İZMİR EKONOMİ ÜNİVERSİTESİ


# E-VET

# SE 216 SOFTWARE PROJECT MANAGEMENT

## Software Development Plan

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## Outline

## 1.OVERVIEW

People may not be able to adequately follow their pets development .Animals need love and time. Our aim is to decrease the responsibilities of the animal owners and closely monitor the health of the pets and spend more times with the pets. Anyone who installs the application can access E-VET (does not belong to a business).Also, both pet owners and vets can update profiles of the animals. Thanks to E-VET, animal owners will be able to closely monitor the development and health of their animals.

### Objective

Objective of this Project is to prepare an app for animal's care. We expect to provide a high life quality for pets by good taking care of them .Also for pet owners ,we expect for them to have much better relations with their pets by using the app.

- ✓ To customize profiles for each animals.(For example animals' breed,weight,age,gender)
- ✓ To help vets to monitor if pet's has any diseases.
- ✓ To provide pet owners to follow the vaccinations of their pets.
- ✓ To digitize the pets veterinary records.

## 2. HIGH-LEVEL FUNCTIONALITY

Our project aims to enable animal owners to closely monitor the health of their animals.

E-VET makes it easy for pet owners to make veterinary appointments for their pets. It also helps pet owners remember the time by notifying them when the appointment time is approaching. We aim to make the development of pets such as weight and height closely monitorable with monthly animal development reports.The project keeps records of treatment methods and drugs used. Therefore, both veterinarians and animal owners can easily observe the health history of their animals.

We plan to develop our project in a way that will not force the user technically. E-VET will be available both as a website and an application. The application and website will be open to users 24/7. The website and application will be able to serve a sufficient number of users. The system restart itself after a failure in 10 seconds. Each request must occur in less than 10 seconds.

## 3.STAKEHOLDERS

- Pet Owners
- Veterinarians
- IT Staff
- Customer Service

3.1 Pet Owners

Animal owners are the main stakeholders and customers of our Project.Thanks to our Project, animal owners can follow the care of their animals and make a veterinary appointment online.Thus, the level of the anxiety of the pet owner's will be reduced.Plus, they can save their time.

3.2 Veterinarians

Veterinarians might observe their patients' previous diseases and treatments thanks to E-VET.Through Veterinarians will gain benefits such as money and reputation as pet owners can easily make appointments.

3.3 IT Staff

IT Staff has a big positive impact on developing the project.They diagnose hardware and software issues.Because of E-VET they can gain new skills about computer systems.

3.4 Customer Service

Strengthen the relationships and communication between E-VET and pet owners. They will gain better relations with the users and it will make users more comfortable to use the app.

## 4.PROJECT STAFFING

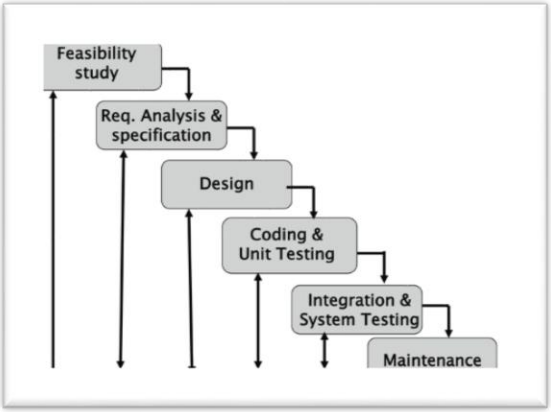
In this Project, there will be six roles;

- **Leader :** Organizes meetings about the Project, provides communication between the project team, does the time management and determines the "deadline" and checks the performance. She/he makes budget management. In short, he/she follows the development of the project in all aspects

- **Coder :** The building block of the project is the coder, so we needed a coder in our Project. The coder is the person who ensures that the product is revealed until the last moment and fixes the errors.
- **Lead Designer :** We need a lead designer to develop, design and document the website and application throughout the project. Lead Designers are responsible for maintaining the quality and the creativity of design projects. The lead Designers must have new ideas that assist product development.
- **Planning Manager :** We need the planning manager in our project because planning manager is the role which provides the business order and controls the processes.Also planning managers are responsible of evaluating and controling the business and customer requests and also has important impacts on production in a business or project.
- **Quality Assurance Engineer :** A quality assurance engineer is responsible for enhancing software development processes and preventing production faults. To put it another way, they ensure that the software development team is doing things correctly.
- **Marketing Manager :** It is the role that will enable our project to be better promoted and advertised. A marketing manager is responsible for managing the promotion and positioning of a brand or the products and services that a company sells.

