

Project Description



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Software Technology Engineering

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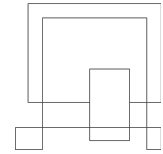
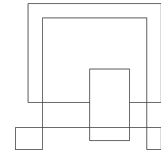


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1. Background Description

Over the years, technology has changed the world and the way we perform daily tasks. Technology has provided us with various tools putting information at our fingertips making our lives easier and better. It has provided both businesses and individuals with endless opportunities for development. (AgingInPlace, 2020)

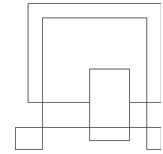
Digital transformation helps businesses develop faster, improve their efficiency and enhance customer experience. The days when employees used to visit an office with a pile of paper are long gone. Operating digitally reduces the paper waste, improves the employees satisfaction and supports business processes. (Shane Barker, 2019)

This is the case for VIAFit, a small fitness center. The owner wants to take the company into the digital age and overhaul the archive system and website. Currently, the data in the fitness center is stored in a physical way, using paper and a white board. The center keeps information regarding instructors, classes they teach and the members registered. (Appendix 1, interview with client) As the amount of data kept at the gym increases, it gets more difficult to save the already existing data and add new one. (The Local, 2018)

The fitness center is currently facing problems with keeping data saved and updated. Storing data on a piece of paper can arise a lot of issues such as loss and maintenance of data. A few years back the center experienced an accident where they lost half of their data because of a lit candle. (Appendix 1, interview with client)

Moreover, the monthly schedule for classes, used to inform both instructors and customers, is kept on a white board at the gym. There was an accident where the data on the white board was deleted. The manager could not fully recover the information which led to confused instructors and customers. (Appendix 1, interview with client)

The owner also expressed the need to upgrade the current website of VIAFit. He states that it has been outdated for a long time and now it is crucial to improve it. The new website is expected to include the monthly schedule and inform the visitors about the fitness center. Additionally, it is meant to attract more potential customers and provide a way for them to sign up online (Appendix 1, interview with client).



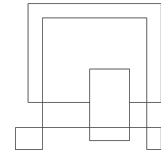
2. Problem Statement

Main problem

VIAFit's owner finds it difficult to manage the fitness center efficiently with the current data storing system.

The following sub-questions are formulated to get a better understanding of the main problem:

1. What kind of data needs to be stored in the software?
2. What are the types of classes and their description?
3. What's the current member identification system?
4. What is needed on the website to attract new customers?
5. What should be shown on schedule on the website?



3. Definition of purpose

The purpose is to help VIAFit with digitalization in order to easily manage stored data and promote the business online.

4. Delimitation

It has been concluded that the online sign up will not be taken into consideration.

5. Methodology

The first part of the process will be analysis. Later on, based on analysis the design will be formed. Implementation will take place as soon as the two previous phases are completed. At the end, the test phase will begin, followed by a conclusion. Those four phases are all dependent on each other and need to be formed chronologically.

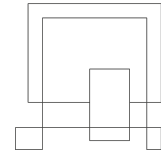
Design process

The design process will include the usage of the software Astah. The modeling tool is used for visualizing software design.(Astah, 2020)

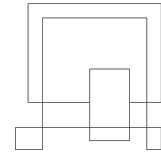
Implementation process

The development process will include the usage of two softwares, Brackets and IntelliJ.

Brackets is a source code editor for web development which will be used for creating a website. The website will be done by using HTML and CSS. The hypertext markup language will be used to define the structure and content of the site. Cascading Style Sheets will be used writing the presentation layer of the structure.(Wikipedia, 2020)



IntelliJ IDEA is an integrated development environment which will be used for the development of Java applications. Java is an object-oriented, class-based programming language.(Wikipedia, 2020)

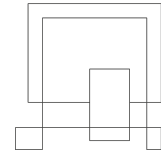


6. Time schedule

Chronologically, the first important date comes on 4th of March, where it is expected to hand in preliminary project description. By this date, the first eight chapters will be finished. The next milestone is 18th of March, where the corrections will be made and the project will be assessed by another group. Based on feedback, once again corrections will be implemented until 20th of March, where the final version of project description will be submitted on WiseFlow. Then, group nr. 4 will start working on the analysis and design part. On 15th and 29th of April the presentation of analysis will be conducted. On 13th of May, another presentation will take place, this time it will concern design. Finally, on 4th of June the whole project will be submitted on WiseFlow.

