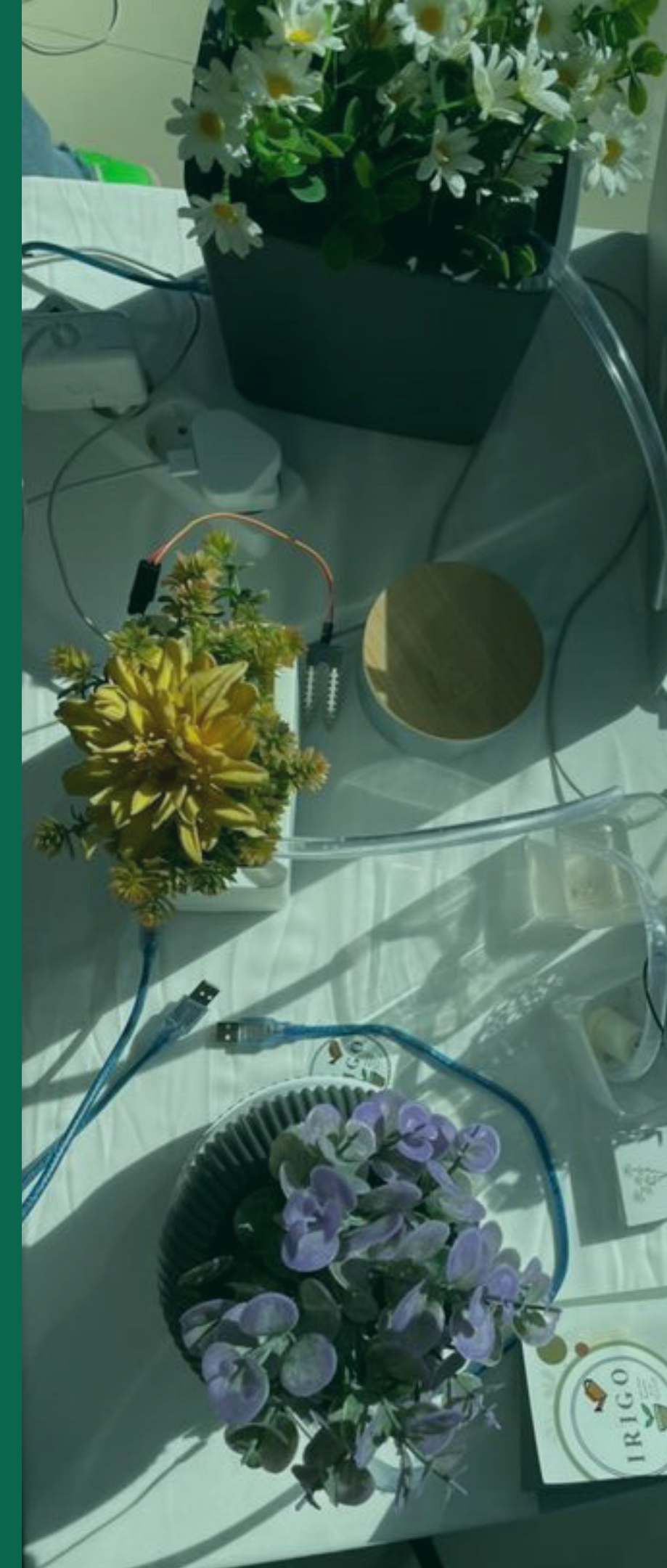# IRIGO

2022
TBILISI, GEORGIA
TEACHER: TAMAR RTVELADZE

Executive Summary

IRIGO is a student company that produces and sells automatic watering systems for house plants. The product is a needed innovation for anyone who owns a plant; by using our product, plant-owners do not have to worry about their plants drying out because IRIGO is there to water them. The product uses a moisture sensor and a unique algorithm that understands the right time to water the plant according to the soil's moisture level.

While our company has been around for some two months, we have gotten much appreciation from people around us and beyond. IRIGO's innovative product has won the Best Product Prize at the Entrepreneurship Festival of Tbilisi, has been a subject of local news, and has even gotten applause and interest from businessmen in Europe.

IRIGO continues to serve the customers and provide them with needed watering systems.

For the future, we would like to broaden the borders of our company and go into agro-tech on a full scale, meaning that we want to produce technology that not only meets a house plant-owners needs but also is effective and needed in greenhouses, vineyards, and many more.

We are determined to maintain environmental consciousness as we go on with production. We plan to expand our watering systems so that a single machine works for multiple plants. That way, the product will be more convenient and usable by people who own many plants.

IRIGO wants to make sure every customer's requests are properly addressed and the products are fitted to their needs. We decided to offer costume-made watering systems that work for specific plants requiring specific amounts of water.

Company Overview

IRIGO consists of five young, motivated, and bright students who got together to create high-quality products and establish a successful student company.

The idea came from one small and lonely plant which, because of its size, always slipped out from one of our company member's attention and never got watered. The plant started to deteriorate and die and during this time an idea sparked- what if there existed a product that would water the plants by itself?

After many online and on-market searches, we could not find the kind of product that would do the job, so we decided to engineer and design one. Since many plant owners face the same problem, this innovative idea no longer stayed as a private invention but led to the establishment of a new student company IRIGO.

IRIGO supplies plant owners with a compact and useful tool that automatically waters plants, considering its need for H2O- the most precious substance for survival.

Team IRIGO– Who are we?

Our team consists of five motivated, academically strong, and passionate students who desire a change in their community and in the world. While we all have different jobs at our company, us working as one is what makes all of it possible.

