



**Arab International University**

**Faculty of Informatics and Communication Engineering**

**Expert Systems Project Report on**

**Software projects consultant**

Submitted to

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**Informatics Engineering**

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# Abstract

The project aims at suggest IDEs, frameworks, programing languages, libraries to build a software, It has a group of questions about software type, platform and experience that allows the user to know how to start development.

In return, the software automatically suggests the answer based on previous experience from engineers, doctors and internet references, allowing the user to save time on searching and giving him automated results to know his first steps.

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# Abbreviations

AIU	Arab International University
EXP	Expert Systems
GUI	Graphic user interface
OS	Operating system

# Keywords

Knowledge base

Inference engine

Working memory

# Chapter 1: Introduction

## 1.1 Background

Software Project Consultant is an expert system that will help junior developers and students to choose the best frameworks beside the best environment and libraries to use them based on simple questions that will help to have a good look about the project and the developer experience.

Worldwide, there are a lot of developers looking out for advices for working on their projects, and lots of amazing ideas has failed because of bad tools framework and environment choices.

# Chapter 2: Data acquisition

## 2.1 Knowledge Gathering:

This Expert System gathered knowledge from different kind of resources such as articles , websites and engineers. In general the knowledge base was gathered and organized in a way that can help the system be as comprehensive as possible with that huge number of bifurcations.

## 2.2 Questions types:

Yes/No questions

This kind of questions have a function called ask-yes-or-no questions , it makes sure that the user only chooses to enter either yes or no only , otherwise it will loop asking the same question over and over again

## **2.3 Asked questions:**

for work-space experts

- As a developer what is your most faces problem?
- Have you made a game, website, web, android or windows application?
- Have you faced any problems?
- What is the most thing that you like in your software product?
- What is the most update feature that you think is important to be made in software product after few years from launching it?

for IT-doctors

- Is it hard to insert AI codes in specific frameworks?
- What is the most faced problem for the last bunch of projects that you have seen?
- What do you think is the most important feature that most of the developers miss?

for work-leaders

- What do you think is the most important feature in now adays projects?
- What is the most update feature that you made in your software product after few years from launching it?
- what is your most faced problem?

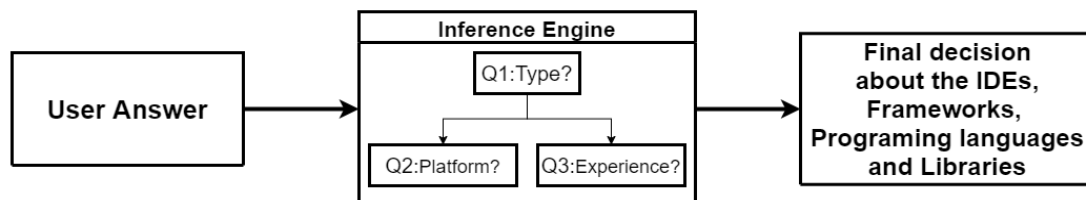
# Chapter 3: System Analysis

## 3.1 Logical order of questions:

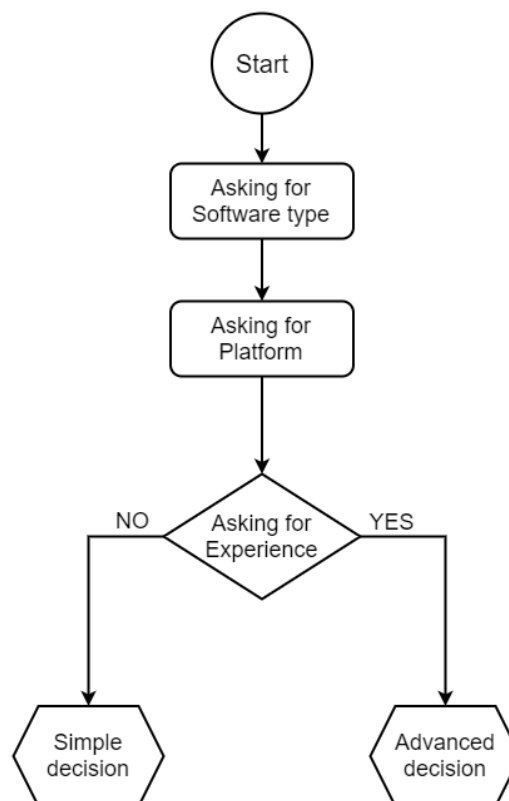
Software projects consultant simulates how the expert can take the right way that can help the user to choose the appropriate decision.

