
        .reminder(properties.get(6), properties.get(7))
        .build();
}

public List<String> toList() {
    return Arrays.asList(
        plan.name,
        objective.title,
        objective.description,
        material.topic,
        material.format,
        mainItems.goal,
        reminder.title,
        reminder.description,
        mainItems.taskTitle,
        mainItems.habit,
        mainItems.cardStudy
    );
}
}
```

fix the error: 'validateProperties(List<String>)' has private access in 'org.example.studyregistry.WeekSetupValidator'

 GitHub Copilot

Plano de Implementação

1. Criar método estático público em `WeekSetupValidator`
2. Manter validações internas como privadas
3. Adicionar constante `REQUIRED_PROPERTIES`

```
package org.example.studyregistry;

import java.util.List;

public class WeekSetupValidator {
    private static final int REQUIRED_PROPERTIES = 11;
```

Perguntar ao Copilot

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Claude 3.5 Sonnet (Preview) ▶ ▷

```
public static void validateProperties(List<String> properties) {
    if (properties == null) {
        throw new IllegalArgumentException("A lista de propriedades não pode ser nula");
    }
    if (properties.size() != REQUIRED_PROPERTIES) {
        throw new IllegalArgumentException(
            String.format("A lista deve conter exatamente %d propriedades, mas contém %d",
                REQUIRED_PROPERTIES,
                properties.size())
        );
    }
    validateNonNullElements(properties);
}

private static void validateNonNullElements(List<String> properties) {
    for (int i = 0; i < properties.size(); i++) {
        if (properties.get(i) == null) {
            throw new IllegalArgumentException(
                String.format("A propriedade no índice %d não pode ser nula", i)
            );
        }
    }
}
```

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 kendriks X

package org.example.controllers;

import org.example.studymaterial.AudioReference; import org.example.studymaterial.Reference; import org.example.studymaterial.TextReference; import org.example.studymaterial.VideoReference; import org.example.studyregistry.*;

import java.time.LocalDateTime; import java.util.ArrayList; import java.util.Arrays; import java.util.HashMap; import java.util.List; import java.util.Map;

import static org.example.controllers.MainController.getInput; import static org.example.controllers.MainController.validateInput;

public class StudyRegistryController { StudyTaskManager studyTaskManager = StudyTaskManager.getStudyTaskManager(); StudyMaterial studyMaterial = StudyMaterial.getStudyMaterial(); private Map<String, Runnable> actions = new HashMap<>();

public StudyRegistryController() {
 assignActions();
}

void assignActions(){
 actions.put("1" this::handleAddStudyTask).

Perguntar ao Copilot

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```
actions.put("1", this::handleAddStudyTask);
actions.put("2", this::handleAddStudyGoal);
actions.put("3", this::handleAddStudyMaterial);
actions.put("4", this::handleAddStudyObjective);
actions.put("5", this::handleAddStudyPlan);
actions.put("6", this::handleSetUpWeek);
actions.put("7", this::handleGetWeekResponsibilities);
}

private void handleMethodHeader(String header){
    System.out.println("~~~" + header + "~~~\n");
}

private Task getStudyTaskInfo(){
    System.out.println("Type the following info: title, description, author \n");
    String title = getInput();
    String description = getInput();
    String author = getInput();
    return new Task(title, description, author, LocalDateTime.now());
}

private void handleAddStudyTask(){
    Task task = getStudyTaskInfo();
    studyTaskManager.addRegistry(task);
}

private void handleSetObjective(StudyObjective objective) {
    handleMethodHeader("(Study Objective Edit)");
    System.out.println("Type the following info: Integer id, Integer priority " +
        "Integer practicedDays, int day, int month, int year, String name, String title, String desc
        "String topic, String objectiveInOneLine, String objectiveFullDescription, String motivation
        "Double duration, boolean isActive \n");

    // Criar listas para parâmetros
    List<Integer> intProperties = Arrays.asList(
        Integer.parseInt(getInput()), // id
        Integer.parseInt(getInput()), // priority
        Integer.parseInt(getInput()), // practicedDays
        Integer.parseInt(getInput()), // day
        Integer.parseInt(getInput()), // month
        Integer.parseInt(getInput()) // year
    );

    List<String> stringProperties = Arrays.asList(
        getInput(), // name
        getInput(), // title
        getInput(), // description
        ...
    );
}
```

