

# UNAM

## Facultad de Ingeniería

### Computación Gráfica e Interacción Humano-Computadora

#### Project cost analysis

**Student:**  
**316030120**

**Group: 05**

**Date : 08/06/23**

**Semester 2023-2**

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# Planning of the activities

This project have three principal activities

1. 3D Modeling
2. Made and the use of textures
3. Coding

This project needed knowledge and tools like a computer were necessary.

## Software used:

1. Blender (3D modeling)
2. Krita (Make textures)
3. Visual Studio 2022 (Code)

Additionally, each of the apps mentioned above can be used without purchasing a license up to a certain extent and are all free to use.

In contrast, Visual Studio can charge if you have more than a certain number of users working and charge at least a few million pesos a year; since this is not the case, there will not be a penny to pay at least for this project. Blender and Krita are directly free and open source, meaning that it is possible to create commercial projects with them without having to pay a single cent.

In conclusion, you are not required to pay any software license fees because you are using free tools.

## Hardware

1. Graphics Card GTX 1650 SUPER

2. Micro-Processor Ryzen 5 2600
3. Power Supply EVGA 450W Bronze Plus
4. SSD 240Gb Kingston
5. Motherboard Asus B450
6. 16Gb Ram Corsair

Our tools for this work is the computer, without the computer we can't get the job done.

## Details of the activities

### 3D Modeling

Even the person in charge of the modeling isn't an expert, he (me) has the knowledge to develop the project.

### Texturing

We expect that this will be the longest part, even the texture is simple, the lack of experience will slow down the process.

### Coding

We have to code the virtual tour, but the personnel have a lot of experience coding, so we expect that this will be the shortest part.

## Project costs:

### Work tools:

We have to look the parts of the computer to know the depreciation

Fixed Costs	
Part	Price
Video Card 1650 SUPER	\$4,569.00
Motherboard Asus Prime B450M-A II AM4	\$1,500.00
SSD Kingston 240 GB	\$500.00
CPU heatsink Cooler Master 212 Led	\$569.00
Power Supply EVGA 450 Bronze 80 Plus 24-pin ATX	\$989.00
16 Gb Ram Cosair Vengeance	\$1,608.00
BenQ 21.5 Pulgadas Monitor	\$2,879.00
Generic Mouse and Keyboard	\$300.00
Eagle Warrior FLASH Cabinet	\$800.00
Ryzen 5 2600	\$3,889.00
<b>Total price</b>	<b>\$17,603.00</b>
<b>Depreciation :</b>	<b>\$293.38</b>

Is necessary to include all the elements of the computer and calculate the depreciation, which is calculated by dividing 12 by the total cost of the computer and then by 5.

All the components that are seen before are included because with the lack of just one of them, it would be impossible to work.

## Maintenance costs

Maintenance	
Electricity Bill	\$200.00
Internet cost	\$600.00
Cost of food	\$1,500.00
<b>Total Price</b>	<b>\$2,300.00</b>

We need to eat, the internet, electricity and other basic services, so we are going to discount the total price from the money that cost the project.

## Work Hours

In order to know the cost of the project we need to know the hours that took to make the project.

Worked hours	Hours		Work		
Modeling	5		Hour cost	Daily Hours	Work days
Make textures	6		120	6	3.166666667
Textures Mapping	4				
Coding	4				
Total	19				

The hours are being counted as a programmer, we need to know this to the next step.

## Project cost

Cost of the project	
Depreciation x hours	\$5,574.28
Cost x hour	\$2,280.00
Project total	\$7,854.28

We are gonna to multiply the hours worked and the hours that we use the computer, we multiply the depreciation by the hours, this has the goal to cover the cost of using the computer.

## Benefits, utilities and taxes

Proceeds	
Utilities	\$5,554.28
Taxes (2.5%)	\$138.857
Profits excluding taxes	\$5,415.426

The profits are calculated with the total of the project - total maintenance price, in the event that there were more employees or other things, they would also be added in this item, however, since there is not, only taxes must be applied In this case, this project would be from Mexico, and here the entity in charge of tax matters is the SAT, which says that a person who earns less than 3.5 million pesos and is dedicated to professional and business activities, Fiscal incorporation, rent or carry out agricultural activities, may belong to the Simplified Trust Regime, which says that people within this regime are obliged to pay between 1% and 2.5% of their income.

For practicality, in this case, the maximum percentage is being used directly, and our benefit is the profits after deducting taxes.

## Conclusions

With the breakdown seen above, in my case I would charge the total amount of the project, probably with a slightly higher percentage, 15 or 25% more, however, charging the indicated amounts seems fine to me, and fair, although this is my particular case, as a student who has the luxury of living in his own home and therefore does not pay rent, however I am well aware that there may be things that I do not fully consider because I do not know them, such as the payment property tax, or water, or gas for food and in this case, specialized licenses were not necessary either, since if there were, it would also have been necessary to charge the percentage of use of the license.

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