

**PGPI**

## **Práctica 5**

# **Estimates**

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## Estimated Project Budget

### Estimated I + D Budget – Global View

Gastos elegibles	Importe Solicitado
<b>GASTOS DE PERSONAL</b>	<b>70604,205</b>
Total gastos de contratación de personal investigador	11701,2
Total gastos de contratación de personal programador	21243,25
Total gastos de contratación de personal de diseño	20107,955
Total gastos de contratación de personal de documentación	17551,8
<b>GASTOR DE EJECUCIÓN</b>	<b>18553,74667</b>
<b>Costes de adquisición de material inventariable</b>	
Ordenadores temporales + monitores	5951
Nuevo mobiliario de oficina (mesas + sillas)	2600
Telefonos móviles de la compañía	627,36
Gastos en servidores	5874
Software de diseño	0
Amortizaciones mobiliario	-8,666666667
Amortizaciones ordenadores	-79,34666667
<b>Costes de adquisición de material fungible</b>	
Boligrafos	126,5
Papel de documentacion	359
Gastos alimenticios	60,4
Mantenimiento de Oficina	1360
<b>Costes de investigación contractual, conocimientos técnicos y patentes</b>	
Investigación de nuevas tecnologías	500
<b>Costes de consultoría, prestación de servicios, suministros, etc</b>	
Consulta de aspectos legales e éticos del proyecto	700
Costes de subcontratación (Transportistas)	483,5
<b>GASTOS COMPLEMENTARIOS</b>	<b>26240</b>
<b>Gastos de desplazamiento, viajes, estancias y dietas (derivados del proyecto)</b>	
Viaje de trabajo a los Hospitales	3600
Gastos de estancias en Hoteles durante el viaje	400
Dietas	240
<b>Gastos de material de difusión, publicaciones, promoción, catálogos, folletos, cartelería, etc.</b>	
Folletos de información	0
<b>Gastos de inscripción en congresos y seminarios relacionados con la actividad</b>	
Formacion de Personal	22000
Otro gastos de funcionamiento derivados de la actividad de investigación	0
<b>TOTAL INCENTIVO SOLICITADO</b>	<b>115397,9517</b>
<b>TOTAL CON BENEFICIO</b>	<b>145401,4191</b>
<b>TOTAL CON BENEFICIO Y IVA</b>	<b>175935,7171</b>

### Personnel View

<b>GASTOS DE PERSONAL</b>	<b>70604,205</b>
Total gastos de contratación de personal investigador	11701,2
Total gastos de contratación de personal programador	21243,25
Total gastos de contratación de personal de diseño	20107,955
Total gastos de contratación de personal de documentación	17551,8

The average salary for each different type of worker was calculated using the sources detailed at the bottom of the document. The salaries for each worker take into consideration the number of months they are required to work for (we currently assume we will be paying

our workers on a monthly basis and not an hourly basis) and an average of 39.3% salary that will be destined to taxes and social security. This leaves us with a formula much like this one:

$$\text{Total Salary} = \text{Work\_Months} * (\text{Base\_Salary} * (1 + \text{TAXES\_AND\_SS}))$$

Vacation time and other festivities are encompassed in the number of work months the worker works for, so it won't be needed to be added to the formula. Doing all the calculations leaves us with a total of **70604,01€**.

### Execution View

<b>GASTOR DE EJECUCIÓN</b>	<b>18553,74667</b>
<b>Costes de adquisición de material inventariable</b>	
Ordenadores temporales + monitores	5951
Nuevo mobiliario de oficina (mesas + sillas)	2600
Telefonos mobiles de la compañía	627,36
Gastos en servidores	5874
Software de diseño	0
Amortizaciones mobiliario	-8,666666667
Amortizaciones ordenadores	-79,34666667
<b>Costes de adquisición de material fungible</b>	
Boligrafos	126,5
Papel de documentacion	359
Gastos alimenticios	60,4
Mantenimiento de Oficina	1360
<b>Costes de investigación contractual, conocimientos técnicos y patentes</b>	
Investigación de nuevas tecnologías	500
<b>Costes de consultoría, prestación de servicios, suministros, etc</b>	
Consulta de aspectos legales e eticos del proyecto	700
Costes de subcontratación (Transportistas)	483,5

The execution costs will take into consideration all materials needed for the development of the project and its further use in the company. With that we can assume the **phones, computers, monitors and furniture** will be used in the company for future projects. We also remove the **amortization** that the use of the furniture and computers will provide for the project.