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```
        getInput(), // topic
        getInput(), // objectiveInOneLine
        getInput(), // objectiveFullDescription
        getInput() // motivation
    );

    Double duration = Double.parseDouble(getInput());
    boolean isActive = Boolean.parseBoolean(getInput());

    objective.handleSetObjectiveAdapter(intProperties, stringProperties, duration, isActive);
}

private StudyObjective getStudyObjectiveInfo(){
    handleMethodHeader("(Study Objective Creation)");
    System.out.println("Type the following info: title, description \n");
    String title = getInput();
    String description = getInput();
    StudyObjective studyObjective = new StudyObjective(title, description);
    handleSetObjective(studyObjective);
    studyTaskManager.addRegistry(studyObjective);
    return studyObjective;
}

// Atualizar o método getStudyPlanInfo para não usar Builder
private StudyPlan getStudyPlanInfo(){
    handleMethodHeader("(Study Plan Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyObjective studyObjective = getStudyObjectiveInfo();
    StudyPlan plan = new StudyPlan(name, studyObjective, new ArrayList<>());
    studyTaskManager.addRegistry(plan);
    return plan;
}

private void handleSetSteps(StudyPlan studyPlan) {
    handleMethodHeader("(Study Plan Edit)");
    System.out.println("Type the following info: String firstStep, String resetStudyMechanism, String co
        "String seasonalSteps, String basicSteps, String mainObjectiveTitle, String mainGoalTitle, S
        "String mainTask, @NotNull Integer numberOfSteps, boolean isImportant. " +
        "The Date to start is today, the date to end is x days from now, type the quantity of days\n

    LocalDateTime createdAT = LocalDateTime.now();

    List<String> stringProperties = Arrays.asList(
        getInput(), // firstStep
        getInput(), // resetStudyMechanism
        getInput(), // consistentStep
```

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```
        getInput(), // seasonalSteps
        getInput(), // basicSteps
        getInput(), // mainObjectiveTitle
        getInput(), // mainGoalTitle
        getInput(), // mainMaterialTopic
        getInput() // mainTask
    );

    Integer numberOfSteps = Integer.parseInt(getInput());
    boolean isImportant = Boolean.parseBoolean(getInput());
    Long daysToAdd = Long.parseLong(getInput());

    studyPlan.handleAssignSteps(
        stringProperties,
        numberOfSteps,
        isImportant,
        createdAT,
        createdAT.plusDays(daysToAdd)
    );
}

private StudyGoal getStudyGoalInfo(){
    handleMethodHeader("(Study Goal Creation)");
    System.out.println("Type the following info: name \n");
    String name = getInput();
    StudyPlan studyPlan = getStudyPlanInfo();
    handleSetSteps(studyPlan);
    StudyObjective studyObjective = studyPlan.getObjective();
    return new StudyGoal(name, studyObjective, studyPlan);
}

private void handleAddStudyGoal(){
    StudyGoal goal = getStudyGoalInfo();
    studyTaskManager.addRegistry(goal);
}

private void editAudio(AudioReference audioReference){
    handleMethodHeader("(Audio Edit)");
    System.out.println("Type the following info: AudioQuality (LOW|MEDIUM|HIGH|VERY_HIGH), isDownloadable, title, description, link, accessRights, license, language, rating, " +
        "viewCount, shareCount");

    AudioReference.AudioBuilder builder = new AudioReference.AudioBuilder()
        .audioQuality(AudioReference.audioQualityAdapter(getInput()))
        .downloadable(Boolean.parseBoolean(getInput()))
        .title(getInput())
        .description(getInput())
}

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```

