PENTAPP

Final Document

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1. Contract of PentApp

This contract is entered between the members of *PentApp;*
FERCHAUD Julie, ROOBAERT Louis, SPRENGER Isabelle, TASTENHOYE Keanu, VANDEWYNGAERT Phloy.

Contract Period

2020 – 2021, semester 1

General Information

PentApp consists of two elements: 'Pent' which is derived from the Greek prefix "Penta-" which means five, the number of team members. And 'App' the abbreviation of Application.

As you can see, our logo is composed of two elements: A pentagon, a five angled shape representing the five team members working together on a project from different angles/ perspectives. Every member has his / her own role which creates a perfectly harmonious group dynamic.

Within the pentagon is the pentagon rose. This is a type of origami flower. Origami is the Japanese art of folding paper in straight lines, step by step creating decorative shapes and figures. This is reflected in our way of working; agile, behaviour driven development. We chose this specific flower because each flower pedal represents the flow of a sprint in which we begin by talking to the client and creating acceptance criteria, so we are on the same page. Afterwards we will be working together to create something to present and then reflect on what we made, next we will check in with the client to see if what we are making is up to their standards and expectations.

These steps are continuously repeated to make sure we deliver the best possible end result. In this way we can work flexible as a team. We are ready to grow with different visions on specific problems, but we intertwine into a perfectly harmonious group.

The mission is very much defined by our logo, we work in steps and try to achieve the best possible result by doing it.

Our vision is quite simple, we just want a good relationship with the client. This means being on the same page with each other and developing the product that the client desires.

Specific obligations (roles)

- ***Team leader:*** Isabelle Sprenger, responsible for the team organisation and the equal division of the workload.

- ***Marketeer*:** Julie Ferchaud, responsible for all marketing related tasks, including the image of the company.

- ***Single Point of Communication (SPOC):*** Louis Roobaert, responsible for all contact between our company, the client and the lecturer. This is the person who uploads everything before the deadline.

- ***Sharepoint Admin***: Louis Roobaert, responsible for the SharePoint.

- ***Secretary****:* Keanu Tastenhoye, responsible for all notes and documents that are made in the name of our company.

- ***Time manager***: Phloy Vandewyngaert, responsible for keeping track of deadlines and meetings that are planned in the name of our company.

General obligations

We continuously support & motivate each other. To deliver the best teamwork we possibly can we will be working mentally as one. Everyone is expected to be completely transparent with each other about what is going on and we are encouraged to speak our minds and define ourselves until we see all angles of the problem.

The following tools will be used to communicate: Teams, Messenger, Toledo collaborate.
The following tools will be used to share documents: Toledo, UCLL SharePoint
Contact moments before class will be discussed each Wednesday afternoon during the last class. From the teacher we expect regular feedback and answers to our questions.

Breach of Contract

I hereby declare that I accept and have read everything that is declared above.

Date and place   Signatures of all members

2. Business and functional analysis for the project

2.1 The business (AS-IS)

RealDolmen is a company that provides ICT solutions. However, they still have some minor setbacks within their internal processes. You would think that a big ICT company like RealDolmen would have digitized everything by 2020, but through circumstances an important process still hasn't been digitized. They have a lot of IT consultants who need training to be up to date with the newest technologies.

That's where we, PentApp, come in the picture. For an ICT company like RealDolmen, it is extremely important to keep up with the latest ICT solutions and technologies. Even more so during this day and age, especially during this pandemic where everything has to be online.

Right now, the process for applying for a training is not digitized. This means that there is a lot of paperwork that gets lost in the pile of "TO-DO paperwork". Which leads to nobody having a digitized overview of where the application is in the process or if it's even processed at all. This is a major setback, which causes bad morale and dissatisfaction, not to mention they can't keep up with the already digitized competition. RealDolmen described the process as such;

The paperwork begins when a consultant would like to apply for a training. He/she needs to fill in a form that will then be sent to the HR department. HR must check the availability, the price, etc. of the training.

After all the necessary information is gathered by the HR department, all the corresponding paperwork is then sent to the manager for approval.

Once the manager gives his approval the training can then be booked by HR and the consultant must be informed whether he or she can take part in the training. If the manager declines the application for any reason whatsoever, nor the consultant, nor HR are aware of the exact reason of this declination.

As you can see this process can lead to many bottlenecks. For example, the application form can get lost on the desk of the consultant or on the way to the HR department were they also have other tasks that need their attention, the same goes for the manager.

This process is very inefficient and takes a lot of manual work. It is almost impossible for the consultant to follow up on his or her request of the training. We believe that education is the most powerful tool in which you can change the world. For this reason, it is absolutely essential to digitize this process for the benefit of the business.