The project will either develop using new technologies or use existing free software to create it, so we won't be adding software costs. There will be a need to **investigate new technologies**, so costs involving this investigation and a **legal and ethics report** regarding the project will be needed to be developed.

We have estimated the number of **pens, paper, office food consumption and office maintenance costs** that will be needed to be done during the development time of the project.

Additionally, in the last stages of the project there will be a need for a **transporter** to move the servers into a localized building in Granada, be this one of the hospitals or a different one.

The total costs of this view are **18553,75€**.

## Complementary View

GASTOS COMPLEMENTARIOS	26240
<b>Gastos de desplazamiento, viajes, estancias y dietas (derivados del proyecto)</b>	
Viaje de trabajo a los Hospitales	3600
Gastos de estancias en Hoteles durante el viaje	400
Dietas	240
<b>Gastos de material de difusión, publicaciones, promoción, catálogos, folletos, cartelería, etc.</b>	
Folletos de información	0
<b>Gastos de inscripción en congresos y seminarios relacionados con la actividad</b>	
Formacion de Personal	22000
Otro gastos de funcionamiento derivados de la actividad de investigación	0

Complementary costs will firstly take into consideration the costs needed to be done, at the start of the project, to investigate the hospitals in Granada and its current systems. We estimated the worker in charge of this task need **travel costs, stay costs and diets** in order to eat.

Additionally, we don't expect to need the diffusion of pamphlets or posters to be needed for our project, as at most it would use a virtual website to publish its results.

We will use most of the total cost of this view in the teaching of our working personnel, this would take into consideration the teaching of all the developers, the web designers, the documenters and possibly the medical staff involved.

All the calculations lead us into a total of **26240€**.

## Estimated Budget – by Tasks

In order to make the estimated budget detailed by tasks, we will be grouping the tasks beforehand so that we can avoid much of the clutter caused by minor tasks.

Task	Personnel Involved	Duration (Days)	Total (€)
<b>Preparation</b>	System Architect	0,5	120,73 €
	Design Leader		
	Programmer Leader		
	Economist		
	System Analyst		
	Risk Analyst		
	Quality Expert		
	Cyber Security System		
	DB administrator		
<b>Presentation</b>	Team Leader	3	724,35 €
	Economist		
	Risk Analyst		
	Quality Expert		
	Cyber Security System		
	DB administrator		
	Programmer Leader	79,25	19134,95 €
	Programmer Team		

<b>Development of module 1: Drug Management</b>	Design Leader		
	Design Team		
	System Architect		
	Project Boss		
<b>Development of module 2</b>	Programmer Leader	42,25	10201,28 €
	Programmer Team		
	Design Leader		
	Design Team		
	System Architect		
	Project Boss		
<b>Development of module 3: Medical Staff Communication Channel</b>	Programmer Leader	42,25	10201,28 €
	Programmer Team		
	Design Leader		
	Design Team		
	System Architect		
	Project Boss		
<b>Documentation</b>	Programmer Leader	36,667	8853,26 €
	Programmer Team		
	Design Leader		
	DB Administrator		
	Cyber Security Expert		
	System Architect		
	Project Leader		
<b>Deployment and Infrastructure</b>	Programmer Team	77	18591,68 €
	Installation Team		
<b>Delivery</b>	Project Boss	11,5	2776,68 €
<b>TOTAL</b>	-	292,417	70604,205

It's important to detail that our company will be paying its workers on a monthly case and not based on their worked hours, since we assume the workers will keep working on different projects after this one is done. Due to this, the budget by tasks will simply assume the estimated cost of each task regarding worker budgets in the project.