## 5. SOFTWARE PROCESS MODEL

The iterative waterfall model provides feedback paths from every phase to its preceding phases When errors are detected at some later phase, these feedback paths allow correcting errors committed by programmers during some phase.



The iterative waterfall model can be used because it is easy to make changes or modifications at any stage, any changes to the software can be made during the development process, also the stages can be processed and finalized one by one, plus the process and results can be documented well and earlier, furthermore, risks can be easily resolved and avoided during iteration, and most importantly, it is easy to manage.

## 6. SCHEDULE AND EFFORT

Planning is one of the most important steps in project management in order to better predict the upcoming process. While planning our project, we tried to give the steps as logical and sufficient time as possible.

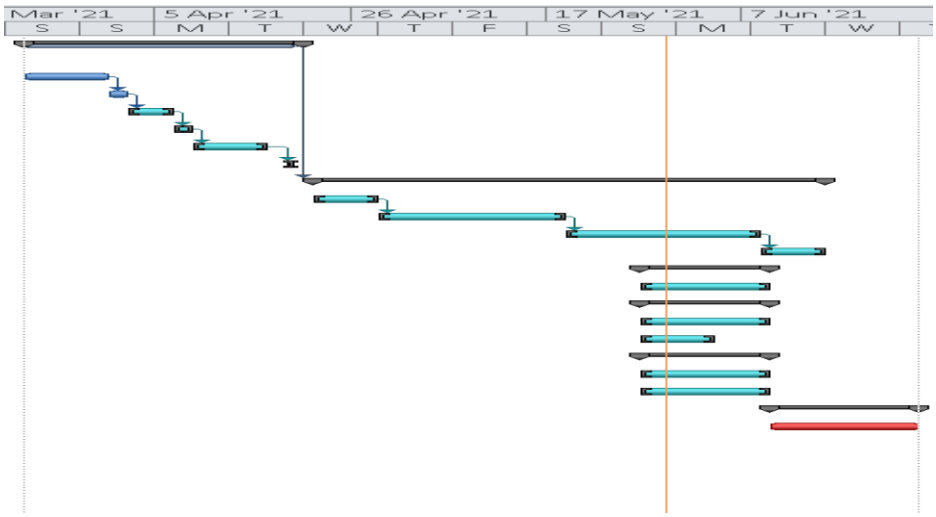
| | Task Name | Duration | Start | Finish | Predecessors |
|---|---|---|---|---|---|
| 1 | **Project Conception and Initiation** | **22 days** | **Mon 22.03.21** | **Tue 20.04.21** | |
| 2 | Research | 7 days | Mon 22.03.21 | Tue 30.03.21 | |
| 3 | Prepare Questions | 2 days | Wed 31.03.21 | Thu 1.04.21 | 2 |
| 4 | Information Sharing Meetings | 3 days | Fri 2.04.21 | Tue 6.04.21 | 3 |
| 5 | Meeting with Stakeholders | 2 days | Wed 7.04.21 | Thu 8.04.21 | 4 |
| 6 | Analyze Informations | 6 days | Fri 9.04.21 | Fri 16.04.21 | 5 |
| 7 | Project Initiation | 1 day | Mon 19.04.21 | Mon 19.04.21 | 6 |
| 8 | **Project Definiton and Planning** | **39 days** | **Thu 22.04.21** | **Tue 15.06.21** | **1** |
| 9 | Budget | 5 days | Thu 22.04.21 | Wed 28.04.21 | |
| 10 | UML Design Creation | 14 days | Thu 29.04.21 | Tue 18.05.21 | 9 |
| 11 | Graphical Design | 15 days | Wed 19.05.21 | Tue 8.06.21 | 10 |
| 12 | Risk Management | 5 days | Wed 9.06.21 | Tue 15.06.21 | 11 |
| 13 | **Coding** | **10 days** | **Thu 27.05.21** | **Wed 9.06.21** | |
| 14 | Structured Programming | 10 days | Thu 27.05.21 | Wed 9.06.21 | |
| 15 | **Web Programming** | **10 days** | **Thu 27.05.21** | **Wed 9.06.21** | |
| 16 | PHP | 10 days | Thu 27.05.21 | Wed 9.06.21 | |
| 17 | SQL | 6 days | Thu 27.05.21 | Thu 3.06.21 | |
| 18 | **Mobile Programming** | **10 days** | **Thu 27.05.21** | **Wed 9.06.21** | |
| 19 | Flutter | 10 days | Thu 27.05.21 | Wed 9.06.21 | |
| 20 | React Native | 10 days | Thu 27.05.21 | Wed 9.06.21 | |
| 21 | **Testing** | **12 days** | **Thu 10.06.21** | **Fri 25.06.21** | |
| 22 | User Testing | 12 days | Thu 10.06.21 | Fri 25.06.21 | |