Company's Contact Information

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Tel: +995 593 484 234

@infoirigo

Lizi Ebralidze
CEO, Product Engineer

Barbare Tetvadze
Production Manager

Mariam Kalandadze
Financial Director

Sophio Khonelia
Marketing Manager

Barbare Melikidze
HR, Customer Service

irigo.co
@infoirigo · Shopping Service

Edit Follow

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Our Product– the innovative approach to the problem

IRIGO offers customers an automatic watering system for house plants. The product is easy to use and it makes plant owners' chores easier.

The purpose of our product is to enable plant-owners to keep their beloved plants alive, without them being involved in the watering process. If a person is away from home or just busy taking some time to take care of the plants, IRIGO will come in handy and help customers. IRIGO does not only promote an innovative and completely useful product but also advocates for plant keeping, thus ensuring a green future.

Mission

01	02
Produce microtechnology and sensor based automatic watering system for house plants	Make our product available for customers and help them understand the technology and the ways to operate it.

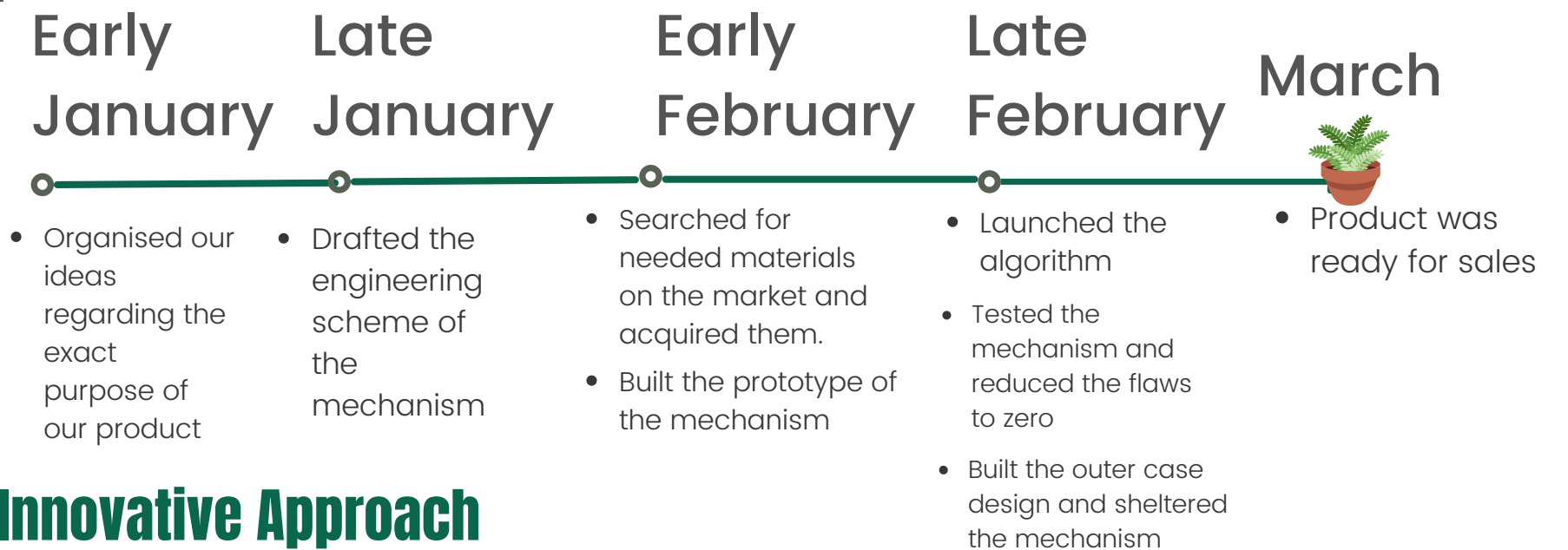| 03	04
Establish a new, technological advancement in the field of agronomy and go beyond the concept of house plants: plant this technique in vineyards, larger plant farms and many more	During this busy and tiresome lifestyle our world is heading to, promote a green and happy future

Pricing Strategy

We bought materials as cheaply as we could without affecting the quality of the product so that a majority of customers could afford the product. We are still working on minimizing the production cost per product.

The Current Stage Of Development

We have completely developed the product which can water one plant (one product per plant) and we are working on the development of the mechanism which will take care of a couple of plants at a time.

Early January
- Organised our ideas regarding the exact purpose of our product

Late January
- Drafted the engineering scheme of the mechanism

Early February
- Searched for needed materials on the market and acquired them.
- Built the prototype of the mechanism

Late February
- Launched the algorithm
- Tested the mechanism and reduced the flaws to zero
- Built the outer case design and sheltered the mechanism

March
- Product was ready for sales

Innovative Approach

We are in the process of patenting our product. At one of the JA Entrepreneurship club fairs in a local mall, many competent individuals in the STEM and irrigation fields strongly encouraged us to patent our product, since it is an innovative idea. Thus we filled out the forms of Sakpatenti, and because getting an answer takes a long time, we're still waiting for it. We have deeply analyzed the local market and found out that analogous product is not sold anywhere and the same was seen in the major online international shopping sites and services. These results make us able to say that our product is innovative and can be patented.

How Does Our Product Work?

Our product consists of two main parts: a mechanism which is the hardware of the system, and the water-holding container. These two parts are connected to each other but hermetically so the water does not touch the controller and other non-waterproof parts.

Instructions For Irigo

Our watering system is very simple to use! It will water your plants by itself whenever needed by tracking the amount of water in the soil.