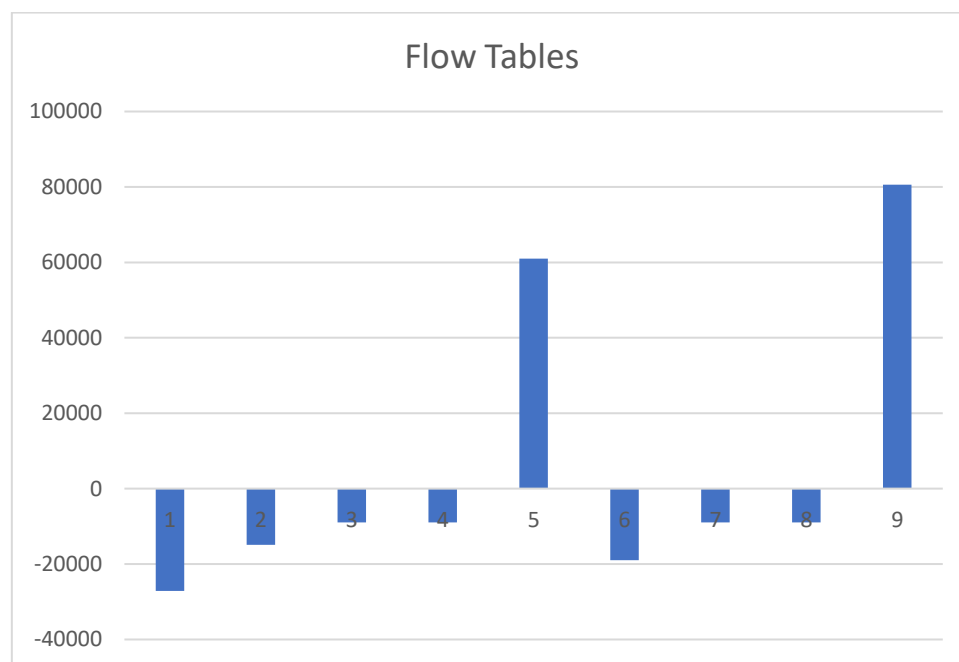
### Flow Table

	0	1	2	3	4	5	6	7	8
Ingresos					70000				90000
Equipamiento: Ordenadores	-5951								
Formacion de personal	-12000					-10000			
Licencias software	0								
Personal	-8825,52563	-8825,525625	-8825,52563	-8825,52563	-8825,52563	-8825,52563	-8825,52563	-8825,52563	-8825,52563
Fungible	-545,9								
Equipamiento: Mobiliario	-2600								
Gastos en investigacion	-4240								
Equipamiento: mobiles	-627,36								
Equipamiento: servidores		-5874							
Amortizaciones									88,01333333
Mantenimiento Oficina		-170	-170	-170	-170	-170	-170	-170	-170
Consultoria legal	-700								
Subcontratacion									-483,5
Investigaciones	-500								
Total ingresos	175935,717								
Total gastos	115397,952								
Diferencia	60537,7654								

Taking all the calculations shown in the I+D estimate we developed the flow table. In the flow table we divided the total cost of our workforce and steadily decided to spread it during unit of development time. Additionally, most purchased goods and equipment was added in month 0 of the development cycle since these items will be needed for the development of the project. Furthermore, we plan on separating the personnel training of our company in 2, the first bulk being before the software development is started and the second bulk before the final tasks are needed to be realized.

We will also be utilizing a half way pay system, where the project will receive 43.75% of the projects total cost at its halfway point, in order to fully be able to pay for the development of the project and the rest of the pay at the end.

Secuencia	-27164,26	-14869,5256	-8995,525625	-8995,52563	61004,4744	-18995,5256	-8995,52563	-8995,52563	80608,98771
SUMA SECUENCIA	-27164,26	-42033,7856	-51029,31125	-60024,8369	979,6375	-18015,8881	-27011,4138	-36006,9394	44602,04833
Prestamo 11% cuatrimestral	0,11								
	P0	P1	P2	P3	P4	P5	P6	P7	P8
	-27164,26				882,556306				36200,023
VAN	9918,3193								
Prestamo 4% semestral	0,04								
	P0	P1	P2	P3	P4	P5	P6	P7	P8
	-27164,26		-47179,46676		870,89417		837,398241		36659,63254
VAN	-35975,8018	No viable							
TIR	11%								



We developed to 2 VAN calculations, each with a different loan and interest rate on this loan. We calculated that an 11% interest rate each quarter would make the project viable, while a 4% interest rate every semester would make it not viable. After calculating the VAN, we calculated the TIR of our sequence and discovered that our project would give us a **11% internal return**.