First step lasting 22 days, we include research, questioning and meetings where we shared the findings. Afterwards, the processes of meeting with the stakeholders, analyzing the obtained data and initiating the project were followed.

In the project definition and planning step, which lasts 39 days, the budget was determined, the necessary designs were made, and risk management was carried out in order to prevent possible risks.

We devoted our third step to the coding part, which is the realization of the project. Since we wanted E-VET to emerge as both an application and a website, we wanted coding to be divided into web programming and mobile programming.

Since we aimed to provide the best experience for the user after the coding part of the project, we decided that the testing part would be the fourth step.




## 9.MEASUREMENTS

In order to measure the quality of our project, the following questions were asked;

- How much effort did this project require?
- How reliable and valid are the measures?
- Will user be satisfied with the project?
- How efficient is the product?
- How stable is the software and the degree of risk of failure?

The measurement types given below, were determined as the criteria to measure the project for the questions asked.

- **Planning/Organizing:** Managing the organization and work done by weekly meetings.
- **Reliability:** Consistency of the methods under the same circumstances.
- **Product Quality:** The feedbacks provided by the users.

- **Efficiency:** Capable of producing desired requirements
- **Testing:** Controlling the number of failures by testers.

## 10.PROJECT RISKS

While determining the project risks, we first considered the risks that we could meet, and then we listed these risks separately as the 'likelihood rank' and 'impact rank'. We brought these rankings together and created a 'combined rank'.

| LIKELIHOOD RANK | IMPACT RANK | COMBINED RANK | RISK DESCRIPTION |
|---|---|---|---|
| **2** | **1** | **3** | **Performance Risk-**The intended result may not occur at all or in the manner that the project management had anticipated. |
| **1** | **3** | **4** | **Going over the budget-** There may be more expenses than planned in the realization of the project or the project may have new needs. |
| **5** | **2** | **7** | **Insufficient software-**It may be a poor software that does not meet the requirements of the project |
| **3** | **4** | **7** | **Lack of process time-**The project can be expected to be completed in less time than required. |
| **4** | **6** | **10** | **Frequently changing requests-**Stakeholders can change or improve their requests for the project at the very last time |
| **6** | **5** | **11** | **Training-**The team is not competent enough in their work as a result of keeping the training time shorter than it should be. |
| **7** | **7** | **14** | **Testing-** The product will be difficult to test. |