- Fill the container with water
- Place the U-shaped sensor in the soil of your plant's pot
- Place the water tube inside the soil. The system will use this tube to water your plant
- Plug the system into an electrical outlet. The system comes with a USB cable.
- Replace the water container with a larger one if needed
- Use one 9V battery to power the mechanism

Warnings

- Don't let the water come into contact with any part of the system except the container
- Keep the system away from children or pets
- Keep it away from environments with extreme temperatures (i.e. too hot or too cold), as they can damage the sensor
- Clean the sensor with a dry tissue occasionally

01 A Mechanism

Soil moisture sensor

Water pump (5V)
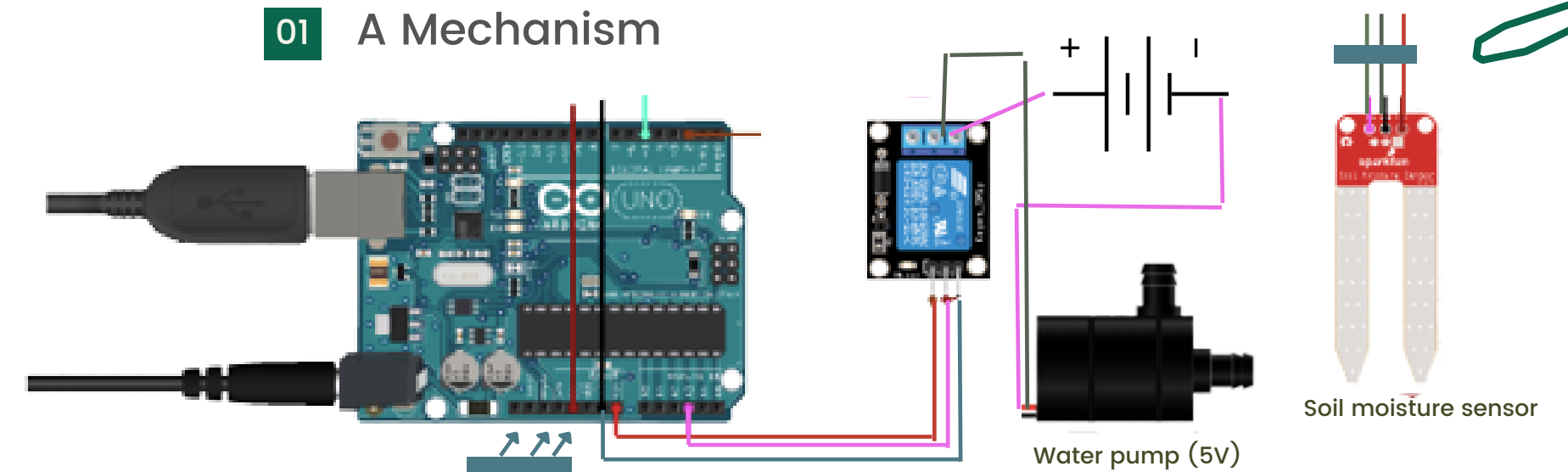
02 Algorithm

Special Computer algorithm which is downloaded in the microcontroller and governs the whole system. It was written in C++ coding language
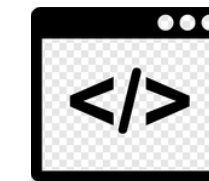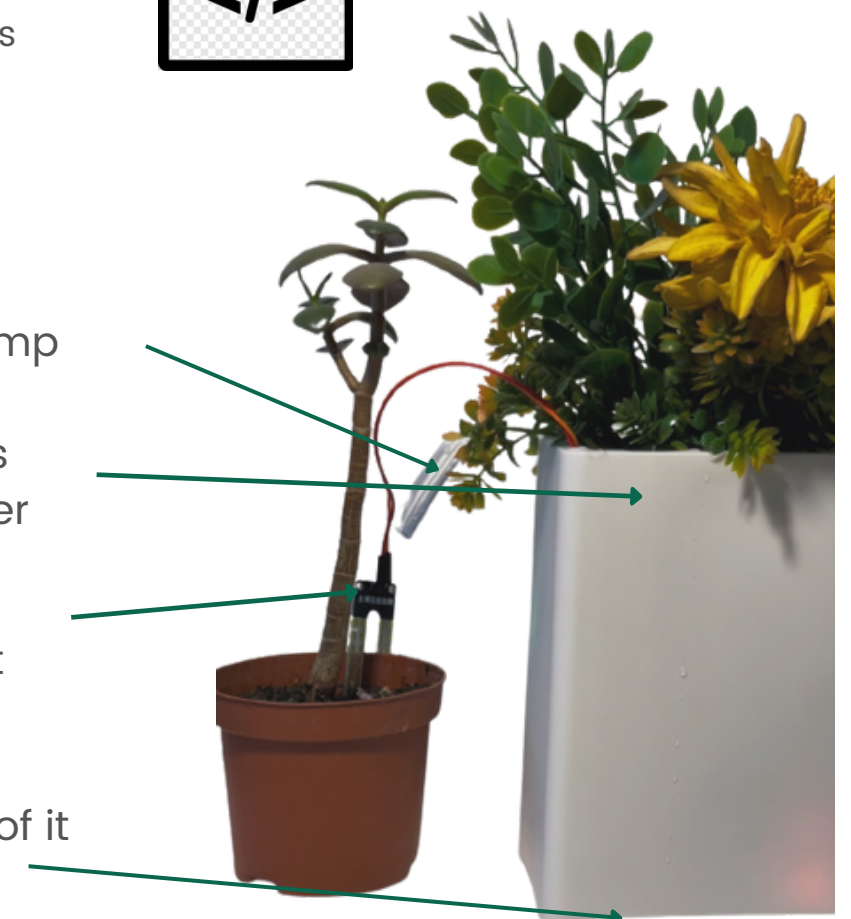
03 Final Product - Container where everything resides
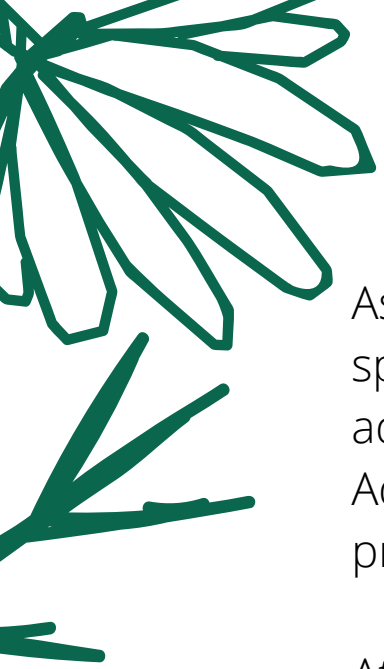
A hose which is connected to the water pump