The group meetings will take place every Wednesday until 18th of May. Additionally during that time, there may be meetings during weekdays and possibly weekends in order to keep up with the material and not to miss deadlines. From 19th of May until 4th of June, meetings will take place everyday. The deadline for the project is Thursday, 4th of June at 13:00 pm.

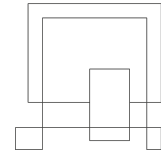
The estimated hours for team work are 550 hours which corresponds to 4 (members) x 27,5 x 5 (ECTS).



7. Risk assessment

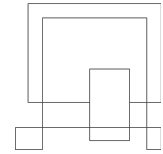
The risks have been divided into 4 main ones: missing deadlines, data loss, member dropping out and mixing work with social interactions. It has been decided that these ones are the most important and it is crucial to focus on preventing them from happening.

Risks	Likelihood	Severity	Result	Risk Mitigation and Prevention	Identifiers	Responsible
Missing individual deadlines within the team work	2	3	6	Daily update meeting and follow up on individual work	No work done	Ionut, Maria
A member drops out	1	3	3	Communication and consultation with the student counsellor	Discussions, missing the meetings	Cezary
Mixing work with social interaction	5	3	15	Setting breaks following the schedule	Ending up talking outside of the project subject	Claudiu



8. Sources of Information

- a. (AgingInPlace, 2020. Technology in our life today and how it has changed.[Online]Available at<<https://www.aginginplace.org/technology-in-our-life-today-and-how-it-has-changed/>>[Accessed 3 March 2020])
- b. (Shane Barker, 2019. Major benefits of digital transformation in your business.
[Online]Available<<https://www.martechadvisor.com/articles/digital-transformation/major-benefits-of-digital-transformation-for-your-small-business/>>[Accessed 4 March 2020])
- c. (The Local,2018.*Denmark's government wants you to exercise more*[online]. Available at<<https://www.thelocal.dk/20180307/denmarks-government-wants-you-to-exercise-more>>[Accessed 3 March 2020])
- d. (Wikipedia, 2020. Brackets[Online]. Available at <[https://en.wikipedia.org/wiki/Brackets_\(text_editor\)](https://en.wikipedia.org/wiki/Brackets_(text_editor))>[Accessed at 4 March 2020])
- e. (Wikipedia, 2020. IntelliJ_IDEA[Online]. Available at <https://en.wikipedia.org/wiki/IntelliJ_IDEA>[Accessed at 4 March 2020])
- f. (Wikipedia, 2020. Java[Online]. Available at <[https://en.wikipedia.org/wiki/Java_\(programming_language\)](https://en.wikipedia.org/wiki/Java_(programming_language))>[Accessed at 4 March 2020])
- g. (Astah, 2020. Astah[Online]. Available at <<http://astah.net/>>[Accessed at 4 March 2020])
- h. Appendix 1, Interview with a client
- i. Gaddis, T., 2015. *Starting out with Java: Early Objects*. 5th ed.
- j. Duckett, J., 2011. *HTML & CSS: design and build websites*.



Appendix 1, Interview with the client

VIAFit is a small, but relatively successful fitness centre. After many years of running every aspect of the centre, the owner has recently decided to start preparing for retirement, by leaving the daily management to his son, former spinning instructor superstar, Bob Sixpack.

As his first big task after taking charge of the fitness centre, Mr. Sixpack wants to move VIAFit into the digital age, by replacing his father's old-fashioned way of managing the centre, with a new management software system.

Rumour has it that we have access to some of the best new, up-and-coming programmers, so we have been invited to VIAFit for an interview with Mr. Sixpack to talk about the requirements for the application.

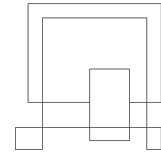
The Interview:

"Please tell us about the VIAFit centre, Mr. Sixpack."

Mr. Sixpack: "My father started the centre all by himself, 30 years ago, with nothing more than a dream, hard work, and a few millions he inherited from a rich uncle. It's a small fitness centre, but we are doing quite okay. We have a group of loyal members, who are happy with what we provide, and most people stay as members for several years."

"Sounds great. So what is it we can do for you Mr. Sixpack?"

