Programmierpraktikum WiSe 2024/25
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Multimodal Parliament Explorer

1.b Project Planning and Design - UML Diagrams

1.b.1 Use Case Diagram
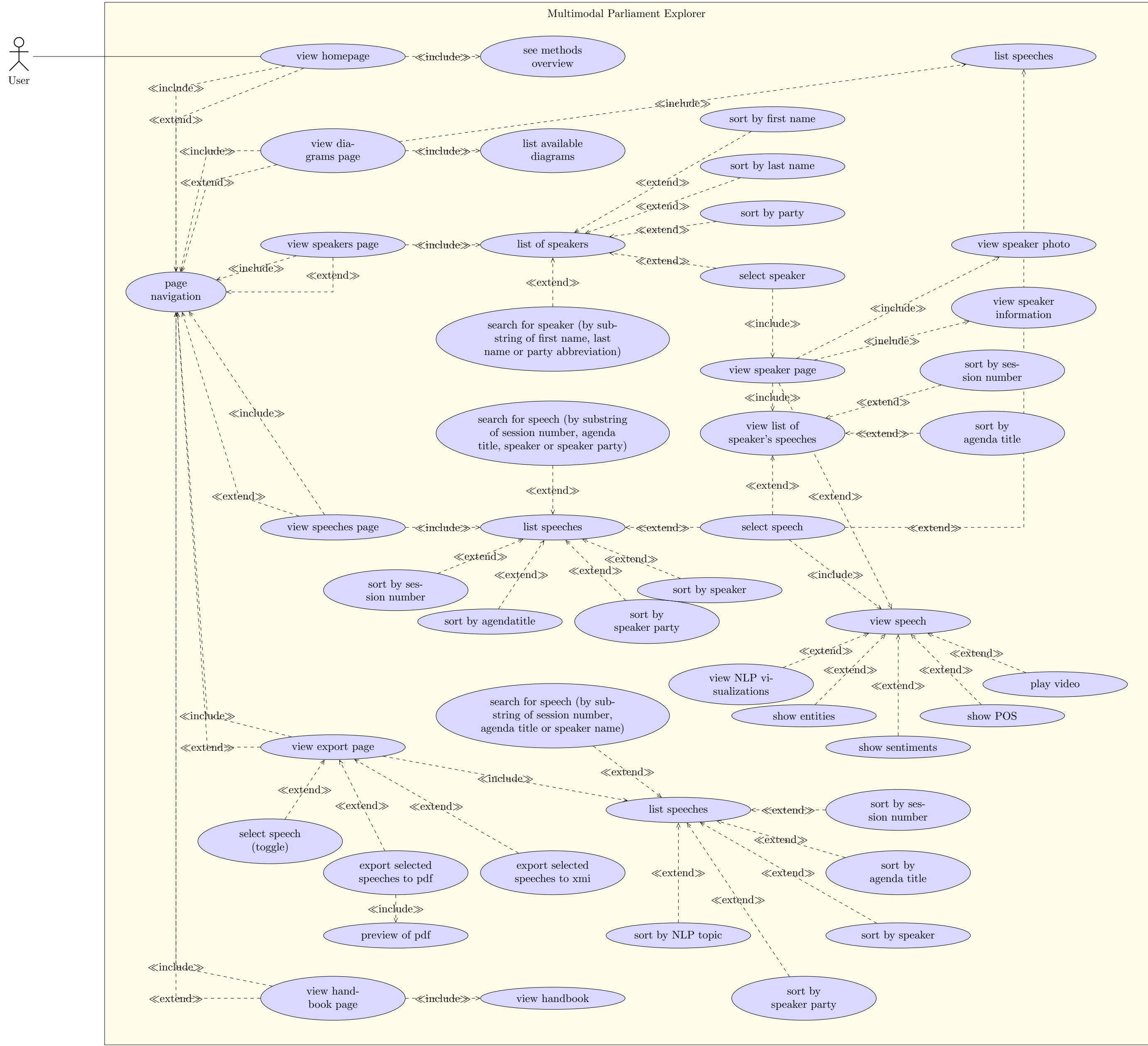
1.b.2 Package and Class Diagram

java

Main
+ main(args : String[])

parliament

«interface» Picture
getPictureNumber() : int
getDescription() : String
setDescription(description : String)
getSpeaker() : Speaker
setSpeaker(speaker : Speaker)
getLocation() : String
setLocation(location : String)
getDateTime() : LocalDateTime
setDateTime(dateTime : LocalDateTime)
getPhotographer() : String
setPhotographer(photographer : String)
getURL() : String
setURL(url : String)