```
        .link(getInput())
        .accessRights(getInput())
        .license(getInput())
        .language(getInput())
        .rating(Integer.parseInt(getInput()))
        .viewCount(Integer.parseInt(getInput()))
        .shareCount(Integer.parseInt(getInput()));

    audioReference.editAudio(builder);
}

private AudioReference addAudioReference(){
    handleMethodHeader("(Audio Reference Creation)");
    System.out.println("Type the following info: Audio Quality ( LOW | MEDIUM | HIGH | VERY_HIGH ) \n");
    AudioReference audioReference = new AudioReference(AudioReference.audioQualityAdapter(getInput()));
    editAudio(audioReference);
    return audioReference;
}

private VideoReference addVideoReference(){
    handleMethodHeader("(Video Reference Creation)");
    System.out.println("Type the following info: boolean isAvailable, String title, " +
        "String description, String resolution, String frameRate, String videoFormat, String accessR
    return new VideoReference(Boolean.parseBoolean(getInput()), getInput(), getInput(), getInput(), getI
        getInput(), getInput());
}

private TextReference addTextReference(){
    handleMethodHeader("(Text Reference Creation)");
    System.out.println("Type the following info: String title, String language, int wordCount, String f
    return new TextReference(getInput(), getInput(), Integer.parseInt(getInput()), getInput(),
        getInput());
}

private Reference addStudyMaterial(){
    handleMethodHeader("(Study Material Creation)");
    System.out.println("Type the following info: ( AUDIO | VIDEO | TEXT ) \n");
    String type = getInput();
    return switch (type.toLowerCase()) {
        case "audio" -> addAudioReference();
        case "video" -> addVideoReference();
        case "text" -> addTextReference();
        default -> null;
    };
}

private void handleAddStudyMaterial(){

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```

```
        Reference reference = addStudyMaterial();
        if(reference != null){
            studyMaterial.addReference(reference);
        }
    }

    private void handleAddStudyObjective(){
        getStudyObjectiveInfo();
    }

    private void handleAddStudyPlan(){
        getStudyPlanInfo();
        System.out.println("Study Plan Added");
    }

    private void getWeekInfo() {
        System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, Strin
        "String objectiveDescription, String materialTopic, String materialFormat, String goal, Stri
        "String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");

        WeekSetup weekSetup = new WeekSetup(
            getInput(), // planName
            getInput(), // objectiveTitle
            getInput(), // objectiveDescription
            getInput(), // materialTopic
            getInput(), // materialFormat
            getInput(), // goal
            getInput(), // reminderTitle
            getInput(), // reminderDescription
            getInput(), // mainTaskTitle
            getInput(), // mainHabit
            getInput() // mainCardStudy
        );

        studyTaskManager.setUpWeek(weekSetup);
    }

    private void handleSetUpWeek(){
        getWeekInfo();
    }

    private void handleGetWeekResponsibilities(){
        List<String> responsibilities = studyTaskManager.getWeekResponsibilities();
        System.out.println(String.join(", ", responsibilities));
    }

    public void handleRegistryTnout() {
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    }
}
```

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```

public void handleRegistryInput(){
    try{
        while(true){
            controllerOptions();
            String response = validateInput(actions);
            if(response == null) {return;}
            actions.get(response).run();
        }
    }catch (Exception e){
        System.out.println(e.getMessage());
    }
}

public static void controllerOptions(){
    System.out.println("""
        0 - return
        1 - add study task
        2 - add study goal
        3 - add study material (audio, video, text)
        4 - add study objective
        5 - add study plan
        6 - set up week
        7 - get week responsibilities
    """);
}
}

```

fix the error: constructor WeekSetup in class org.example.studyregistry.WeekSetup cannot be applied to given types;

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Plano de Refatoração

1. Atualizar método `getWeekInfo()` para usar o Builder do `WeekSetup`
2. Ajustar a ordem de leitura dos inputs para corresponder à estrutura do `WeekSetup`

```

private void getWeekInfo() {
    System.out.println("(Study Task Manager Week Set Up) Type the following info: String planName, Strin
        "String objectiveDescription, String materialTopic, String materialFormat, String goal, Stri
        "String reminderDescription, String mainTaskTitle, String mainHabit, String mainCardStudy");

    WeekSetup weekSetup = new WeekSetup.Builder()
        .plan(getInput()) // planName
        .objective(getInput(), getInput()) // objectiveTitle, objectiveDescription
        .material(getInput(), getInput()) // materialTopic, materialFormat
        ...
}

```

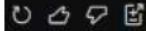
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```
.reminder(getInput(), getInput()) // reminderTitle, reminderDescription
.mainItems(getInput(),           // mainTaskTitle
          getInput(),           // mainHabit
          getInput(),           // mainCardStudy
          getInput())           // goal
.build();

studyTaskManager.setUpWeek(weekSetup);
}
```



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