2.2 The business events

- Consultant requests training
- HR gathers training info
- Manager approves/disapproves training
- Hr books training
- HR wants an overview of the request that need their attention
- Manager wants an overview of the to be approved trainings
- Consultant wants an overview on the status of his requests
- Consultant wants an overview of all the trainings

2.3 User roles

- Consultant
- Manager
- HR officer (admin)

2.4 User stories

- As a consultant I can search for trainings so that I can find relevant trainings. → High priority
- As a consultant I want to follow up my training request~~,~~ so that I know the status of the request. → Low priority
- As a consultant I want an overview of my approved trainings so I that I can stay organised. → Low priority
- As a consultant I want an overview of all the trainings. → High priority
- As a consultant I want an option to subscribe for a training. → Medium priority
- As HR I want to delete trainings so that I can maintain the catalogue. → Low priority
- As HR I want to add trainings so that I can maintain the catalogue. → High priority
- As HR I want to edit trainings so that I can maintain the catalogue. → High priority
- As HR I want to be able to book a training so that a consultant can follow it. → High priority
- As HR I want an overview of the to be approved trainings. → Medium priority
- As HR I want to validate requests before sending them to a manager. → Medium priority
- As a manager I want to approve / disapprove a training so that it can be booked or not. → Medium priority
- As a manager I want to add a comment to a training request so that I can give extra information. → Low priority
- As a manager I want an overview of the trainings so that I can stay organised. → Medium priority
- As a manager I want an overview of the to be approved trainings. → High priority

2.5 Plan of approach

The first step in our plan of approach is to define each problem clearly in order to better understand them and put in place actions to solve them.

One of the major problems is that consultants can't see all available trainings and don't know where to find it, once they have found a suitable training it is a hassle to actually be able to book the training. And it is impossible to follow up on a request.

Therefore, we propose one simple interface that can be used by consultants, human resources and managers. Through this interface we are hoping to make life easier for everybody involved. Especially in this day and age, consultants of a company need to keep up with new ways to self-improve so that the business can grow. That is why it is important that trainings are easily applied for.

First, we need to create a catalogue where all available trainings are listed. Here it is important that consultants can filter for suitable trainings. With a click of a button, human resources will be notified of the training the consultant wishes to follow. HR will then gather all the appropriate information, this will then be sent to the manager. He / she will then approve / disapprove the request. The consultant can follow his / her request by means of a status that is provided on his overview page.

They need to be able to see the available trainings without having to search for a long time. On this interface, we will have to create a button so that they can easily apply for a training in the catalogue. In addition, consultants must also be able to search by the skills that training brings. This means that we need to create a search engine that includes the trainings and the skills they bring.

Another of the main problems was the large amount of manual work that had to be done for each request and the impossibility to follow the progress of a training request. We therefore need to digitize and automate the process of accepting and tracking requests.

We work in an agile environment so every 2 weeks we will meet with RealDolmen for a customer sprint review meeting in which we present our work and possible changes that have been made. In these sprints we will ask the client for feedback and continue working on the project according to the client’s wishes.

These are the deliverables we plan to show RealDolmen after every sprint. Bear in mind that the order can change as we will most likely work in a parallel way because both parts are affected by each other and also depending on the start date of the project~~.~~

- Sprint 1
    - Admin finished
- Sprint 2
    - Possible changes to Admin & Catalogue finished
- Sprint 3
    - Possible changes to Admin & Catalogue

2.6 Estimated cost

For the amount of time we will be investing in this project we went looking at the European school system. This project is on average the size of a 6-credit subject. But because the project only takes of half of the eventual grade, we had to calculate it based on a 3-credit subject. One credit is on average 25 hours work, which makes 3 credits a total of 75 hours.

In order to bring this project to a successful conclusion, we thought that 11 weeks would be sufficient to complete this project. If we divide the total hours by the number of weeks, we find 6.8 hours/week. This brings us, with some spare time for unexpected circumstances, on an average of 1 day a week or a total of 11 days spend/person.

The grand total of this project will come on 7911 €. We found this number by simply multiplying the amount of days with the total price per day for our team.

The measurement that we used for the amount of days consist out of an 8-hour workday.

We placed following tasks under the different profiles:

- Project Manager
    - Presentation creation & the actual presentation
    - Creating documents for the client
- Solution Consultant
    - Creating & correcting the documents
- Developer
    - SharePoint development
    - Power Apps development
    - Power Automate development
- Analyst
    - Creating & correcting the ERD
    - Creating & correcting the workflows
    - Creating & correcting the wireframes

Profile	Price per Day	Amount of Days	Amount of Time	Total Price per Profile
Project Manager	900 €	1,68	15,27 %	1512 €
Solution Consultant	750 €	2,84	25,81 %	2129 €
Developer	650 €	5,34	48,50 %	3468 €
Analyst	700 €	1,15	10,42 %	802 €
Total		**11**	**100,00 %**	**7911 €**

3. Architecture and information plan

3.1 The intranet

There will be three main roles using this site: a **consultant**, an **HR officer** and a **manager**. Each role has different needs that we wish to fulfill.

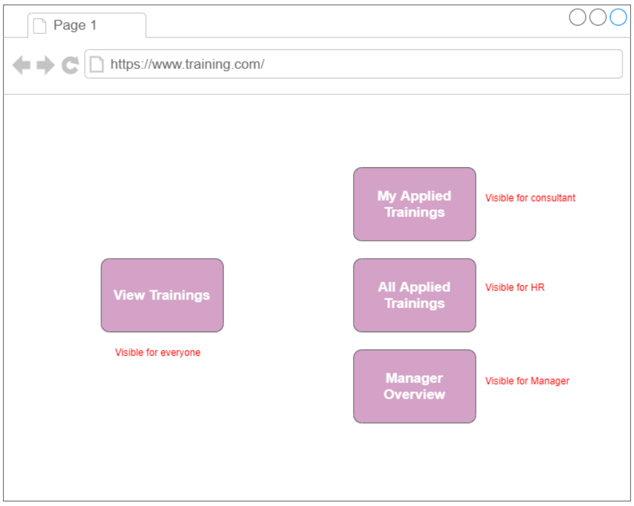
- The goal of the consultant is having access to an easy-to-use platform where he / she can search and request trainings to further evolve their skills and gain certificates.
- The goal of the HR officer is having a clear and functional overview of all training requests that need their attention. They also want to manage the training list.
- The goal of the Manager is having a structured overview of trainings that their consultants want to follow and a clear overview of all requests that they need to accept or decline.