Place where water should go. Pump resides there and in the right time, fetches the water from the container to the plant

Soil Moisture sensor which goes in the plant

The mechanism resides in the hermetically sealed part of our container, in the bottom of it

Marketing Overview

As of now, our marketing strategy mainly focuses on social media, more specifically Facebook, Instagram, and youtube. We use the first two to both advertise and sell our product, while youtube is for advertising only. Additionally, we have created a website, where the customers can buy the product and read about our company.

At the moment, the product is only available locally, but we have received a few messages from international potential customers, interested in our watering system. One of these people was Ernesto Sirolli, a successful Italian author and public speaker. He also shared our post with a caption: "Our friends in Tbilisi, Georgia, are passionate about entrepreneurship and freedom! In this historic moment, I am particularly fond of helping local start-ups to open up to trade with Europe!" We are thrilled to receive such comments and are planning to sell our irrigation system worldwide in the future.

Market Targeting

Our Target Audience focuses on plant lovers. Through social media, we promote the product to every plant lover locally. We joined a couple Facebook groups and pages where plant-owners talk about and discuss their plants. One concern that kept recurring in every group was how to keep plants watered when one goes away for a long period of time. Our product is perfectly suited to resolve such a problem. We shared the product with the members of the latter groups and asked their opinions.
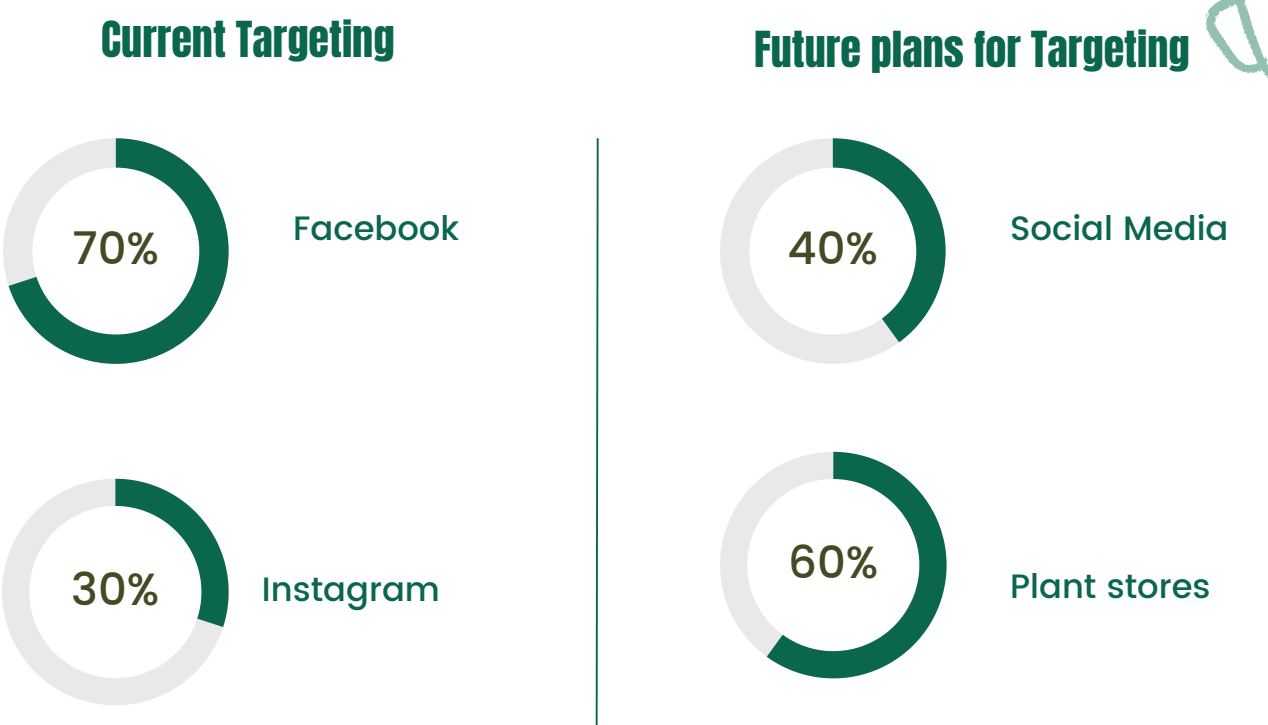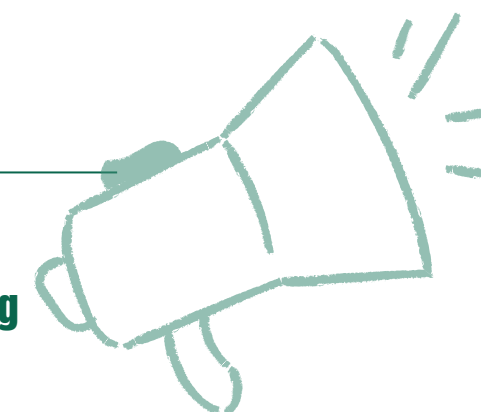
Additionally, we are planning to sell our product in large stores that have a department for indoor plants and the equipment to take care of them. We are contacting such stores in Tbilisi, including Gorgia, IKEA, Domino.