## 11. SOFTWARE TOOLS

### SOFTWARE TOOLS FOR TASK 1: Mobile Development

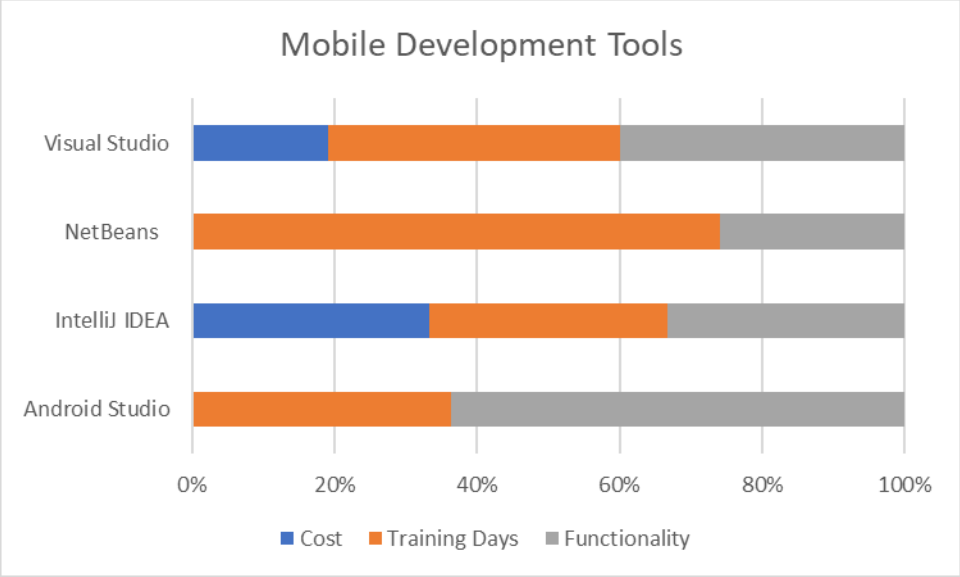
#### Tool Cost/Training/Functionality Data

| Tool | Android Studio | IntelliJ IDEA | NetBeans | Visual Studio |
|---|---|---|---|---|
| Cost | 0 | $49.90 | 0 | $14.95 |
| Training Days | 7 | 14 | 10 | 9 |
| Functionality | 75 | 80 | 20 | 50 |

#### Normalized Cost/Training/Functionality Data

| Tool | Android Studio | IntelliJ IDEA | NetBeans | Visual Studio |
|---|---|---|---|---|
| Cost | 0.0 | 100.0 | 0.0 | 29.9 |
| Training Days | 50.0 | 100.0 | 71.4 | 64.3 |
| Functionality | 87.5 | 100.0 | 25.0 | 62.5 |

#### Normalized Tool Graph




We selected IntelliJ IDEA ,because it provides the best comfort to developers who are using java programming language.Also it analyses the codes, and look for the connections Between symbol across all project files and languages.

## SOFTWARE TOOLS FOR TASK 2:Website Development

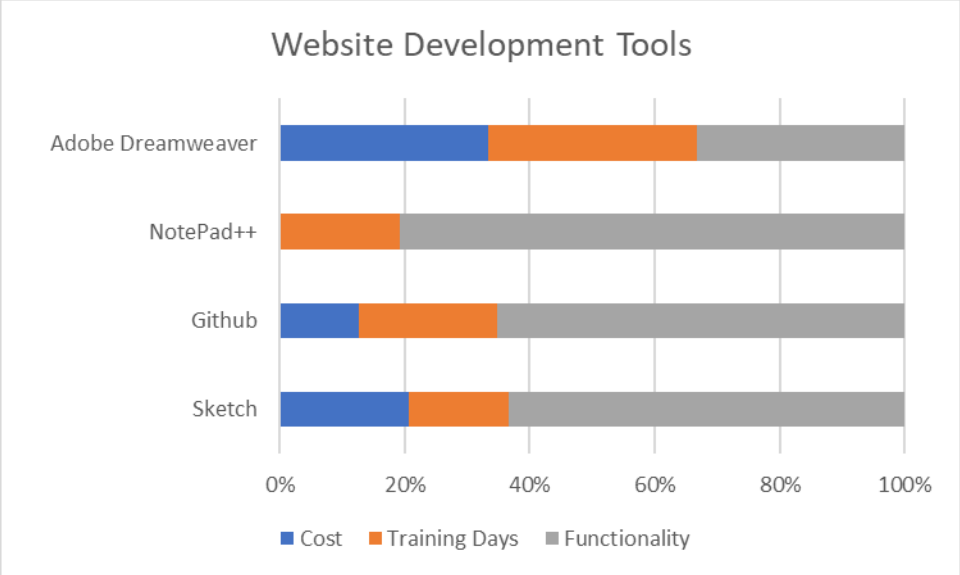
### Tool Cost/Training/Functionality Data