The most important part of this project is that previous flaws are solved and that everything works more fluent in general.

3.2 Structure of the site

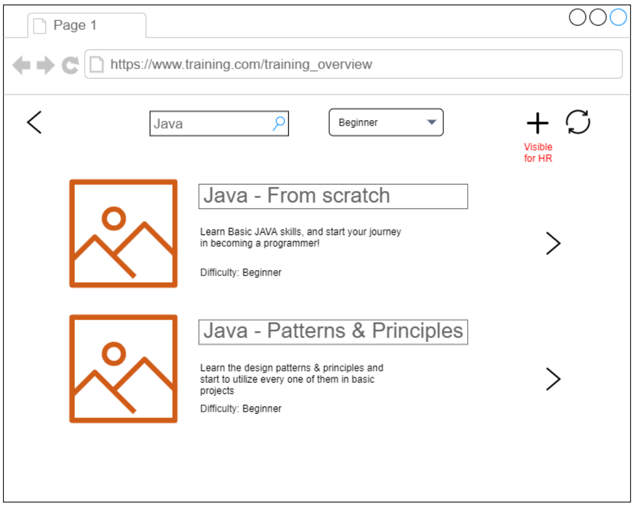
The structure goes as follows:
Each consultant has a HR officer and a manager. But multiple consultants can fall under the same HR officer or Manager.

It all begins with the landing page. Where there will be 4 buttons that will work as a navigation.

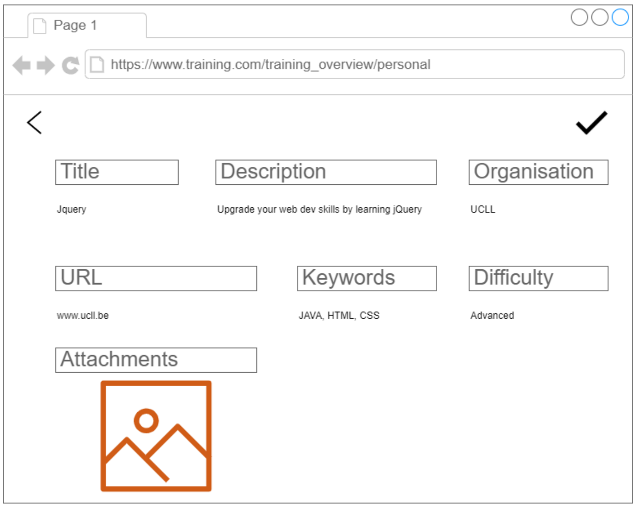


The **consultant** wants to attend trainings. Therefore, he / she needs to be able to see a list of trainings. This list is available for everybody.

The **HR officer** can see a '+' sign on this page, when he / she clicks this icon, a window appears where they are able to add a new training.

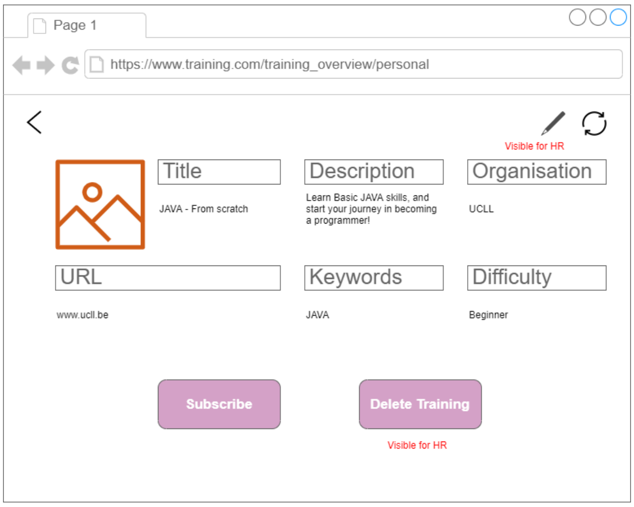


This is the page that the **HR officer** sees when he / she wants to add a training.

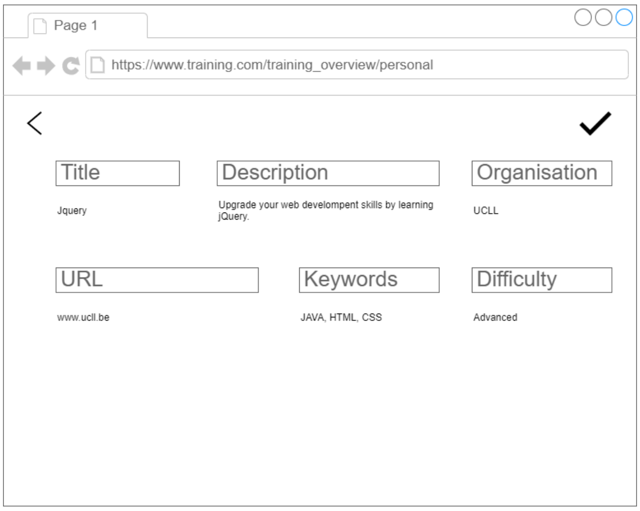


After a click on a training, a new window opens where more information off the training will be visible. This is of course visible for everybody.