Market Size

At the moment we are selling our products locally, in Georgia. However, as interest grows across the world we hope to sell them across the world one day. The problem we are trying to overcome resides in the whole world, in most of the plant-owners homes, offices, hotels, and many more. The range of customers is vast and growing so does the need for our innovative and unique product which will help people obtain a green environment and healthy life.

Our product not only helps already existing plant-owners but also encourages others to become one, by making the watering process as easy as the snap of a finger. Thus, this increases the market size, even more, makes the company more profitable, and brings green life into the homes of many!

Current Targeting

70% Facebook

30% Instagram

Future plans for Targeting

40% Social Media

60% Plant stores

# IRIGO's Promotion and Accomplishments

Promotion-vise, our company has been a target of the local news network "IMEDI TV", where the CEO of Irigo talked about our product. Additionally, the American Academy in Tbilisi gazette (GZAAT gazette) wrote an article about Irigo and advertised our company. Moreover, our school - GZAAT - has posted about Irigo a few times and has helped us promote our product.

IRIGO has won the "Best Product Prize" at the Entrepreneurship Festival of Tbilisi 2022 and "the "Company Of The Year" prize at the JA finals. IRIGO also became one of the winners of the "Entrepreneurial Ideas Contest" held by Sulkan-Saba University in Tbilisi.

During the competitions, GITA (Georgia's Innovation and Technology Agency) was mesmerized by our product and they became one of our supporters and have offered us the help they can give us in the development of our technological product.
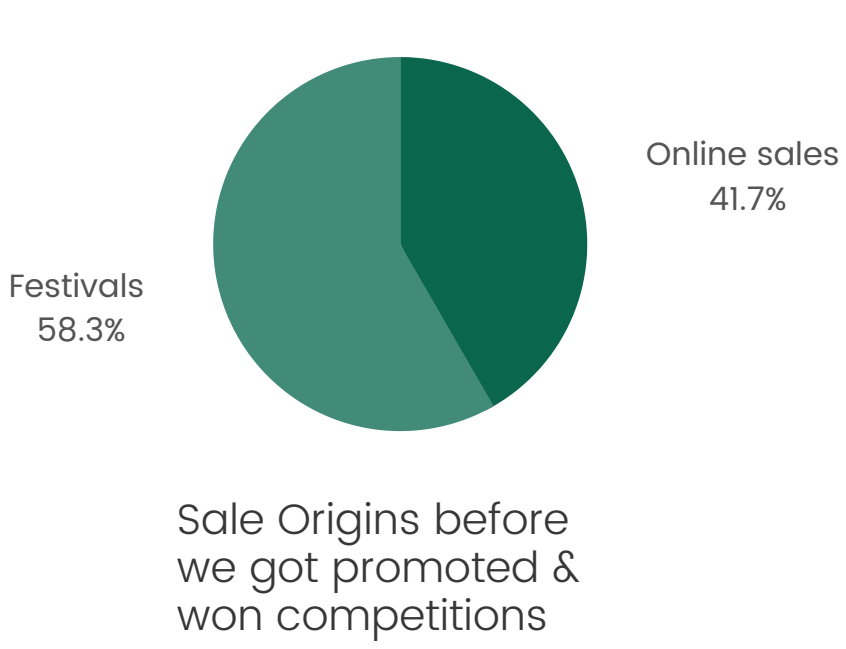
Business Performance and Profitability

Packaging
4.8%

Production
47.5%

Salaries
38.8%

Marketing
4.4%
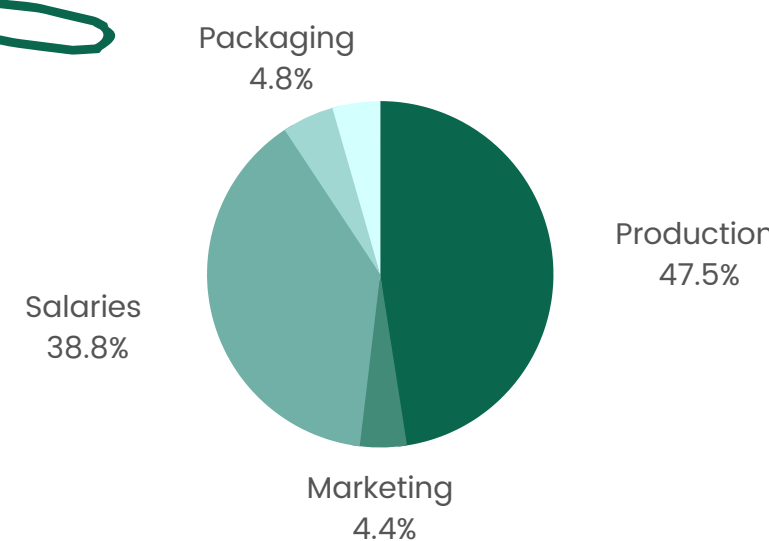
This graph shows on what parts of the company our capital is spent on.