«interface» Speaker
getID() : String
getFirstName() : String
setFirstName(firstName : String)
getLastName() : String
setLastName(lastName : String)
isMember() : boolean
setMembership(membership : boolean)
getLocation() : String
setLocation(location : String)
getNobility() : String
setNobility(nobility : String)
getPrefix : String
getPrefix(prefix : String)
getAddressTitle() : String
setAddressTitle(addressTitle : String)
getAcademicTitle() : String
setAcademicTitle(academicTitle : String)
getDateOfBirth() : LocalDate
setDateOfBirth(dateOfBirth : LocalDate)
getPlaceOfBirth() : String
setPlaceOfBirth(placeOfBirth : String)
getCountryOfBirth() : String
setCountryOfBirth(countryOfBirth : String)
getDateOfDeath() : LocalDate
setDateOfDeath(dateOfDeath : LocalDate)
getGender() : String
setGender(gender : String)
getMaritalStatus() : String
setMaritalStatus(maritalStatus : String)
getReligion() : String
setReligion(religion : String)
getProfession() : String
setProfession(profession : String)
getCurriculumVitae() : String
setCurriculumVitae(curriculumVitae : String)
getParty() : Party
setParty(party : Party)
getGrouping() : Grouping
setGrouping(grouping : Grouping)
getPicture() : Picture
setPicture(picture : Picture)

«interface» Grouping
isGroup() : boolean
setGroupStatus(group : boolean)

«interface» Party
getName() : String
setName(name : String)
getMembers() : Set<Speaker>
addMember(member : Speaker)
removeMember(member : Speaker)

«interface» Video
getID() : String
getSession() : Session
getURL() : String
setURL(url : String)

«interface» Speech
getID() : String
getSpeaker() : Speaker
setSpeaker(speaker : Speaker)
getAgendaItem() : AgendaItem
getSession() : Session
getContents() : LinkedList <Content>
addContent(content : Content)
getVideo() : Video
setVideo(video : Video)

«interface» Content
getID() : String
getContentTag() : ContentTag
getText() : String
getSpeech() : Speech

«interface» AgendaItem
getTitle : String
setTitle(title : String)
getSession() : Session
getSpeeches() : LinkedList<Speech>
addSpeech(speech : Speech)

«interface» Session
getSessionNr() : int
getDate() : LocalDate
setDate(date : LocalDate)
getStartTime() : LocalTime
setStartTime(startTime : LocalTime)
getEndTime() : LocalTime
setEndTime(endTime : LocalTime)
getAgendaItems : LinkedList<AgendaItem>
addAgendaItem(agendaItem : AgendaItem)

«enum» ContentTag
SPEAKER_INTRODUCTION,
SPEECH_TEXT,
QUOTE,
COMMENT

«interface» ParliamentFactory
createAgendaItem(
 title : String, session : Session
) : AgendaItem
getAgendaItems() : Set<AgendaItem>
createContent(
 contentTag : ContentTag,
 text : String, speech : Speech
) : Content
getContents() : Set<Content>
createGrouping(
 name : String, group : boolean
) : Grouping
getGroupings() : Set<Grouping>
createParty(name : String) : Party
getParties() : Set<Party>
createPicture(
 pictureNumber : int
) : Picture
getPictures() : Set<Picture>
createSession(sessionNr : int) : Session
getSessions() : Set<Session>
createSpeaker(id : String,
 lastName : String, firstName : String
) : Speaker
getSpeakers() : Set<Speaker>
createSpeech(id : String,
 speaker : Speaker,
 agendaItem : AgendaItem
) : Speech
getSpeeches() : Set<Speech>
createVideo(id : String,
 session : Session, url : String
) : Video
getVideos() : Set<Video>

impl

PictureImpl
- pictureNumber : int
- description : String
- speaker : Speaker
- location : String
- dateTime : LocalDateTime
- photographer : String
- url : String

~ PictureImpl(pictureNumber : int)

GroupingImpl
- group : boolean

~ GroupingImpl(name : String,
group : boolean)

PartyImpl
- name : String
- members : Set<Speaker>

~ PartyImpl(name : String)

SpeakerImpl
- id : String
- lastName : String
- firstName : String
- member : boolean
- location : String
- nobility : String
- prefix : String
- addressTitle : String
- academicTitle : String
- dateOfBirth : LocalDate
- placeOfBirth : String
- countryOfBirth : String
- dateOfDeath : LocalDate
- gender : String
- maritalStatus : String
- religion : String
- profession : String
- curriculumVitae : String
- party : Party
- grouping : Grouping
- picture : Picture

~ SpeakerImpl(id : String,
lastName : String,
firstName : String)

VideoImpl
- id : String
- session : Session
- url : String

~ VideoImpl(id : String
session : Session,
url : String)

SpeechImpl
- id : String
- speaker : Speaker
- agendaItem : AgendaItem
- contents : LinkedList<Content>
- video : Video

~ SpeechImpl(id : String,
speaker : Speaker,
agendaItem : AgendaItem)

ContentImpl
- id : String
- contentTag : ContentTag
- text : String
- speech : Speech

~ ContentImpl(
contentTag : ContentTag,
text : String,
speech : Speech)

