



# naviga**SU**

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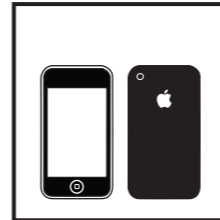
a VA 401 & 402 project by yaman terzioglu

# I.

## Overview

### Project Definition:

An Iphone OS Application for Sabanci University Community for navigation and information purposes.



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### The Problem:

As a senior, I remember the days of being a freshman here and the confusion due to the huge campus. I kept asking for directions and it took some time to familiarize with the campus.

Another problem was to find new places and learn about them. Eventhough one is introduced to faculties and programs, there is a need for a brief information about each building and its components.

As years past, I became familiar with the campus and learned many details about it. Meanwhile, new people came and every year at least 6-7 people asked for directions during the first week of the term. This project was derived from this problem. As a member of this community, I wanted to help solving this problem.

### The Solution:

With the introduction of iPhones and other Apple Inc. devices, the lives of the users of such devices changed drastically. It became a device, which could do everything within the coding dimension and imagination. With vast examples that are being introduced via the App Store each day, I was encouraged to explore this realm. After some thought, the fact that the owner carries this device around him or her all the time became a perfect solution for the problem of mobility. That is why I decided to develop this tool as an application for iPhones and other OSX devices.

This application will enable the users to navigate, interact, and learn about what's going on within the Sabancı University Campus.

### The Aim

The aim of this project is to create an interactive 3D environment of the Sabancı University Campus which enables users to navigate as an "eye in the sky. Because the main aim of the project is access to information, the users are able to access information about each buliding and it's infrastructure with a touch on a specific building. Users navigate via buttons inside that building's information structure/ environment with unique movements.

### Unity 3D

Unity 3D is a realtime gaming engine which lets users to create unique environments in 3D. It's use was essential for 4 parts of the project.

#### The 3D Aspect:

As stated earlier,a 3D environment of the campus and the ability to see it from different view speeds up the familiarization processand creates an interactive environment.

#### Realtime Aspect:

There are many rendering tools around the market but the reason I use a gaming engine, the Unity 3D engine is that it enables realtime rendering; meaning that manipulation to a scene is instant and "realtime".

#### Development Variety Aspect:

Unity enables development for iPhone, iPad, Android, iOS, Windows, PS3, Xbox 360 and Wii. Also it lets developers to export scenes from Maya.

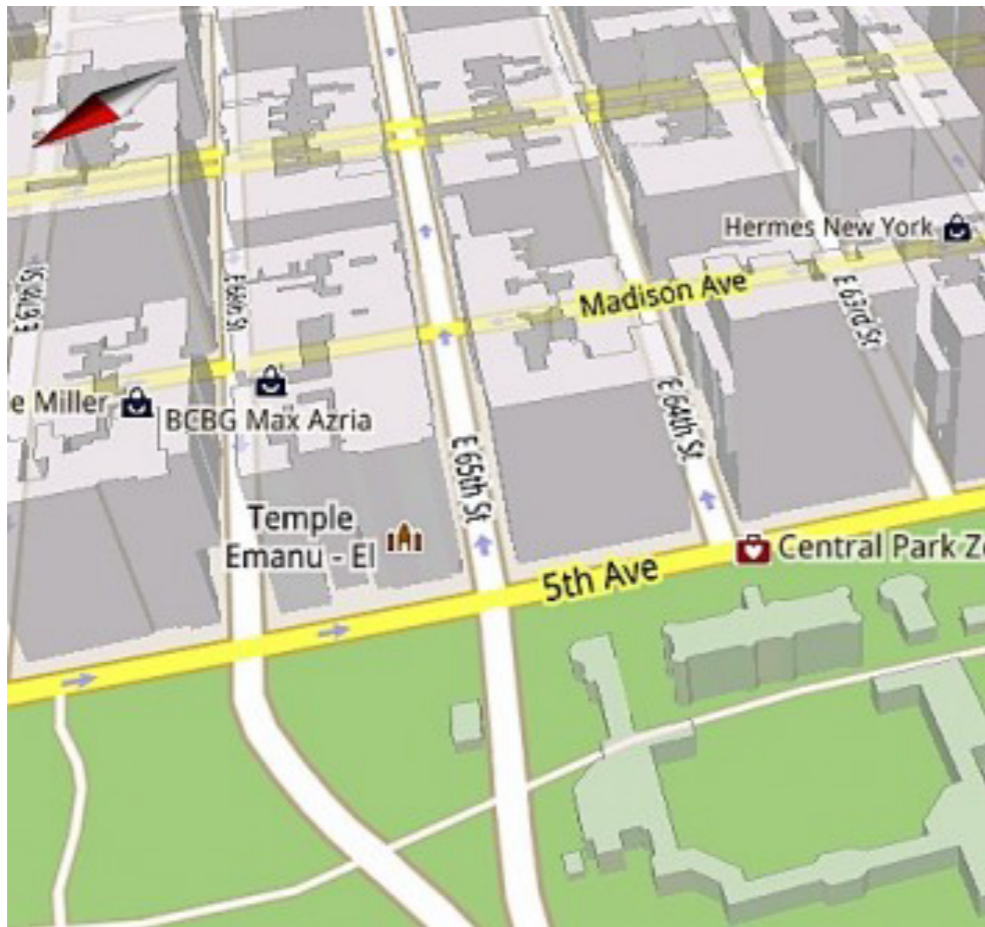
#### Interactivity Aspect:

Unity's work principle is very advanced. As it's name indicates, it enables the use of Javascript and C# together. One can write a script and drag it as a component to a geometrical object, transforming it into a button.

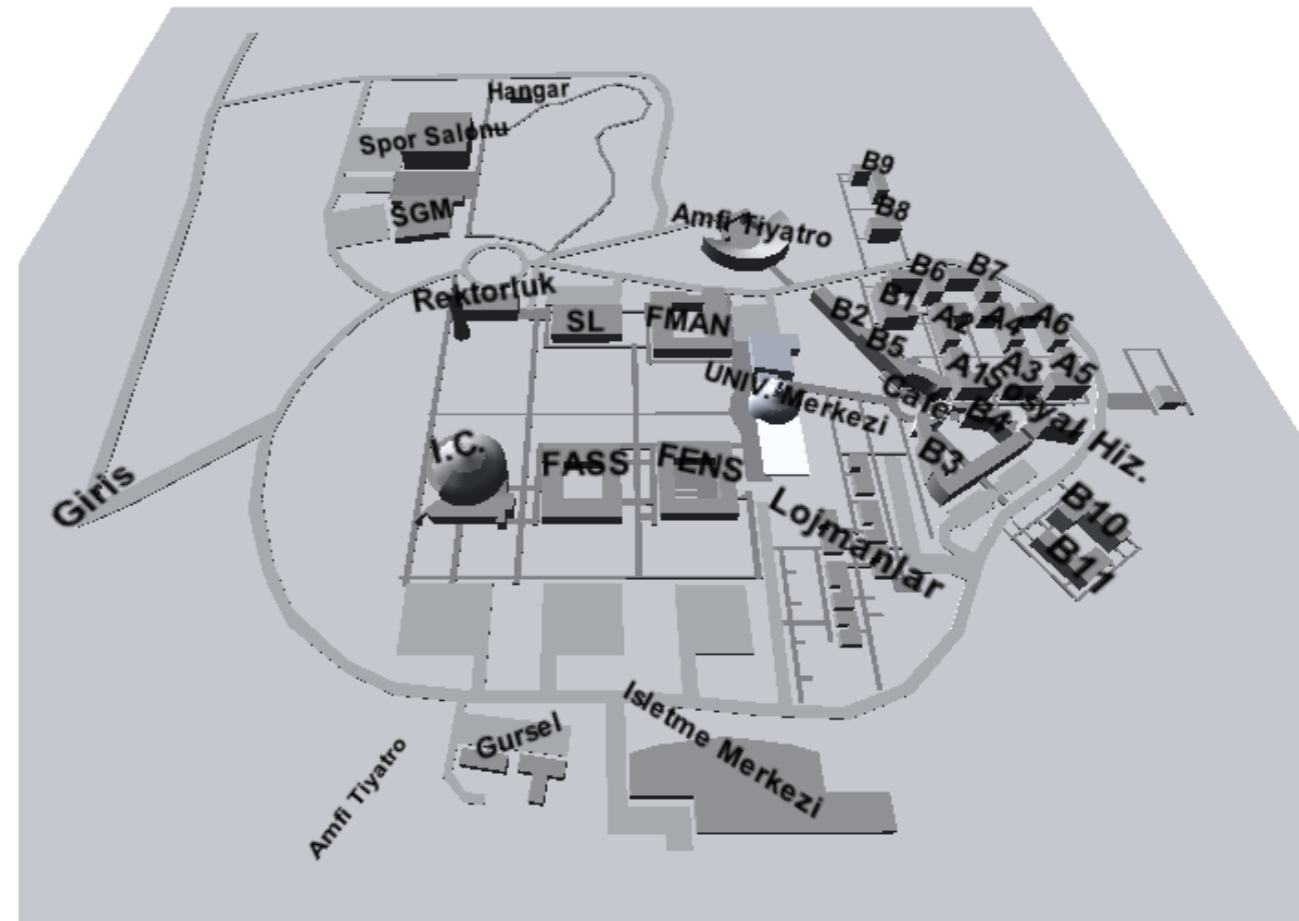
# Overview

Case: Google Maps 5 vs. NSU

# 03



The approach Google Earth uses in 3D modelling of New York City.