| Tool | Sketch | Github | NotePad++ | Adobe Dreamweaver |
|---|---|---|---|---|
| Cost | $9 | $4 | 0 | $31.49 |
| Training Days | 2 | 2 | 8 | 9 |
| Functionality | 70 | 50 | 30 | 80 |

### Normalized Cost/Training/Functionality Data

| Tool | Sketch | Github | NotePad++ | Adobe Dreamweaver |
|---|---|---|---|---|
| Cost | 28.6 | 12.7 | 0.0 | 100.0 |
| Training Days | 22.2 | 22.2 | 8.9 | 100.0 |
| Functionality | 87.5 | 65.5 | 37.5 | 100.0 |

### Normalized Tool Graph




We selected Adobe Dreamweaver because it provides an ease and efficieny of use.Also it manages and updates websites effectively, lastly it can be easily customized.

## SOFTWARE TOOLS FOR TASK 3:Functional Testing

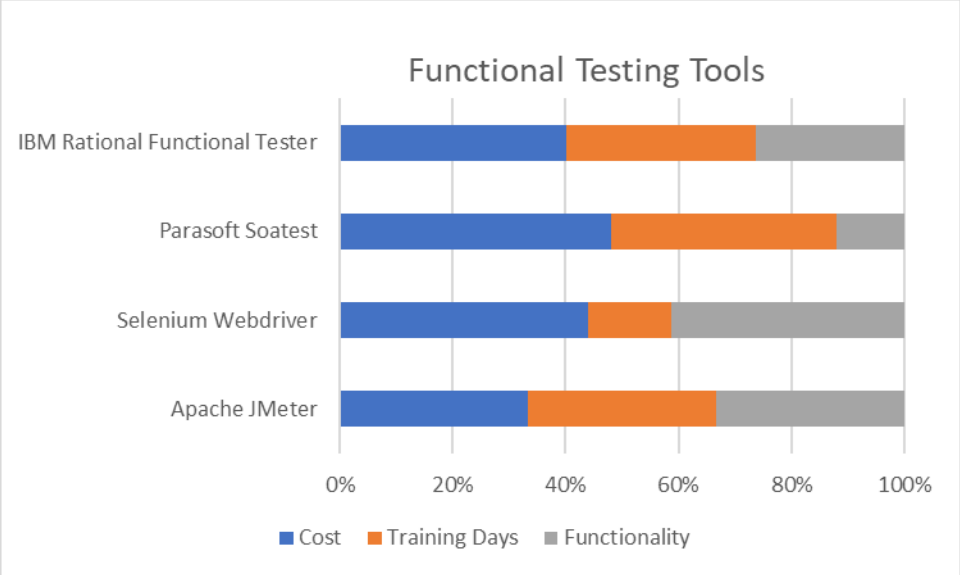
### Tool Cost/Training/Functionality Data

| Tool | Apache JMeter | Selenium Webdriver | Parasoft Soatest | IBM Rational Functional Tester |
|---|---|---|---|---|
| Cost | 0 | 0 | 0 | 0 |
| Training Days | 6 | 2 | 5 | 5 |
| Functionality | 80 | 75 | 20 | 50 |

### Normalized Cost/Training/Functionality Data

| Tool | Apache JMeter | Selenium Webdriver | Parasoft Soatest | IBM Rational Functional Tester |
|---|---|---|---|---|
| Cost | 100.0 | 100.0 | 100.0 | 100.0 |
| Training Days | 100.0 | 33.3 | 83.3 | 83.3 |
| Functionality | 100.0 | 93.8 | 25 | 65.5 |

### Normalized Tool Graph




We selected Apache JMeter because it is easy to use without extensive programing kowledge and it allows test recording from browsers and applications.Lastly it provides integration with reporting.