.
Our company has already sold 30 products for 990 euros. Our gross profit thus amounts to 450 euros, while our net profit is 110 euros. The profits come exclusively from the sales of our primary product, which we sell for 33 euros. We have plans to expand our company to derive profits from advertising and partnerships with other companies in the future, as some restaurants with greeneries have already expressed the desire to work with us.

The primary product costs 17 euros to manufacture. It is also placed in a package bag that costs one euro, which is sold as merchandise. We charge 18.4 euros for our service fee.

Festivals
58.3%

Online sales
41.7%

Sale Origins before we got promoted & won competitions

Festivals
21.9%

Online sales
78.1%

Sale Origins after we got promoted & won competitions

Other expenses include marketing, which we allocate 16 euros to per month in order to expand our customer base, and delivery services, which amount to 50 euros per month.

We plan to expand our company every month by increasing our customer base. Examples of our marketing campaigns include brochures and stickers. With our growing popularity, we hope to increase our total sales revenue by 525 euros per month. We also plan to hire more employees in order to facilitate our manufacturing; we currently only have five founding members.

Overall, since our plan is to manufacture 50 products per month, we spend a total of 900 euros on production. The total monthly salaries of our five members is 230 euros, but we plan to increase this amount in the future. Our plan is to sell 50 products, plus delivery and handbags, per month for a total revenue of 1,650 euros. The gross profit will thus be 800 euros, while the net profit will amount to 570 euros with our current salaries

- Number Sold
- Number Predicted

- Profit in EUR
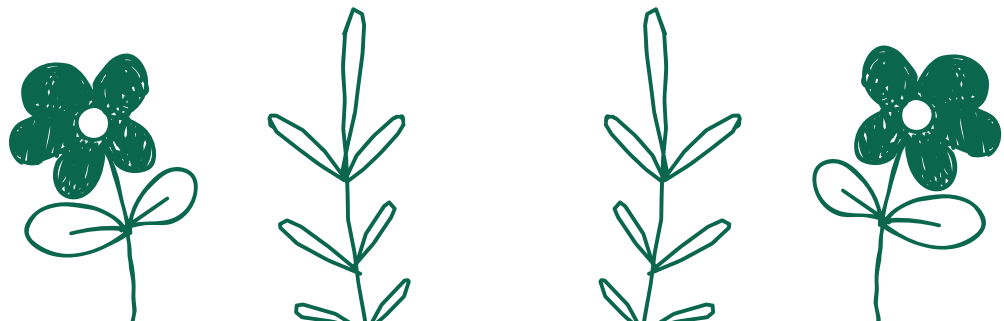- Profit Predicted in EUR
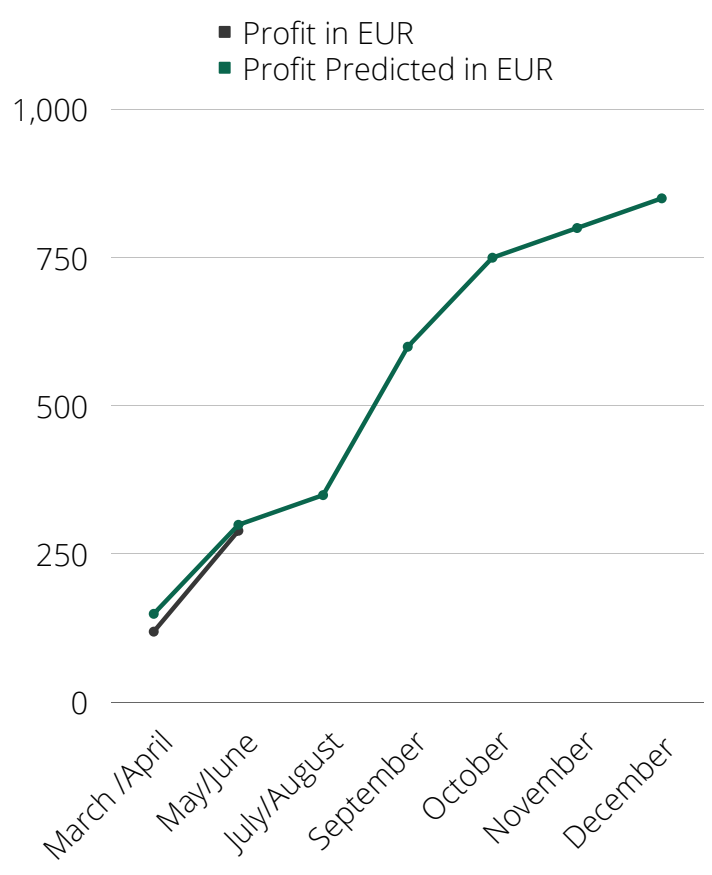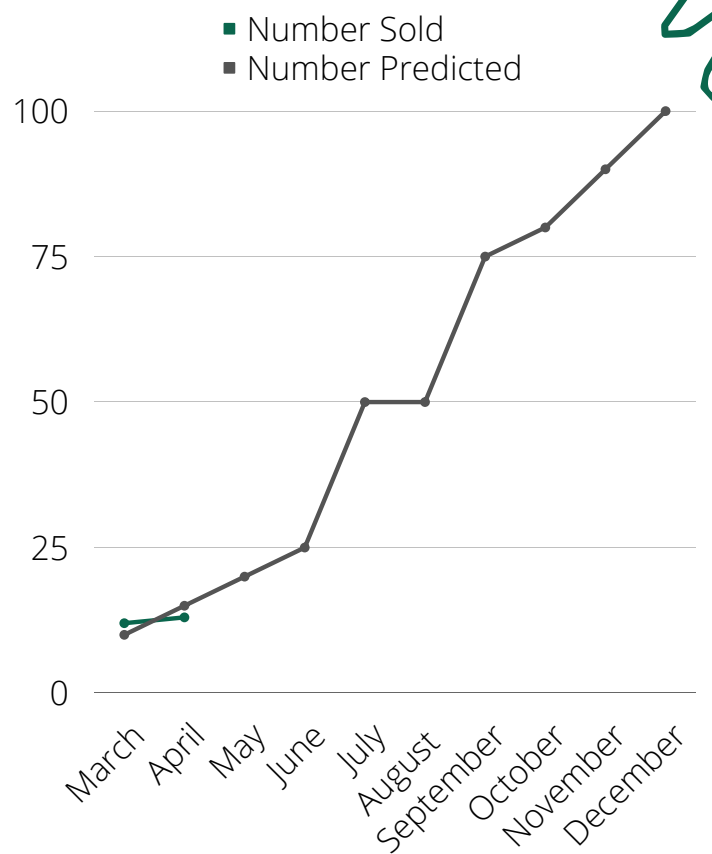
Financial Analysis
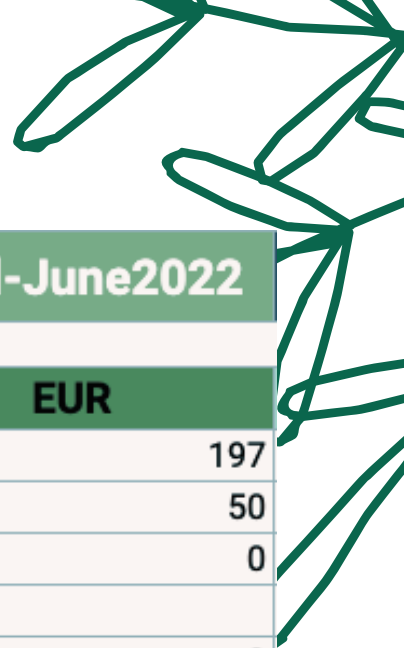
Our budget is allocated to several different departments: the manufacture, merchandise, packaging, delivery, and salaries. Due to our participation in the program, we are currently exempt from taxes. Our starting budget, which was spent on salaries and the manufacture of six sample products that we presented at the JA festival, was 230 euros. Already, our company started out by making a profit at our debut, which is also one of the reasons why we won the prize of Best Product there.