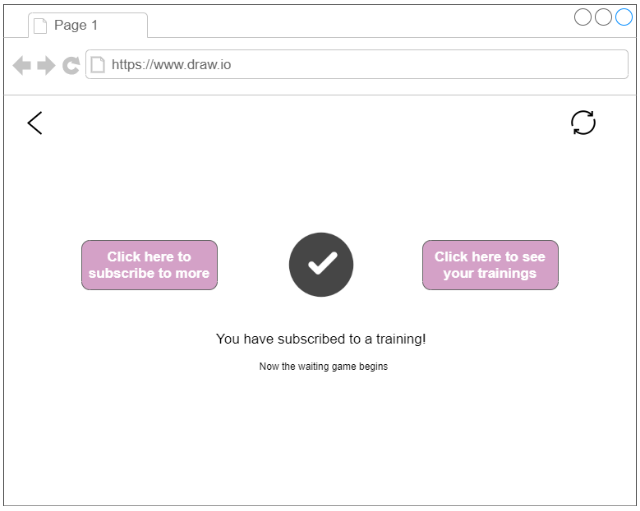
The **HR officer** is also able to edit a training. On top of this page there is a pencil icon, after he / she clicks this icon, the edit window will appear.



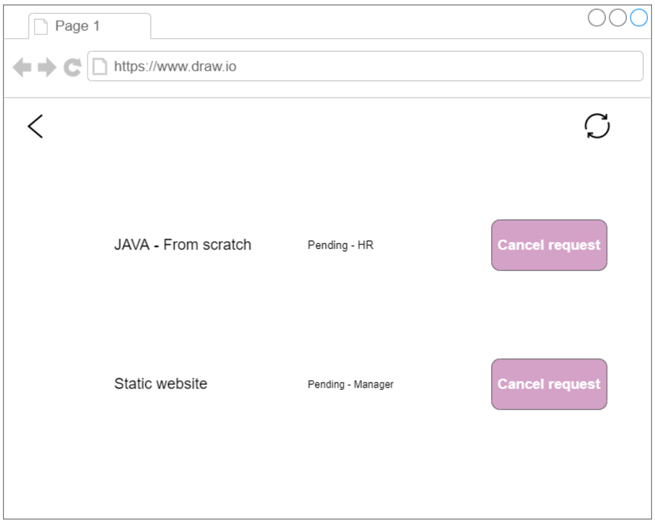
This is the page that the **HR officer** sees when he / she wants to edit a page.



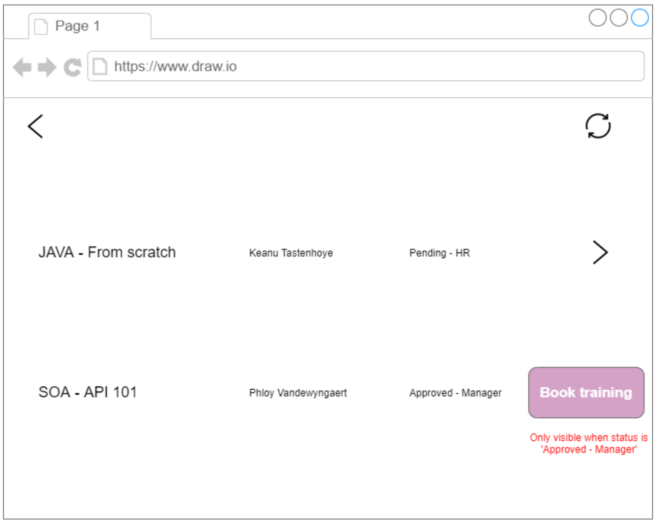
After a **consultant** subscribes to a training, he / she will be able to see the following screen.



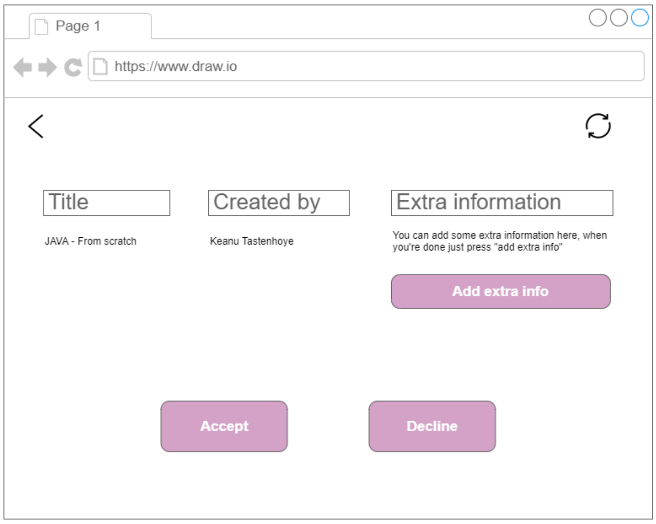
When a **consultant** wants to check on his / her training requests, he / she can consult the 'my applied trainings' screen.