## 12. PROJECT NEEDS

### 12.1 Software Needs

We observed that there should be five software needs for E-VET.

- Operating System For Desktop (**Windows**) : We need the operating system for the Project to work properly.An operating system is a software program that connects a computer user to its hardware. An operating system is a piece of software that handles all of the essential functions.
- Compiler (**Java**): We need compiler to convert to the programming language and it will be used by the programmers.A compiler is a computer program that converts computer code written in one programming language into another programming language .
- Operating System For Mobile App (**IOS ,Android**) : We need the operating system for the Project to work properly. An operating system that helps to run other application software on mobile devices. It is the same kind of software as the famous computer operating systems like Linux and Windows, but now they are light and simple to some extent.
- Web Application (**Chrome,Firefox**) : We need web applications to provide user's easy access. In contrast to computer-based software applications that run locally on the operating system of the device, a web application is application software that operates on a web server.
- Database Software (**MySQL**) : We need database to store the information. Database software is used to construct databases as well as to store, administer, alter, search, and retrieve data from them.

### 12.2 Hardware Needs

We observed that there should be four hardware needs for E-VET.

- Processor : We need processor to process basic instructions that drive a computer. A processor is a digital circuit which performs operations on some external data source
- Storage Equipment (**HHD,SSD**) : We need storage equipments to store the information. Storage equipment includes any equipment that is used to hold or buffer goods for a length of time and may involve transportation. It is often utilized to save valuable work floor space.

- Memory (**RAM**) : We use it for temporary storage and protection of data. RAM refers to the CPU's internal memory for storing data, programs, and program results. It's a read/write memory that saves information until the computer starts up.
- Graphics Processing Unit (**GPU**) : We need Graphics Processing Unit where any graphical processing is needed. A GPU is a processor designed to handle graphics operations.

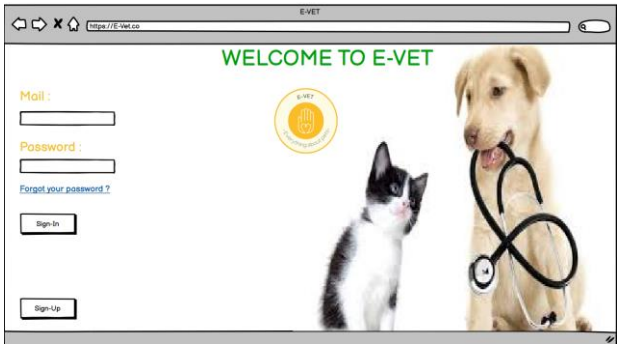
### 12.3 Support Needs

We observed that there should be six support needs for E-VET.

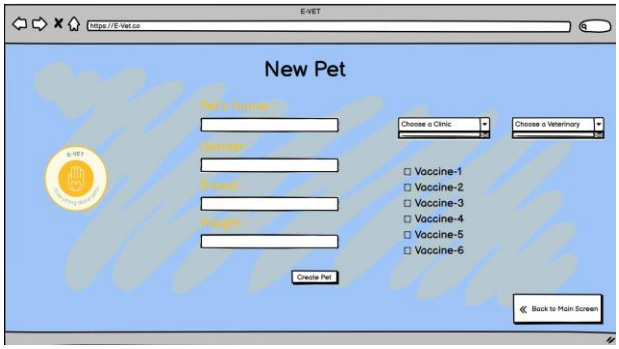
- System Administration : System administration is the profession of managing one or more systems  software, hardware, servers or workstations
- Customer Service : Customer service is the support you offer your customers — both before and after they buy and use your products or services.
- Users : We need to users to give feedback about the project in the later stages of the project, causing the project to be corrected and developed.
- Shareholders : They can support the project financially and in the promotion phase.
- IT Staff : IT staff maintains computer networks for all sorts of businesses, providing technical support and maintaining the seamless operation of the entire operation.
- Sponsors : They can support the project financially and in the promotion phase.