Our main product costs 17 euros to manufacture. We were initially reluctant to spend so much money per product as a mini-student. The cost may sound negligible in euros, but our primary market is in Georgia, where that is considered to be a fairly hefty price compared to our competitors at the JA festival. However, we decided that the innovative nature of our invention, evidenced by the absence of similar products on the international market, was well worth it.

LIABILITIES	April-June 2022
Current Liabilities	**EUR**
Short-Term Debts	0
Dividends Payable	50
Total Current Liabilities:	**50**
Long-Term Liabilities	**EUR**
Long-Term Debts	0
Capital Lease Obligations	0
Total Long-Term Liabilities:	**0**
TOTAL LIABILITIES:	**50**

OWNER'S EQUITY	April-June 2022
Owner's Investment	50
Retained Earnings	180
Software package revaluation reserve	300
TOTAL OWNER'S EQUITY:	**530**

ASSETS	April-June 2022
Current Assets	**EUR**
Cash and Cash Equivalents	197
Inventory	50
Accounts Receivable	0
Prepaid Expenses	
Short-Term Investments	0
Total Current Assets:	**247**
Long-Term (Fixed) Assets	**EUR**
Long-Term Investments	0
Property Costs	0
Equipment	33
Intangible Assets (prepered soft	300
Total Long-Term (Fixed) Assets:	**333**
TOTAL ASSETS:	**580**

Items	Costs (in EUR)
Product	17
ARDUINO sensor	7.8
USB	0.94
Water pump	3
Moisture sensor	0.94
Relay module	1.4
Pump hose	0.25
Jumpers	0.62
Battery holder	1.4
Container	2.5
Box	0.62
Soldering	1.6
Programming	1.6
Service fee	18.4
Package bags	1
Total	33

Other Expenses	Costs (per month)
Marketing	16 EUR
Delivery service	50 EUR
Total	66 EUR
Salaries and benefits	**Amount (per month)**
CEO and Engineer	60 EUR
Finance Manager	40 EUR
HR, Customer Service	40 EUR
Production Manager	40 EUR
Marketing Manager	40 EUR
Total	220 EUR

Revenue	May-June 2022
Net sales	990 EUR
Cost of goods sold	540 EUR
Gross profit	450 EUR
Gross profit margin	45%
Net profit	230 EUR

So far, we have managed to make a significant profit, with a gross profit margin of 45%. Our financial success is thus considerable for a student company.

We currently plan to decrease the cost of our product as much as possible by taking out any unnecessary parts and using cheaper alternatives when possible. This will allow us to make a greater profit.

We also spend a considerable amount of money on salaries. We do not plan to increase them yet even as our company grows in order to maximize our profit.

Challenges and Learning Experiences

Problem №1: *Time* - we discovered JA Entrepreneurship Club in late December, so technically we lost an entire semester of time

Solution: We distributed tasks wisely among the group members, and everyone took responsibility equally. We worked on the product mainly during the winter break and started to build the business during February-March.

Learning Experience: *Time management* - we developed the skill of distributing tasks equally and effectively so that in a shorter period of time, we managed to produce a perfectly working product and a student business. In addition, our resilience grew because we had to work harder given the short time we had for submitting a business plan.