## Sources

- System Analyst Salary:
  - <https://www.indeed.es/salaries/analista-de-sistema-Salaries>
- Software Developer Salary:
  - <https://www.daxx.com/blog/development-trends/it-salaries-software-developer-trends-2019#:~:targetText=Software%20Engineer%20Salaries%20in%20Europe%2C%20February%202019&targetText=French%2C%20Finnish%2C%20and%20Dutch%20developers,to%20%2455K%20per%20year.>
- Visual Designer Salary:
  - [https://www.glassdoor.es/Sueldos/visual-designer-sueldo-SRCH\\_K00,15.htm?countryRedirect=true](https://www.glassdoor.es/Sueldos/visual-designer-sueldo-SRCH_K00,15.htm?countryRedirect=true)
- Software Documenter Salary:
  - [https://www.google.com/search?rlz=1C1CHBF\\_esES822ES822&biw=1919&bih=959&ei=-cLFXyBDsv4alyzgpAP&q=software+documentation+salary&oq=software+documentation+salary&gs\\_l=psy-ab.3..0i30.2365.3921..4023...0.0..0.101.818.8j1.....0....1..gws-wiz.....0i7i30i19j0i19j0i8i7i30i19j0i13i30i19j0i13i5i30i19j0i7i30.8HAqn6c06bw&ved=0ahUKEwjM4b3SrdvIAhVLPBoKHYYZAPIQ4dUDCAs&uact=5](https://www.google.com/search?rlz=1C1CHBF_esES822ES822&biw=1919&bih=959&ei=-cLFXyBDsv4alyzgpAP&q=software+documentation+salary&oq=software+documentation+salary&gs_l=psy-ab.3..0i30.2365.3921..4023...0.0..0.101.818.8j1.....0....1..gws-wiz.....0i7i30i19j0i19j0i8i7i30i19j0i13i30i19j0i13i5i30i19j0i7i30.8HAqn6c06bw&ved=0ahUKEwjM4b3SrdvIAhVLPBoKHYYZAPIQ4dUDCAs&uact=5)
- Basic Server:
  - [https://www.macnificos.com/qnap-tvs-951x-servidor-nas?gclid=EAlaIqobChMI3L2kbp7R5QIVB\\_hRCh2NHAI\\_EAYYBCABEgJP7\\_D\\_BwE#sku-QNA0297](https://www.macnificos.com/qnap-tvs-951x-servidor-nas?gclid=EAlaIqobChMI3L2kbp7R5QIVB_hRCh2NHAI_EAYYBCABEgJP7_D_BwE#sku-QNA0297)
- Contracted transporters:
  - [https://www.google.com/search?rlz=1C1CHBD\\_esES870ES870&ei=zG7AXa-rOJClUqWrtogB&q=salario+transportista&oq=salario+transportista&gs\\_l=psy-ab.3..0j0i30i2j0i8i30i6.3385.4344..4456...0.1..0.106.745.8j1.....0....1..gws-wiz.....0i71j0i13j0i13i30j0i8i13i30.jfkqw3BniIg&ved=0ahUKEwivwbnVmNHIAhWQkhQKHawVDREQ4dUDCAs&uact=5](https://www.google.com/search?rlz=1C1CHBD_esES870ES870&ei=zG7AXa-rOJClUqWrtogB&q=salario+transportista&oq=salario+transportista&gs_l=psy-ab.3..0j0i30i2j0i8i30i6.3385.4344..4456...0.1..0.106.745.8j1.....0....1..gws-wiz.....0i71j0i13j0i13i30j0i8i13i30.jfkqw3BniIg&ved=0ahUKEwivwbnVmNHIAhWQkhQKHawVDREQ4dUDCAs&uact=5)