After the preparation of the questions, arranging the questions was depending on making the questions going from the most general down to most specific, generalize the first questions can help the system to ignore the excluded cases.

## 3.2 Block diagram:



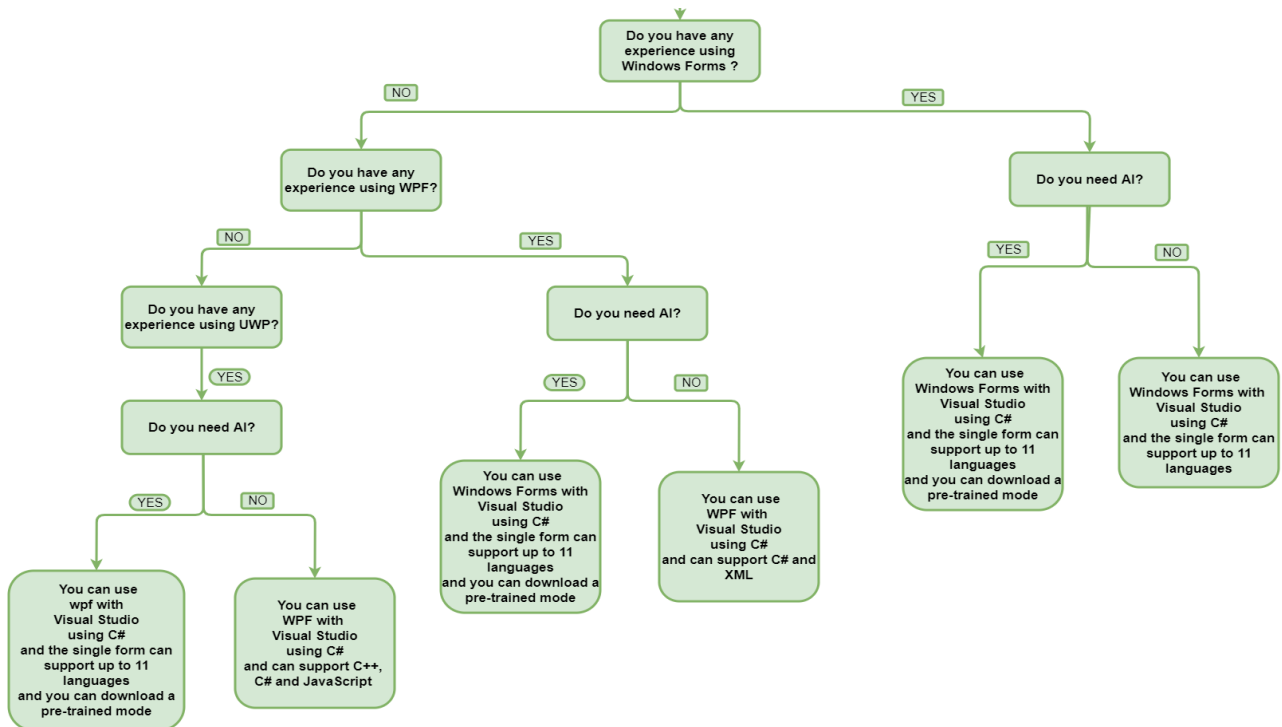
## 3.3 Flowchart:



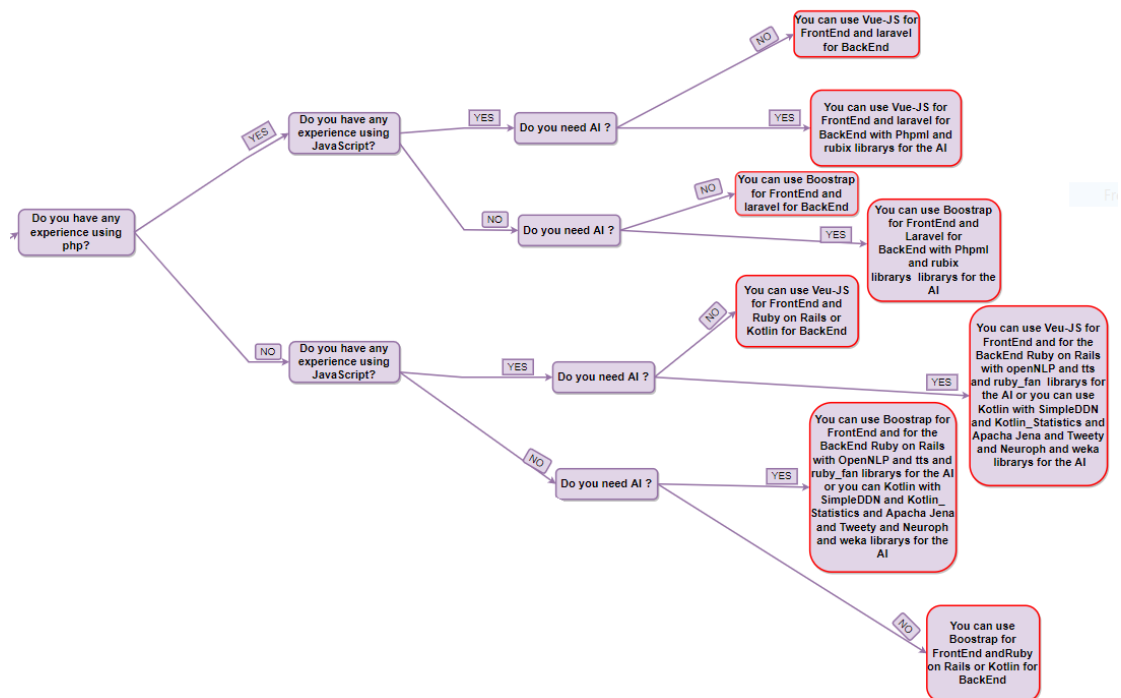


### 3.4 Decision tree samples:

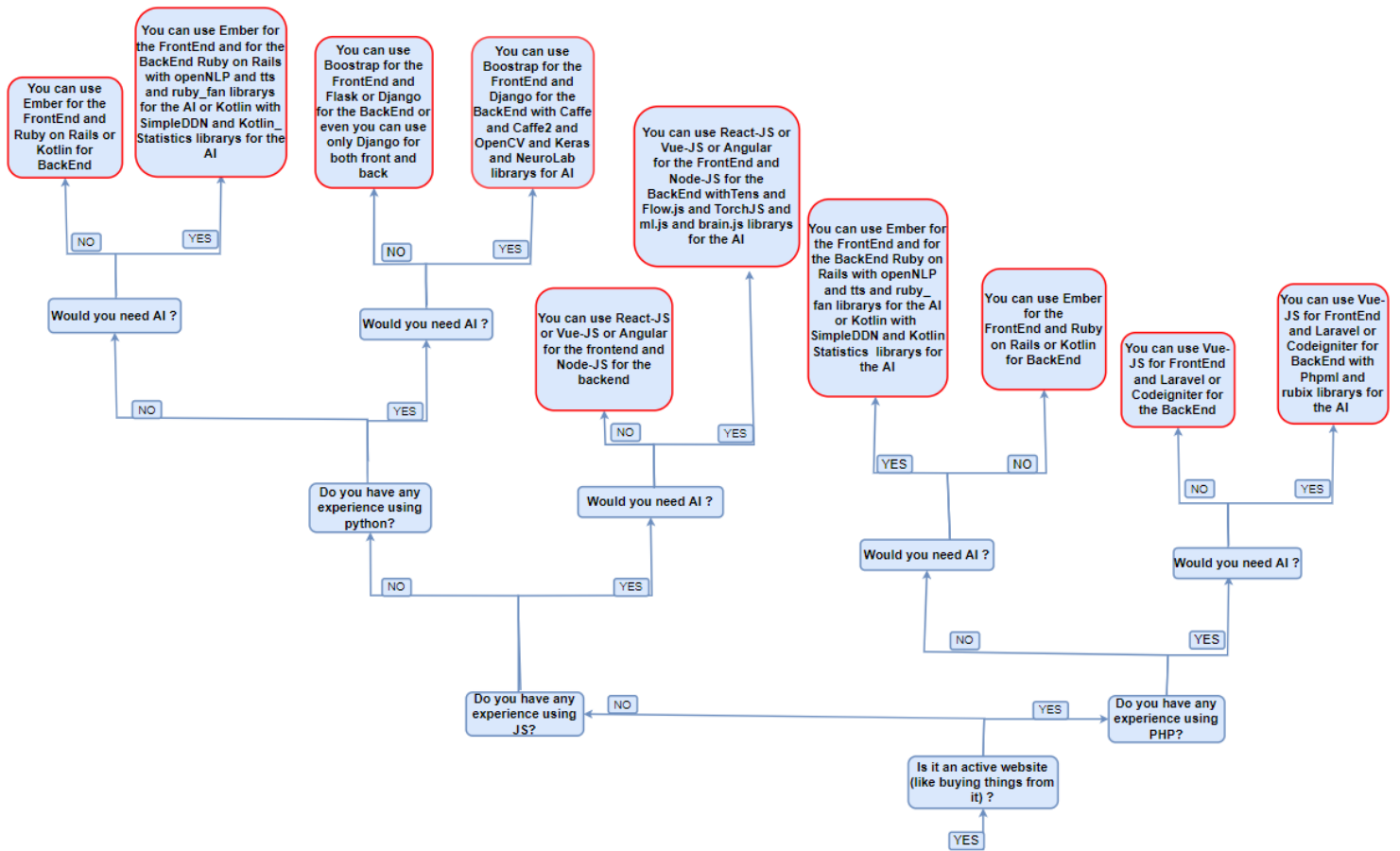
#### 3.4.1 Windows:



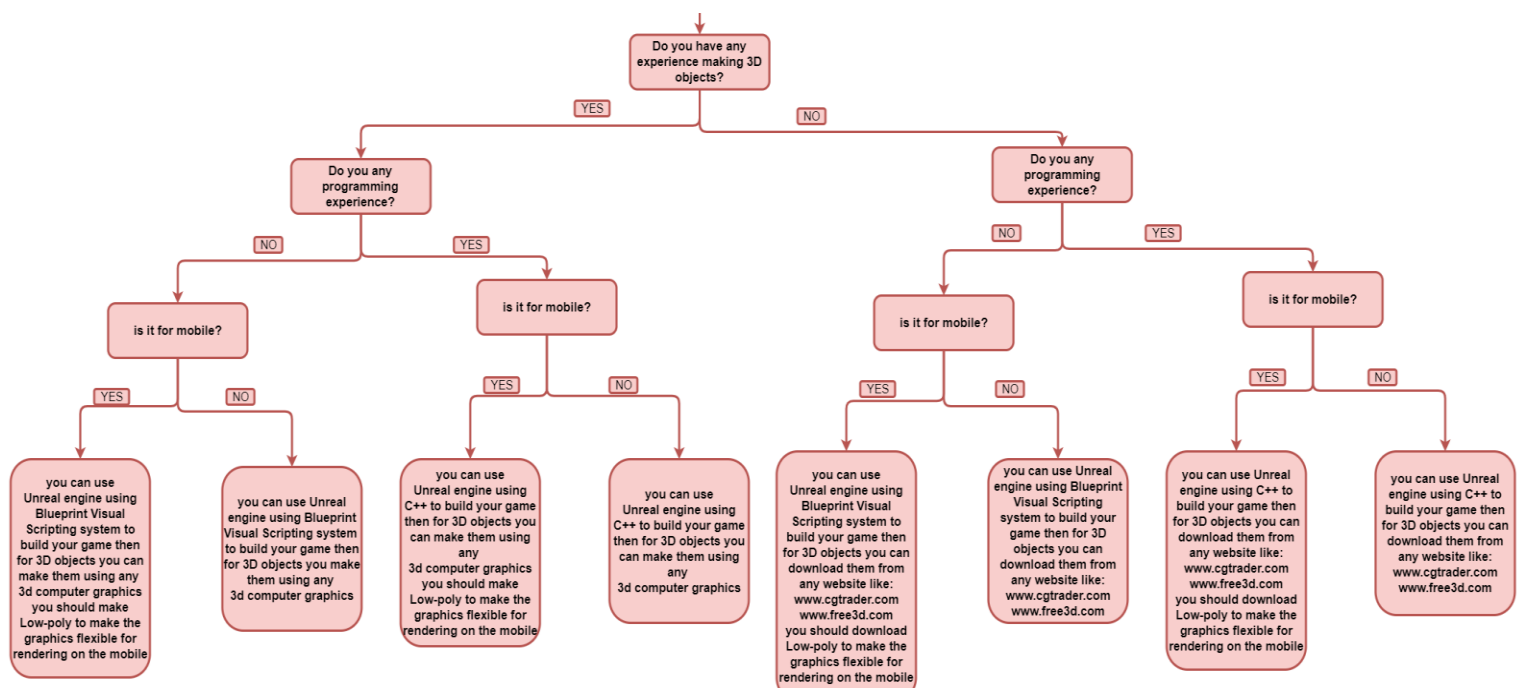
#### 3.4.2 Android:



### 3.4.3 Web:



### 3.4.4 Video game:



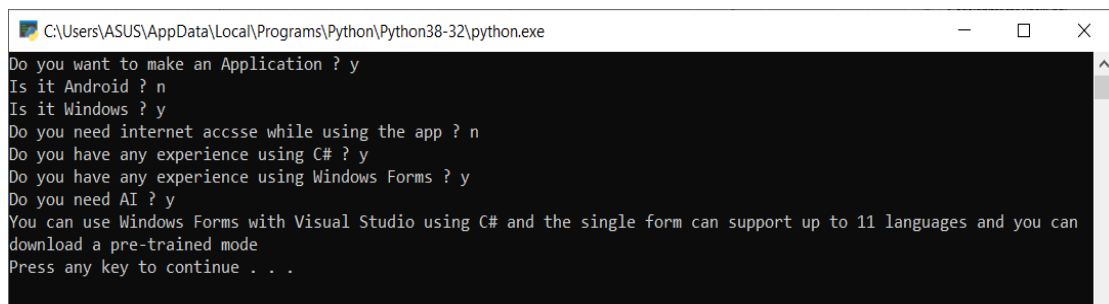
# Chapter 4: Implementation & Results

## 4.1 Implementation:

The actual code was implemented through Python using Experta library that can function the system processes from user-given facts and the flow of events inside the system leading to the correct decision.

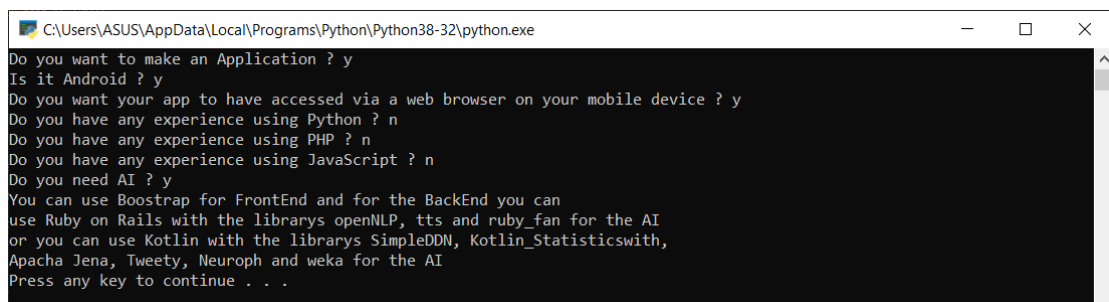
## 4.2 Results:

### 4.2.1 Windows:



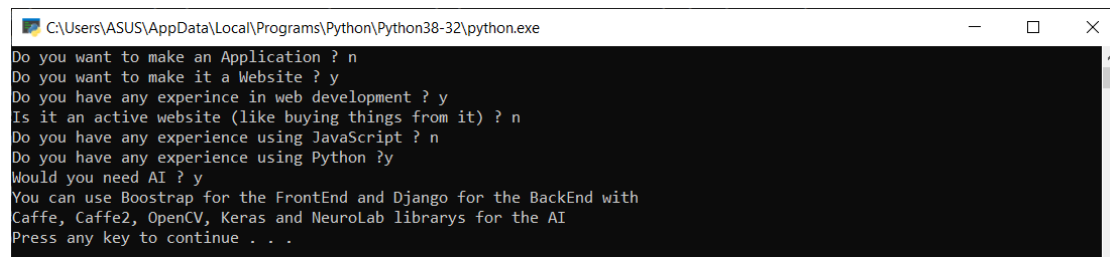
```
C:\Users\ASUS\AppData\Local\Programs\Python\Python38-32\python.exe
Do you want to make an Application ? y
Is it Android ? n
Is it Windows ? y
Do you need internet accsse while using the app ? n
Do you have any experience using C# ? y
Do you have any experience using Windows Forms ? y
Do you need AI ? y
You can use Windows Forms with Visual Studio using C# and the single form can support up to 11 languages and you can
download a pre-trained mode
Press any key to continue . . .
```