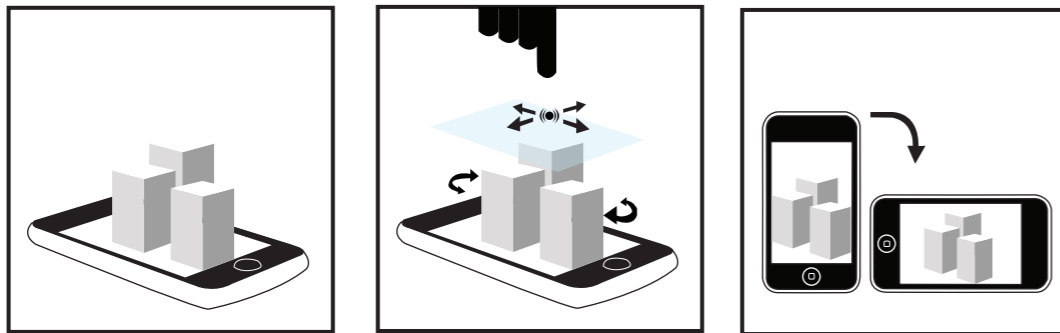
The approach I used in 3D modelling of Sabanci University Campus.



### 3D Modelling & Free Camera Rotation

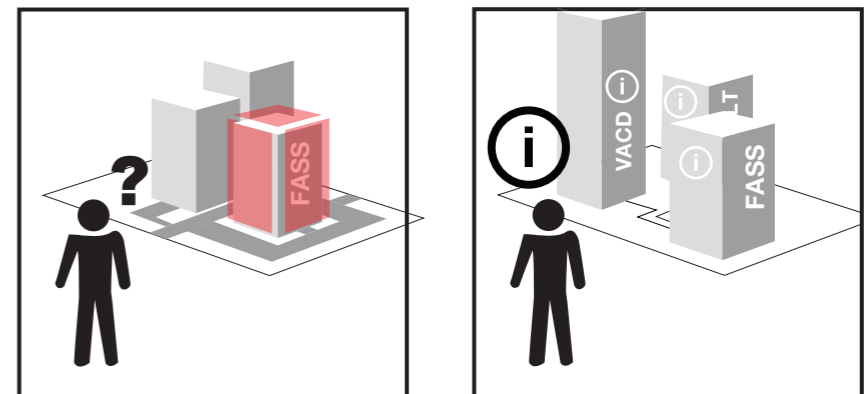
The visualization is an important aspect of a navigation tool. A clean, sharp interface is essential for simplicity and easy path finding.

To supply this demand, rendering the whole campus buildings and area in 3D is an efficient way. The free camera rotation speeds up the orientation process, helping the users to create an image of the campus in 3 Dimensional Space. It will only work in Landscape position.

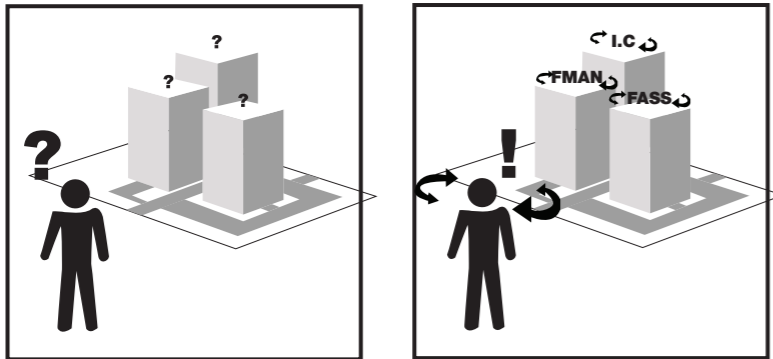


### Information Environment

Information Environment is the key aspect of the application. Users are to enter unique environments designed specifically for each building and reach information about that building. After a brief info about that building users can navigate within the realm via buttons which lead to the subsections of that building.