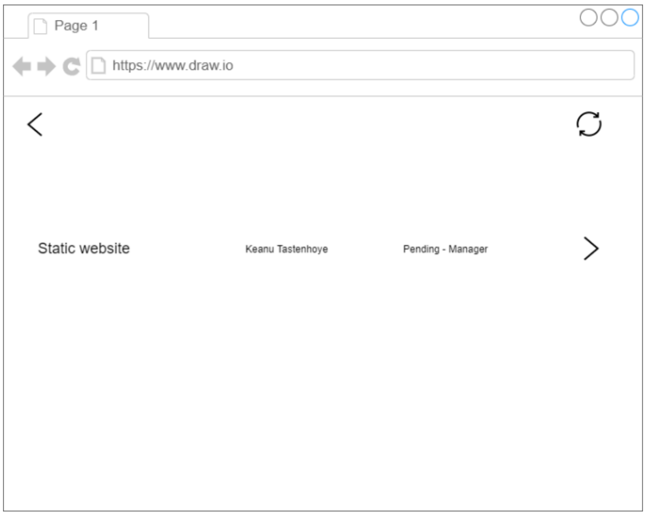
After a consultant subscribes to a training, the status of the request becomes 'Pending – HR'.
The **HR officer** can check on the applied trainings in his / her overview. On this page only the requests with a status of 'Pending – HR' or 'Approved – Manager' will be visible.
If the status of a request is 'Approved – Manager' a button will appear next to it that says 'Book training'.



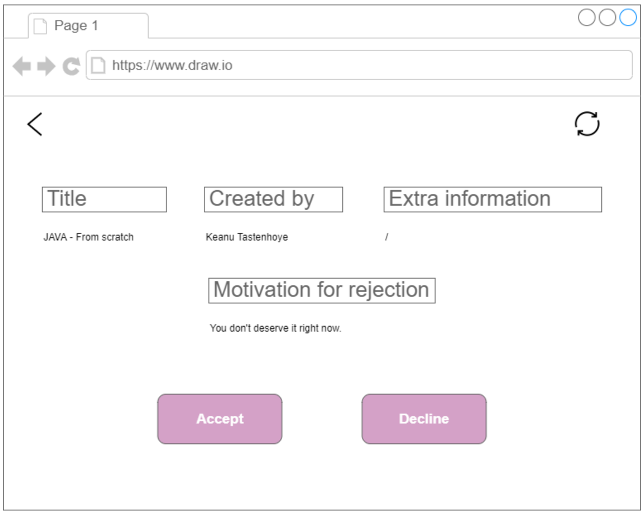
When the **HR officer** clicks on a training request in his / her overview, they will be able to see more details of the training request and an input field where extra information can be added.
After this the HR officer can either accept or decline the request.



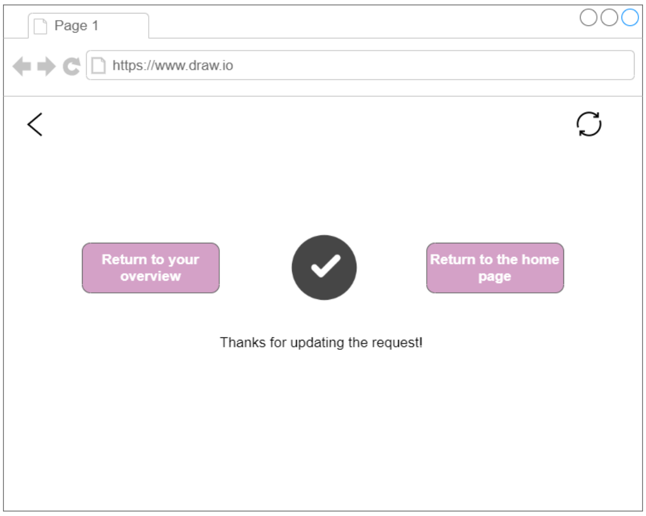
The **manager** can also check on the request that needs his / her attention.



Just as with the HR officer, the **manager** is also able to click on training request, this will lead them to this page. Here the manager can either accept or decline the request, but if the manager chooses to decline it, he / she does have to enter a motivation for rejection.



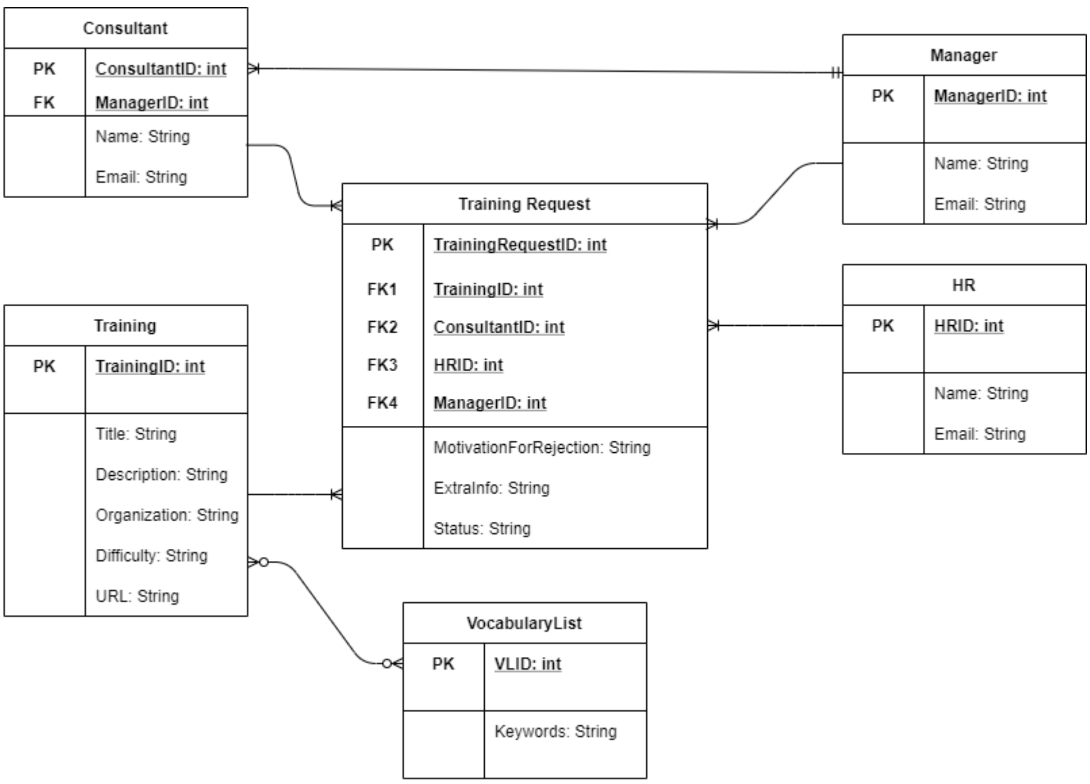
After the **HR officer** or **Manager** accepts or declines a training, he / she will be able to see the following screen.