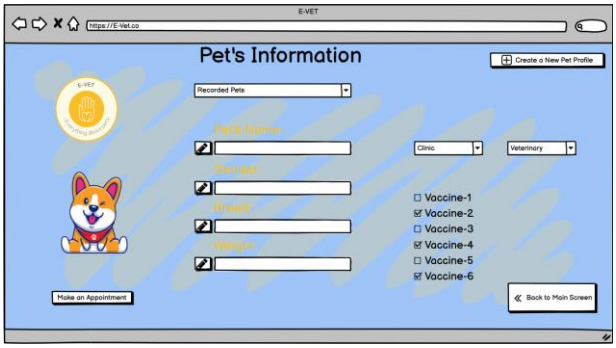
## 13. GRAPHICAL USER INTERFACES

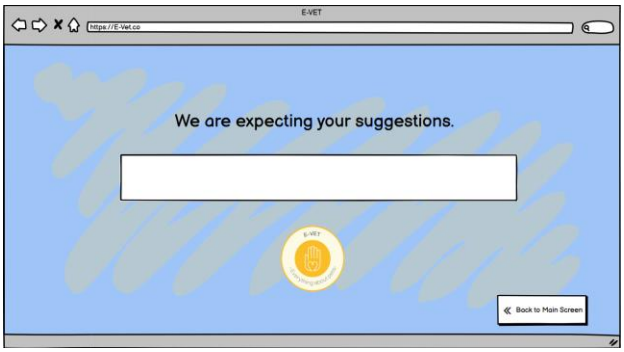
### 13.1 Website





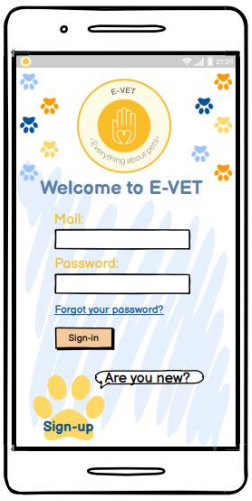


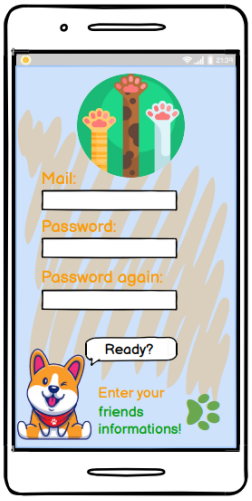



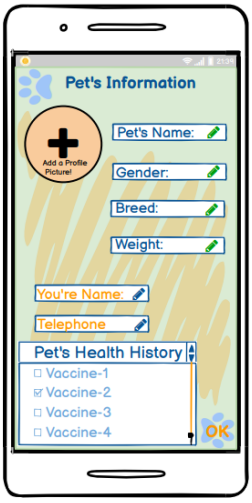



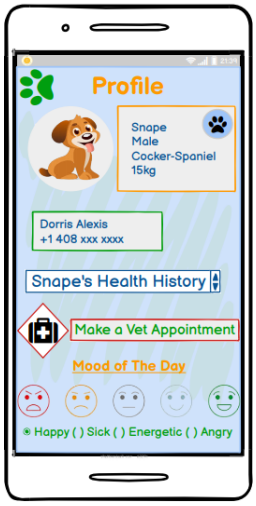


## 13.2 Application





## 14.CONCLUSION

Our aim when we developing the project is to provide convenience to animal owners and veterinarians.In order to reach a wider population, we thought of designing E-VET for both mobile application and a website. As a result of our deep research, we have reached the findings that we mentioned above.

As creators of the E-VET we tried to cooparate while developing the project.Someone worked on implementation, someone worked on the designing and some of us mostly worked on the documentations.Thus we improved and evaluate the works much better.

In conclusion,as the creators of the E-VET we wanted to make every process of our project clear and understandable for the users or people who want to apply such a project.