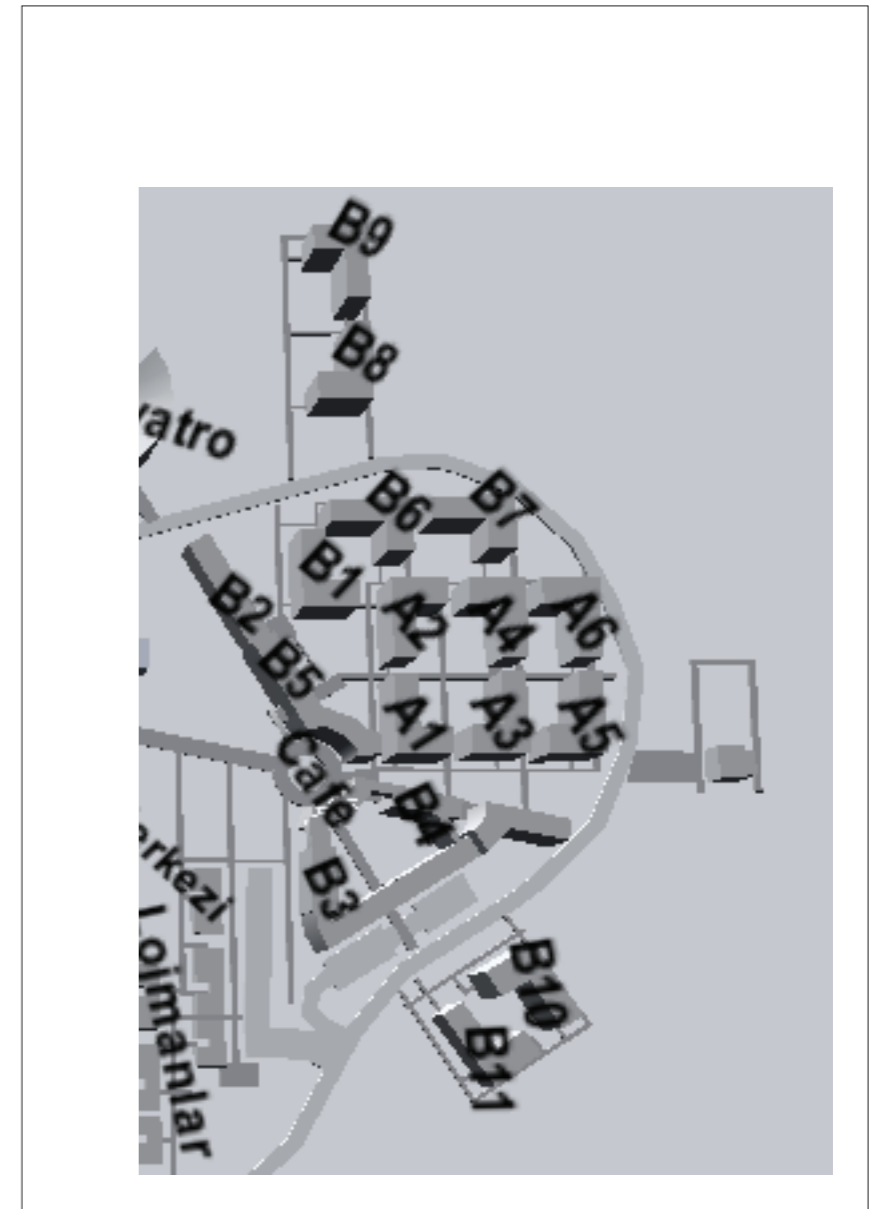


## Identification



Identifications or tags for buildings boost up the readability and the orientation process. These IDs, which appear on the map screen, always look at the camera and alter their positions and rotations according to the point of view.

The identifiers for each building in dormitories, facing the camera for easy readability.



## Scene Options

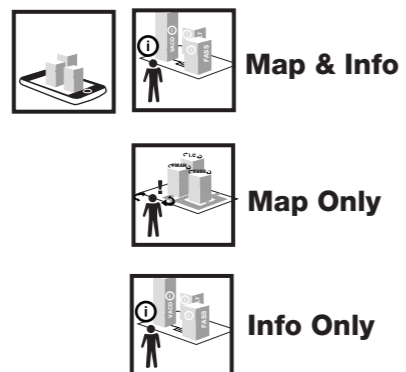
There are 3 types of scenes which are accesable through the main screen.

**Map Only:** This scene will contain only the map of the campus. Each color assigned to buildings, roads and text will be changeable, up for the users' taste.

**Map & Information:** Users will be able to access info environment through touching buildings.

**Info Only:** Different scene where buildings will be rendered from the side. Will go to info environment when specific building is touched.

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## Improvements:

**Interiors:** Interiors could be introduced to buildings, with fully interactable and wanderable.

**Pathfinding:** Shortest path between current loaction and the target building could be calculated.

**Markers:** Markers on every building's entrance will enable users to locate their current location and reach into the Bulletin Board.

**Bullettin Board:** Will be accessible through the markers, specific for each building or area.