3.3 The content types

Name of the content type	Description	Used by	Source	Retention period	Compliancy	Template
Training	Training that the consultant can follow	Consultant (View) HR (View, Create, Edit, Delete)	The company that organizes the training.	All the info of the training is saved for as long as the company organizes the specific training	/	A brief explanation of the training, duration, organization, price, date and link to the organizations page.
Training Request	A request to apply for a training	Consultant (Create, View) HR (Validate, Decline) Manager (Approve, Decline)	Application by the consultant	Until the start date of the training	/	The apply button that the consultant uses

3.4 ERD



3.5 The metadata model

Training

Metadata element	Data type	Length	Repeat	Source	Purpose
Title	String	64	No	Training Catalogue	To decide
Organization	String	128	No	Training Catalogue	For verification / possible reliability purposes
Difficulty	String	16	No	Organizations website	To decide
Description	String	512 (Undefined)	No	Organizations website	To decide
Keywords	List	Undefined	Yes	Vocabulary List	Searching purposes
URL	String	256	No	Training Catalogue	For booking purposes for HR

Training Request

Metadata element	Data type	Length	Repeat	Source	Purpose
Training ID	int	16	No	Training	Link to training
Consultant ID	int	16	No	Consultant	Link to consultant
HR ID	int	16	No	HR	Link to HR
Manager ID	Int	16	No	Manager	Link to manager
Motivation for rejection	String	512 (undefined)	No	Manager	Motivate decision
Extra Info	String	512 (undefined)	No	HR	For manager
Status	String	16	No	HR / Manager	Booking purposes

3.6 Views

Landing page:

This is the home page. This page consists out of 4 buttons.

- View trainings
- My applied trainings
- All applied trainings - HR
- All applied trainings - Manager

The ‘View trainings’ & ‘My applied trainings’ buttons are visible for the consultants. They respectively lead to the ‘Training overview’ page and the ‘Consultant requested training overview’ page.

The ‘All applied trainings - HR’ button is visible for the HR officer and will lead to the ‘HR requested training overview’ page.

The ‘All applied trainings - Manager’ button is visible for the Manager and will lead to the ‘Manager requested training overview’ page.

Training overview page:

On this page, the consultant will see a list of all available trainings. In the list he’ll see the title of the training with the name of the company. There will also be a thumbnail, difficulty level and a short training description text. When the consultant has clicked on a training, he’ll be redirected to the ‘Training detail’ page. This page will also have a button (that will only be visible for HR) where HR can add a new training.

Training detail page:

On this page the consultant has an overview of all the information of the training. Thumbnail, Title, Description, Keywords, Organisation, URL and a difficulty level. There will be a button to apply for the training and a button (that will only be visible for HR) where HR can edit the training.

HR officer modify / create new training page:

On this page there will be 6 text input fields:

1. Name of the training
2. Name of the organization
3. Difficulty level
4. Description
5. Key words
6. URL tot the organizations training page

There will be 2 large buttons one to either save the new training / update the modified training and one button to cancel.

Consultant requested training overview page:

On the consultant overview page, the consultant will see an overview of all his requested trainings. He can see the title, organisation and the URL to the training. He'll also see a status of where the request already is (Did the HR officer already approve? Did the manager already approve?). There is also a cancel button to cancel the request. You'll always be able to cancel the request even if the training is booked already.

HR requested training overview page:

On this overview page the HR officer will see all the requested trainings of every consultant. There is a button 'mark as booked' that he could press if he has booked the training for the consultant. This will only be possible after approval of the manager. Next to the button, the title of the training and the name of the consultant who has applied for the training will be shown. When he clicks on the title part, he'll be redirected to the 'Training detail' page. Next to this part there will also be a status so that the HR manager can see how far the requested training has progressed so far (Does the manager still need to approve the training? Did the manager approve the training?).

Manger requested training overview page:

This page is pretty similar to the 'HR requested training overview' page. He'll see a list of all the requested trainings, as well as the title and the consultant who requested the training. If he clicks on the title of the requested training, he'll go to the 'Training detail' page. Next to the title there will also be a status so that the manager can see how far the requested training has progressed so far (Is it approved by the HR officer?).