Mr. Sixpack: "Since the beginning, my father has been running the centre in his own old-fashioned way, which isn't without problems. He keeps paper lists of the instructors working at the centre, and even does the same for the members. We have managed to do it like that until now, but I have a dream of recruiting a lot of new members, and it simply won't be possible to keep track of all of them, unless we stop



having all the information on paper. Not to mention “the candle incident of 1997” where we lost the information about half of our members. What I need from you is a software system that we can use to store all the information that we have. By the way, just call me Bob.”

“Okay, Bob. So you keep information about the instructors working at the fitness centre, and the members of the centre. Anything else?”

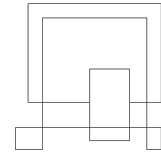
Bob: “Yes, we also keep track of the various classes our instructors teach at the centre.”

“Is that also done on paper?”

Bob: “No, we have a big whiteboard near the entrance of the centre and at the beginning of every month my dad, and now I, create a schedule for that month. We list which classes will run at which days, and at which time, so the members will know when to show up. Furthermore, we add the name of the instructor who will teach each class, so that the instructors can take a look to know when to show up for work.”

“Are you happy with that way of doing things?”

Bob: “No. The members actually seem to like the big whiteboard with all the classes listed, but I don’t want it to be the only place the information exists. Last week some kids from the neighbourhood ran into the centre, and before I noticed what was going on, they had erased half the schedule and started drawing on the whiteboard! I managed to recreate most of it from memory, but I’m not completely sure some of the members will not show up for some classes at the wrong time, or that a few instructors might not end up showing up to teach the same class. I would like to be able to use the system you are making to register the date and time that a class will run, and the instructor teaching it. Then when I know it’s safely stored in the computer, I can add the same information to the schedule on the whiteboard for the members to see.”



“Is it always the same kind of classes you are scheduling?”

Bob: “No. New trends occur, which the members start asking for, and then we have to start doing that. Once it was all about spinning, but then one day almost no one came to my classes anymore, and instead all you heard from the members was Zumba this, and Zumba that. Then there’s nothing else you can do than start learning how to dance and do some Zumba classes instead. For situations like that, I would definitely like to be able to add new classes to the system, when needed.”

“About the classes, is that something all members can just show up for?”

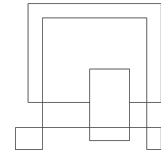
Bob: “Actually we have two different kinds of memberships; I should probably have mentioned that. We have a regular membership for €19 per month, which allows the member to use all the equipment at the centre, and a premium membership for €29, which also allows the member to sign up for the classes. Sometimes a regular member will ask whether they can also sign up for a class, and we are actually thinking about maybe allowing them to do that in the future, by paying a fee for each class they sign up for. For now, the only way is for them to upgrade to the premium membership instead, and we are okay with that solution at the moment.”

“Oh, so they have to sign up for the classes. How do they do that?”

Bob: “They talk to the receptionist at the front desk, and if the class is not already full, then they are added to the list of participants, which you have probably already guessed is stored on a piece of paper.”

“I see. How many participants will be able to attend a class?”

Bob: “It varies quite a lot from class to class. With the spinning classes we are limited by how many bikes we have, only 10 at the moment, but for things like Zumba we have room for a lot more people. I suppose the maximum number of participants is something that would also be nice to be able to state when I add a new class to the system.”



“We can do that. Would you like it to be possible for members to sign up for classes by themselves online?”

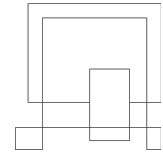
Bob: “No. What I would like from you is a system that runs on a single computer at the front desk. Then one of the receptionists, or I, can enter information into the system using that. From now on there will be at least one person at the front desk at all times, to prevent those damn drawing kids from coming back, so whoever is there at the time will handle the signup. Oh, that reminds me; since the computer is now also guarded all the time, then we don’t want passwords and logins and things like that for the system - it will just slow down our work.”

“So your members have to physically show up at the centre to sign up for classes?”

Bob: “Well, we do have a phone you know. Sometimes members just call to sign up. We prefer being in direct contact with the members when they sign up, so that we can offer advice about which classes will be best for them, answer any questions they might have about the class, and so on. This is one of the things we feel set us apart from other fitness centres, and something we are afraid to lose if we did let members sign up for things online.”

“That makes sense. How about when someone wants to register at your centre and become a member? Is that also in person, or by phone?”