AgendaItemImpl
- title : String
- session : Session
- speeches : LinkedList<Speech>

~ AgendaItemImpl(title : String,
session : Session)

SessionImpl
- sessionNr : int
- date : LocalDate
- startTime : LocalTime
- endTime : LocalTime
- agendaItems : LinkedList<AgendaItem>

~ SessionImpl(sessionNr : int)

ParliamentFactoryImpl
- agendaItems : Set<AgendaItem>
- contents : Set<Content>
- groupings : Set<Grouping>
- parties : Set<Party>
- pictures : Set<Picture>
- sessions : Set<Session>
- speakers : Set<Speaker>
- speeches : Set<Speech>
- videos : Set<Video>

+ ParliamentFactoryImpl()

helpers

parsing

General

Member

Protocol

DataChecker

Downloader

LookupTimer

Util

VideoDownloader

Config

rest

«interface» RESTInterface
GetREST()
PostREST()
PutREST()
DeleteREST()
PatchREST()

RESTHandler
+ RESTHandler()

«interface» IRESTEvent

PageController

database

«interface» MongoDatabaseHandler
CreateMDB()
ReadMDB()
UpdateMDB()
DeleteMDB()
AggregateMDB()
CountMDB()

MongoDatabaseHandlerImpl
+ MongoDatabaseHandlerImpl()

FactoryToMongoDB

nlp

DUUI Reader

DUUI Reader Video

DUUI Writer

DUUI Writer Video

NLPHandler
init() (for docker initialization)
runDockerDriver() (loop with analyzeCas())
analyzeCas() (runs speech through analysis)
analyzeVideo() (whisper)

JCasGen

annotation

Dependency

Lemma

NamedEntity

Pos

Sentence

SentimentBert

Token

Topic

resources

config

doc

export

pdf output

tex output

xmi output

members

speeches

typesystems

web

pages

js

components

styles

export

TeXMaking
- var : int
- fileName : String

+ makeTex(ids : List<String>, fileType : String)
+ isPdflatexInstalled() : boolean

tex building blocks

Texify
- fileName : String
- pathFileName : String
- texText : LinkedList<String>

Texify(fileName : String, texPath : String)
+ getFileName() : String
+ getTexText() : LinkedList <String>
+ addToTexText(text : String)
+ toTex() : String

TexNLPVisualisation
TexNLPVisalisation(
String fileName, String texPath)

TexFactory
- pdfPath : String
- texPath : String

+ TexFactory(pdfPath : String, texPath : String)
+ createTexDocument(String fileName,
LinkedList<TexSessionProtocol>sessionProtocols) : TexDocument
+ createTexNLPVisualisation() : TexNLPVisualisation
+ createTexSessionProtocol() : TexSessionProtocol
+ createTexSpeakerInfo() : TexSpeakerInfo
+ createTexSpeech() : TexSpeech
+ compilePDF()

TexSessionProtocol
TexSessionProtocol(String fileName, String texPath,
SortedMap<String, LinkedList<TexSpeech>>agendaItemMap

TexSpeakerInfo
TexSpeakerInfo(String fileName, String texPath)

TexSpeech
TexSpeech(String fileName, String texPath, JCas cas)
TexSpeech(String fileName, String texPath, Document speech)

TexDocument
- String preamble

TexDocument(String fileName, String texPath,
LinkedList<TexSessionProtocol>sessionProtocols)

xmi building blocks

Xmlify
- fileName : String
- pathFileName : String
- texText : LinkedList<String>

Xmlify(fileName : String, xmiPath : String)
+ getFileName() : String
+ getXmiText() : LinkedList <String>
+ addToXmiText(text : String)
+ toXmi() : String

TXmiNLPVisualisation
XmiNLPVisualisation(
String fileName, String xmiPath)

XmiFactory
- xmiPath : String

+ XmiFactory(xmiPath : String)
+ createXmiDocument(String fileName,
LinkedList<XmiSessionProtocol>sessionProtocols) : XmiDocument
+ createXmiNLPVisualisation() : XmiNLPVisualisation
+ createXmiSessionProtocol() : XmiSessionProtocol
+ createXmiSpeakerInfo() : XmiSpeakerInfo
+ createXmiSpeech() : XmiSpeech

XmiSessionProtocol
XmiSessionProtocol(String fileName, String xmiPath,
SortedMap<String, LinkedList<XmiSpeech>>agendaItemMap

XmiSpeakerInfo
XmiSpeakerInfo(String fileName, String xmiPath)

XmiSpeech
XmiSpeech(String fileName, String xmiPath, JCas cas)
XmiSpeech(String fileName, String xmiPath, Document speech)

XmiDocument
XmiDocument(String fileName, String xmiPath,
LinkedList<XmiSessionProtocol>sessionProtocols)

frontend

«interface» IRenderable

SpeakerCardRenderer

SpeechCardRenderer