4. Workflows

4.1 The workflows

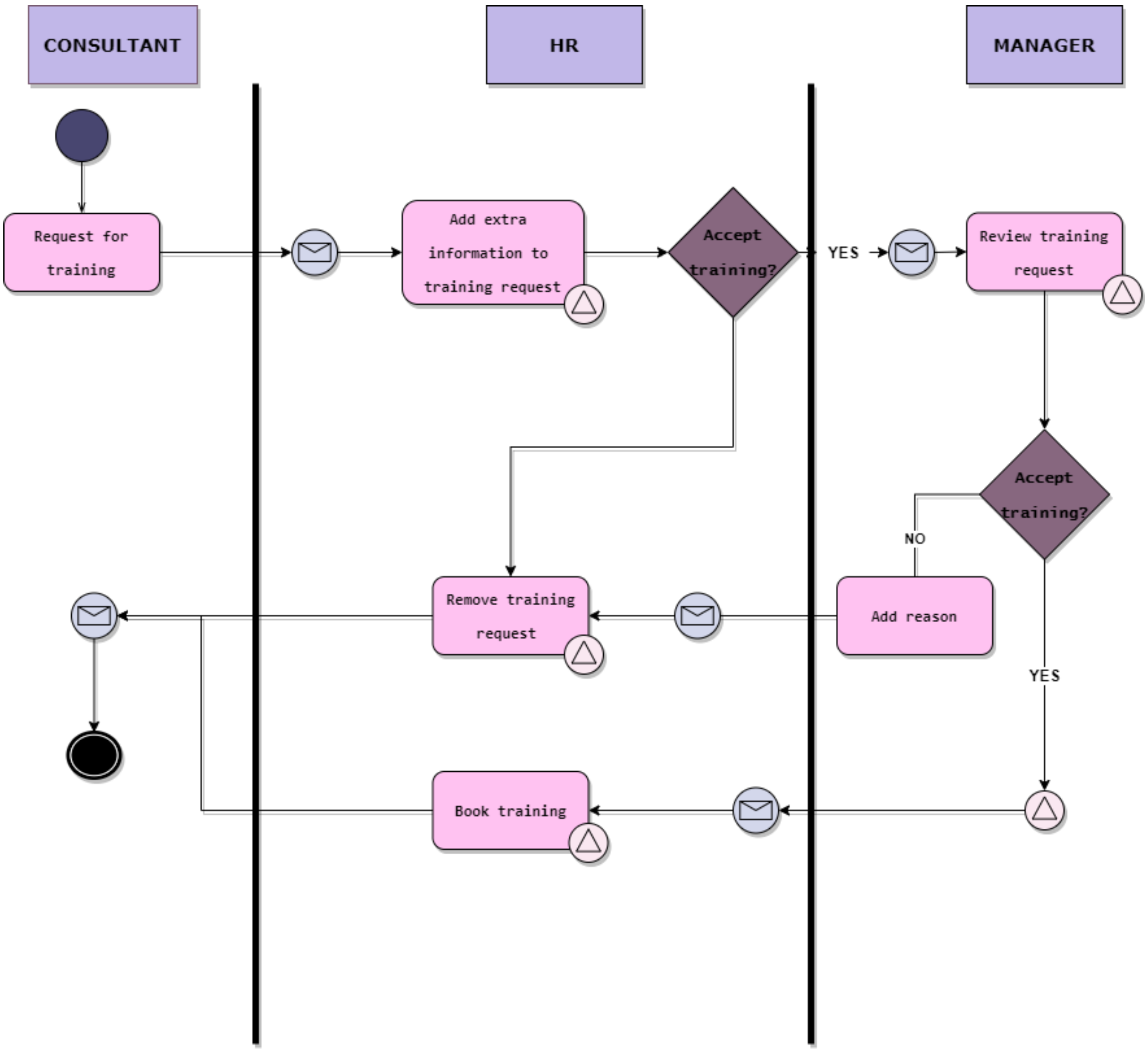
- Application process
- Cancel training

Workflow 1: Application process

This is a workflow describing the process of when a consultant requests a training.

This will be initiated by the consultant when he / she request a training. He / she can request a training on the '**Training overview**' page. The HR officer can decide to decline a training at any moment in time. For example, when the training is full.

- The **HR officer** can then "*add extra information*" on the '**HR requested training overview**' page
- The **manager** can "*review / accept / decline the request*" on the '**Manager requested training overview**' page
- The **manager** must "*add a reason"* to the rejection on the '**Manager requested training overview**' page
- The **HR officer** can "*mark a training as booked"* on the '**HR requested training overview**' page