Problem №2: *An algorithm that would suit all kinds of small house plants simultaneously*

Solution: We conducted a small research/experiment on the level of soil moisture of twenty most common house plants, and we based the algorithm on the results. However, if a customer's plant is unique and exotic, we offer an online service via facebook account, where they can contact us and provide the information about their plants that will help us to write a custom algorithm.

Learning Experience: *Patience* - in the process of building the product, we came across many little failures, whether it was the algorithm that had a flaw or the quality of wires connecting different parts of the system or a container where all components of the product - water and technology - would go together without one damaging the other. To be able to solve such scrupulous problems, we had to be very patient; and so we developed patience from the experiences.

Problem №3: *Growing the business to reach a larger audience, trying to promote our business and attract customers.*

Solution: We promoted posts on facebook and instagram as "sponsored", and thus reached people who otherwise wouldn't hear about our company. We posted tik-toks, given that today it is one of the most used social media platforms; we told people around us about our company. Moreover, we joined specific groups on facebook that were composed of people profoundly interested in plants; these people would more than anyone need a mechanism like ours. Additionally, we created merchandise - bags and stickers.

Learning Experience: *What does it mean to be an entrepreneur and how to be one* - how to create something new and how to build a company from scratch. When learning about student companies we accumulated an understanding on PR and marketing, HR and customer service, finances and so many other things that we had a little knowledge about before.

Problem №4: *Writing the algorithm*
Solution: Though we had a basic understanding of how to code, we had never before written an algorithm for something as complicated and intricate as our product. Therefore, it took us a lot of tries to write the perfect algorithm. But as they say, practice makes perfect. After many tries, we managed to write the right algorithm.

**Problem №5:** *Container where everything would go*
Solution: We tried out many, many different containers and ways to fit everything into one box. In the end, we creatively approached the issue and pretty much created our own containers by attaching and removing different parts.

Future Potential

On every single exhibition or a competition where we have participated in the name of Irigo, people have come to us, saying that they are seeing the huge potential of our company on a large and small scale, both for indoor plants and plantations. Some told us that they are working in Agrotech and that they would like to work with us in the future if we decide to expand our company on larger scales. We heard what they said and sat, filled with motivation, to improve and grow our company. We are currently working on patenting our product. We have filled the forms of Sakpatenti - The National Intellectual Property Center of Georgia and are waiting for their decision.
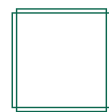

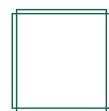
How To Use IRIGO
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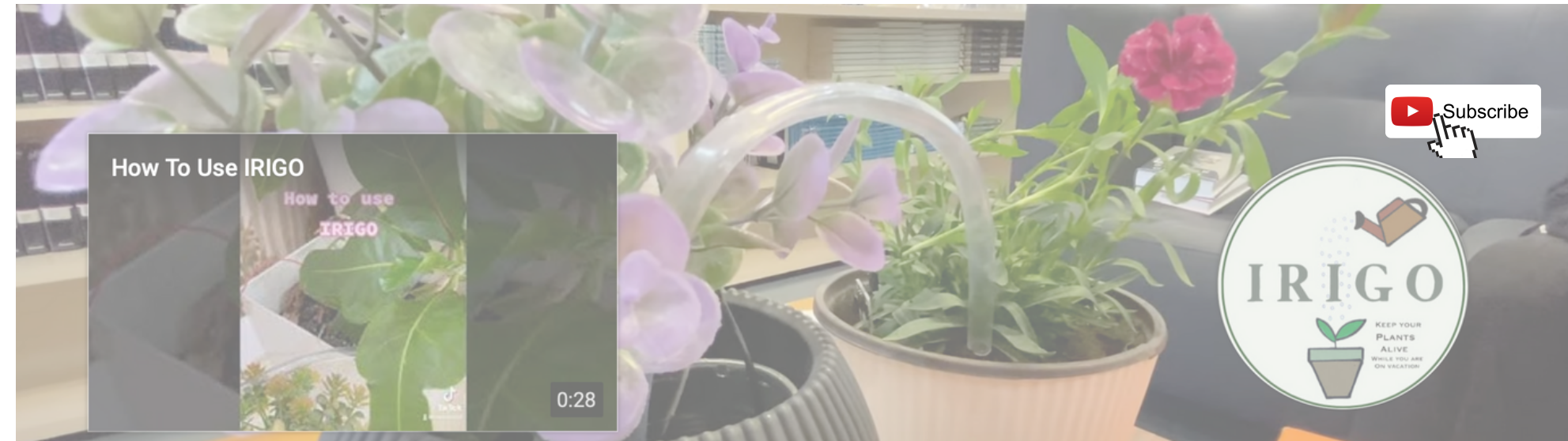
To Do Checklist
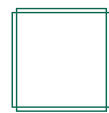
☐ Get the product Patented
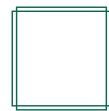
☐ Become a state company

☐ Create a Product suitable for many plants

☐ Step in Agrotech, develop the systems

We plan to make our product utilizable for much bigger scales. Firstly, we're working on making a single product suitable for many and not just one house plant. Then, we're going to make it capable of watering large plantations and vineyards. As of now, this idea seems hypothetical, but we have already started to think about and develop an engineering scheme for a large-scale product. However, to achieve our goal, we need help from different companies that support technologically innovative student student businesses. GITA - Georgia's Innovation and Technology Agency - is interested in our product and is willing to offer help in technological aspects of its improvement. Given the amount of interest Irigo has gained on multiple exhibitions, there are big investment possibilities. As soon as we create a product that can water multiple house plants instead of just one, we are planning to use all of these possibilities to the fullest.

Thank You

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