

## Front-End Framework Selection

### main research question

what kind of libraries and frameworks could be used to help self employed people to create invoices in such a way that its easy to use, reusable and maintainable?

1.

what methods could be used to create a simple yet effective way to create an invoice?

2.

what methods could be used to create a reusable incoice template that also has the potential to be updated?

3.

what framework could be used to implement the required methods and features

4.

what libraries for the chosen framework could help with the implementations of the required features

### features

#### drag and drop

this way the user can create a template by adding a elements to the page and drag it the the location that they want the information to be on

#### rest service client

this is needed to be able to manipulate the data on the database, that both the companies and the customers can connect to.

#### multipage

this is needed because several crud functionalities are present in the appcaltion, and if its all on one page than it becomes messy and very un user friendly

#### form validation

this is needed to avoid sending incomplete or incorrect information to the api, which might cause problems

#### pdf conversion

this is needed, because the companies and the customers must be able to download + print the invoices that are created

	react	angular	vue
drag and drop	+	+	+
rest service client	+	+	+
multipage	-	+	+
form validation	+	+	+
pdf conversion	+	+	+
	4	5	5

### conclusion

both vue js and agular are capable of all the required functionalities, but from what i could see angular seems to be a bit more easy to use for my required features . The coding structure of both frameworks are close, but based on the examples that i could see of the required features it seems that angular is just bit more manageable and clean. that is why i have chosen angular as the framework for my personal project.

## Back-End Framework Selection

### main research question

what framework could i use to create an safe yet easy to maintain restfull api that allows for easy expension options

1. how can i integrate a database framework that creates the tables and allows for easy data manipulation
2. how can i keep my restfull api protected, so that not just anyone can request data from the database
3. what can i use to properly encode and validate user passwords
4. how and where can i upload files with the option to share it between companies and a user

### features

#### database framework

this way i can create a easly manageable connection with the database with a lot of room for expentions

#### restfull api

this is needed to be able to use the application with several different kinds of front-end applications

#### password encryption

this is needed to be able to protect the users passwords in case someone gets their hands on the database

#### authentication services

this is needed to make sure that only people with the right connction code can access the back-end api, to prevent people for trying to steal confidential information that has been stored in the database

#### file upload support

this is needed to be able to upload and share invoices between companies and customers

	C#	Java
database framework	+	+
restfull api	+	+
password encryption	+	+
authentication services	+	+
file upload support	+	+
	5	5

### conclusion

Both C# and Java offer all the components that are required to build my application, that is why after some thinking I've decided to chose Java for my project. the reason for the decision is that I would like to learn how to program into Java, so that I have some expiriance with both C# and Java for the next time i need to make a decision like this. another reason is that Java is something we have to use for the current semester, because of this it will be easier to ask for help in case I get stuck and in turn will allow me to learn and get a better understanding about the programming language faster.