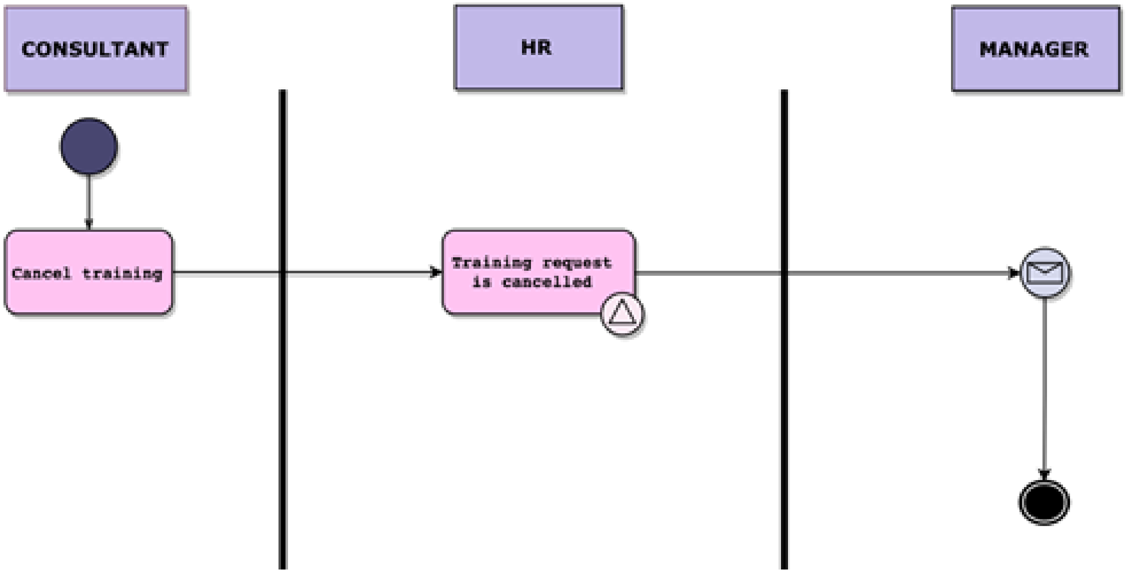


Workflow 2: Cancel a training

This is a workflow describing the process of when a consultant cancels a training i.e.

This will be initiated by the consultant.

- The **consultant** can *"cancel a training"* on the '**Consultant training overview**' page



4.2 Flows

We implemented all the button actions in Power Automate, thus all functionalities mentioned above and some other.

Functionalities for the consultant

- Subscribe / Unsubscribe (cancel) a training

Functionalities for the HR officer

- Add a training
- Edit a training
- Delete a training
- Accept / Decline a training
- Book a training

Functionalities for the manager

- Accept / Decline a training

We implemented the actions in Power Automate by thinking logically about all the steps each role goes through. As well as trying to keep it as simple as possible, by means of using the provided functionalities like “Ask in Power Apps” instead of trying to do it in another, more difficult way.

5. User manual

Following is the user manual for the Power App.

General

To go back to the previous page, click this icon: '←'.

Consultant

When you arrive on the *landing page* as a consultant, you will be able to see 2 buttons, '*Training List*' and '*My applied trainings*'.

After you click on the '*Training List*' button you will be directed to the *Training overview* page. On this page you will be able to search through the training list and filter it on difficulty.

When you click on a training you will be directed to the *Training detail* page. On this page you will be able to see all the information of that specific training. Title, Description, Organisation, Difficulty, and more. There is also a button that will allow you to request the training. After a click on this button, the process is started. Now it's up to the HR Officer and the Manager if you will be able to follow said training.

You also have the option to cancel the requested training. For this you have to go back to the *landing page* and press the other available button ('*My applied trainings*'). Here you will have an overview of all your requested trainings along with a cancel button for each training.

HR officer

When you arrive on the *landing page* as an HR officer, you will be able to see 2 buttons, '*Training List*' and '*All applied trainings - HR*'.

After you click on the '*Training List*' button you will be directed to the *Training overview* page. On this page you will be able to search through the training list and filter It on difficulty.

On the top of this page you will be able to see a '+' icon, this is the icon that adds a training. When you click this icon you will be send to the *Add new training* page. On this page you will have to fill in a form. After the form is correctly filled in you can click on the '*Add*' button to save the training or click on the '←' icon to discard the training. After this you will automatically go back to the *Training* overview page.

When you click on a training you will be directed to the *Training detail* page. On this page you will be able to see all the information of that specific training. Title, Description, Organisation, Difficulty, and more. There is also a button that will allow you to delete the training. A training can also be edited, you can do this by clicking on the '*pencil*' icon on the top of the page. When you click this button a form will appear where all fields are filled in with the current data. You can simply edit the training by editing these fields. After your changes are made, you have the option to save the changes (by clicking on the '*save*' button) or to discard the changes (by clicking on the '←' icon).

You also have the option to check the overview of all applied trainings. For this you have to go back to the *landing page* and press the other available button (‘*All applied trainings - HR*’). Here you will have an overview of all the requested trainings along with their current status. If the status is ‘Pending – HR’ you can click on the training and either Accept or Decline this training and add some extra information. If the status is ‘Approved – Manager’ there will be a button visible that says ‘*Book training*’. After you clicked ‘*Book training*’, the consultant that requested the training, along with the consultants HR officer and manager will receive a Teams message with the confirmation of the training.

Manager

When you arrive on the *landing page* as a manager, you will be able to see 2 buttons, ‘*Training List*’ and ‘*All applied trainings - Manager’*.

After you click on the ‘*Training List*’ button you will be directed to the *Training overview* page. On this page you will be able to search through the training list and filter It on difficulty.

When you click on a training you will be directed to the *Training detail* page. On this page you will be able to see all the information of that specific training. Title, Description, Organisation, Difficulty, and more.

You also have the option to check the overview of training request that needs your attention. For this you have to go back to the *landing page* and press the other available button (‘*All applied trainings – Manager’*). Here you will have an overview of all the requested trainings with a status of ‘*Pending – Manager*’. You can click on the training and either Accept or Decline this training. If you choose to decline the training, you are able to fill in a text field to pass along some ‘*motivation for rejection*’.

6. Timesheet

Following is the timesheet for each consultant. Because the complete timesheet would have been too big to include, we decided to create a total per consultant.

Consultant	Minutes	Hours
Phloy	3480	58,00
Keanu	3270	54,50
Isabelle	1655	27,58
Louis	860	14,33
Julie	645	10,75

Following is an overview of the amount of time (in minutes) that each team member performed for each role.

	Phloy	Keanu	Isabelle	Louis	Julie
Project Manager	660	675	540	300	300
Solution Consultant	420	1205	395	150	345
Developer	2220	1020	480	330	0
Analyst	180	370	240	80	0