Bob: “Yes, absolutely. Only in person though, not by phone. After enough prank calls, with people signing others up for memberships, you realize that’s the best way to do things. If someone wants to become a member, they need to talk to one of the receptionists in person, who will then register them on paper, but hopefully soon in your system instead.”



“What kind of information do you register about your members?”

Bob: “Well, basic contact information: Name, address, and phone number. It could be nice to be able to register their email address as well, because we have actually started doing that with some of the newest members. Other than that, we of course register whether or not they have signed up for the basic membership or the premium membership.”

“Got it. While I remember, I also wanted to ask about what kind of information you register about your instructors?”

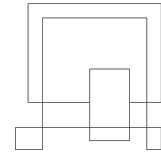
Bob: “The same kind of contact information as for the members, plus some information about which kind of classes they can do. Payments are handled through a different system that even my father had to accept starting to use a few years ago, so you don’t have to worry about that part in your system.”

“Great. Do you have any wishes for how the program should look?”

Bob: “I don’t know much about what things like these are called, but I am expecting some sort of standard looking program that we can use with a keyboard and mouse. You know the kind: Some fields to enter the data and some buttons and menus to do things: Saving and searching and what have you.”

“That should be possible. Do you have any deadline for when you want the system to be ready?”

Bob: “Yes, I would like it to be ready in the beginning of June. That will give us a little more than half a year to get familiar with the system, before we are flooded by new members on January 2nd. I don’t know who came up with the idea of New Year’s resolutions, but it sure is the best thing that has ever happened to the fitness business.”



“...Okay, then I think we have everything we need, and we will get started on the system right away.”

Bob: “Well, actually I have one last question. One of our new part-time instructors is a student. She’s studying some kind of computer stuff, and she’s always talking about something she’s working with. I think she calls it Jawas. Do you know about that?”

“Well...uh...Jawas are some kind of weird little aliens from Star Wars, so do you think maybe she’s saying Java?”

Bob: “Yes, I think that’s it! She told me that it’s awesome, so maybe you could try to use some of that when you make the system?”

“Yes, we will make sure to do that. We will even implement the entire system in Java. Anything else before we finish the interview?”

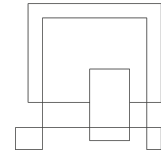
Bob: “Yes, one last question. I realise I already said that once before, but I just thought of something else. Do you also know how to make websites?”

“Maybe...why do you ask?”

Bob: “Our fitness centre has a really, really old and outdated website, so if you have the time, could you also make us a new one of those?”

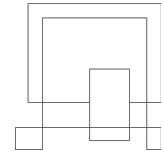
“Actually, we don’t really have a lot of time...”

Bob: “I don’t expect anything really fancy. Not a lot of functionality. The website should just be able to show the monthly schedule of classes that I make in the Jawas system – I imagine being able to export the schedule from the system, and then have it show up on the website. Besides that, it should just have some info about our fitness centre to attract new customers, like info about who we are, the various activities we



offer, where to find us, and so on. I'm sure you know the kind of website I'm talking about."

"Okay, no problem. We will make you a website as well. We are going to start on the project right away."



Appendix 2, Group contract



Group Contract Template - VIA Engineering Guidelines

Group Contract

Group Name (optional): _____ 4 Date: 26/02/2020

These are the terms of group conduct and cooperation that we agree on as a team.

Participation: We agree to....

We agree to attend every lecture *specifically* related to SEP1 (except special situations)

Communication: We agree to...

We agree to don't be afraid to ask for help, feedback etc.

We agree to communicate as much as possible and tell our opinions.

Meetings: We agree to....

We agree to organise meetings that will fit each one schedule

Conduct: We agree to....

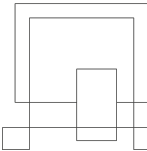
We make sure everyone is on the same page and understands the task.

We agree to be respectful and consider everyone equal.

We agree to maintain a normal and mature communication without yelling or getting mad.

Conflict: We agree to....

We agree to discuss any misunderstanding and solve any conflict peacefully .



Group Contract Template - VIA Engineering Guidelines

Deadlines: We agree to....

We agree to create a buffer zone before the deadline to be sure that we have some extra time for finishing the project if something goes wrong

Other Issues:

Group member's name	Student number	Signature
Maria Asenova	239533	
Claudiu Homet	297113	
Ionut Grosu	297111	
Cezary Korenczuk	299118	