### 4.2.2 Android:



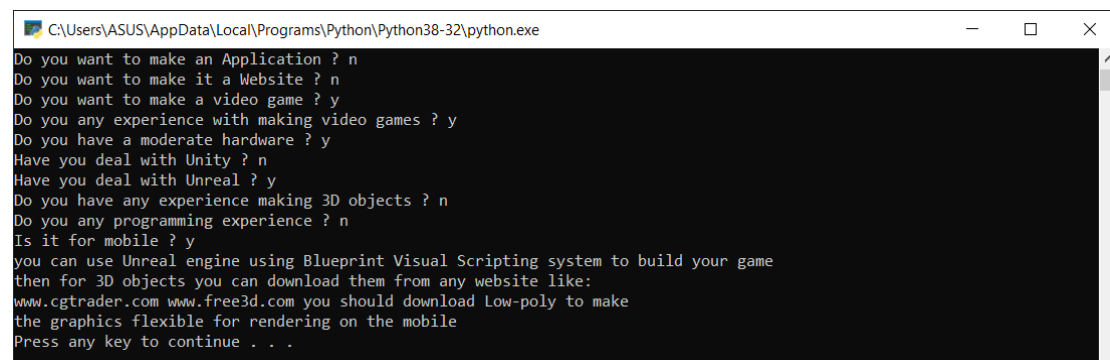
```
C:\Users\ASUS\AppData\Local\Programs\Python\Python38-32\python.exe
Do you want to make an Application ? y
Is it Android ? y
Do you want your app to have accessed via a web browser on your mobile device ? y
Do you have any experience using Python ? n
Do you have any experience using PHP ? n
Do you have any experience using JavaScript ? n
Do you need AI ? y
You can use Bootstrap for FrontEnd and for the BackEnd you can
use Ruby on Rails with the librarys openNLP, tts and ruby_fan for the AI
or you can use Kotlin with the librarys SimpleDDN, Kotlin_Statisticswith,
Apacha Jena, Tweety, Neuroph and weka for the AI
Press any key to continue . . .
```

### 4.2.3 Web:



```
C:\Users\ASUS\AppData\Local\Programs\Python\Python38-32\python.exe
Do you want to make an Application ? n
Do you want to make it a Website ? y
Do you have any experince in web development ? y
Is it an active website (like buying things from it) ? n
Do you have any experience using JavaScript ? n
Do you have any experience using Python ?y
Would you need AI ? y
You can use Boostrap for the FrontEnd and Django for the BackEnd with
Caffe, Caffe2, OpenCV, Keras and NeuroLab librarys for the AI
Press any key to continue . . .
```

### 4.2.4 Video game:



```
C:\Users\ASUS\AppData\Local\Programs\Python\Python38-32\python.exe
Do you want to make an Application ? n
Do you want to make it a Website ? n
Do you want to make a video game ? y
Do you any experience with making video games ? y
Do you have a moderate hardware ? y
Have you deal with Unity ? n
Have you deal with Unreal ? y
Do you have any experience making 3D objects ? n
Do you any programming experience ? n
Is it for mobile ? y
you can use Unreal engine using Blueprint Visual Scripting system to build your game
then for 3D objects you can download them from any website like:
www.cgtrader.com www.free3d.com you should download Low-poly to make
the graphics flexible for rendering on the mobile
Press any key to continue . . .
```

## Conclusion and Future Works

Software projects consultant developed in a flexible way that accept any new rules or changed rules, that help giving the system more information to grow with that large number of frameworks and IDEs.

# Difficulties

Each expert prefers to work in different ways on even its not the best, also lack of face-to-face experts and lack of communicating online ones can be an obstacle.

Big searching process to build good knowledge form software vast field.

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# References

## Online Resources:

<https://www.ideamotive.co/blog/best-frontend-frameworks>

<https://www.mobiloud.com/blog/native-web-or-hybrid-apps>

<https://martech.org/100-questions-you-must-ask-when-developing-web-site/>

<https://stackoverflow.com/>