NATIONAL UNIVERSITY OF HO CHI MINH CITY
UNIVERSITY OF SCIENCE

Faculty of Information Technology – Major in Computer Vision

PROJECT 2

WRITING AN ADD-IN FOR AUTOCAD

GROUP 2
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I. Group Information

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II. Introduction

This is a plug-in of AutoCAD software that supports users to import .skp files (SketchUp software) into AutoCAD. This project we did while studying Applied Graphics course at VNUHCM-University of Science. The project is written in C# language on Visual Studio 2019 and AutoCAD 2020 software. We decode the .skp file from binary to the necessary information and program the command to ask AutoCad to perform the redraw. The project stops at the basic geometry level.

III. Instructions for Setting Up AutoCAD Projects on Visual Studio

There are 2 ways to create an Add-in programming project for AutoCAD. Method 1 we use directly to install AutoCAD programming support available on Visual Studio. Method 2 will be more complicated, but it is the foundation for plug-in programming for other software.

Step 1:

Create a "New Project" using "Class Library". Choosing library .Net Framework (newest).

Step 2:

Insert API library of AutoCAD into Visual Studio. Change "Copy local" into "False".

Step 3:

Change name of Visual's default class (Pressing "Yes" if asked)

Add the initial code as following:

- Insert reference library (using keyword)

```
using Autodesk.AutoCAD.ApplicationServices;
using Autodesk.AutoCAD.DatabaseServices;
using Autodesk.AutoCAD.EditorInput;
using Autodesk.AutoCAD.Geometry;
using Autodesk.AutoCAD.Runtime;
using AcAp = Autodesk.AutoCAD.ApplicationServices.Application;
```

- Create Test method

```csharp
public class Commands
    {
        [CommandMethod("TEST")]

        public void Test()
        {
            var doc = AcAp.DocumentManager.MdiActiveDocument;
            var db = doc.Database;
            var ed = doc.Editor;
            using (var tr = db.TransactionManager.StartTransaction())
            {
                tr.Commit();
            }
        }
    }
```

Step 4:

Create a script to load the application when starting AutoCAD

- Create a file of type Text File named "start.scr"
- Insert the following line of code into the file "start.scr" and save it:

netload "<name of project>.dll"

- In the Properties section of the "start.scr" file, change the "Copy in the Output Directory" property to "Always Copy"

Step 5:

Change the MSBuild file (.csproj) to run AutoCAd in Debug mode

- Find the .csproj file of the current project and open it with notepad
- Insert the following line of code in the PropertyGroup section (2nd - the Debug section). Change the AutoCAD path if necessary

```xml
<StartAction>Program</StartAction>
<StartProgram>C:\Program Files\Autodesk\AutoCAD 2021\acad.exe</StartProgram>
<StartArguments>/nlogo /b "start.scr"</StartArguments>
```

- The entire PropertyGroup node will look like this:

```xml
<PropertyGroup Condition=" '$(Configuration)|$(Platform)' == 'Debug|AnyCPU' ">
    <DebugSymbols>true</DebugSymbols>
    <DebugType>full</DebugType>
    <Optimize>false</Optimize>
    <OutputPath>bin\Debug\</OutputPath>
    <DefineConstants>DEBUG;TRACE</DefineConstants>
    <ErrorReport>prompt</ErrorReport>
    <WarningLevel>4</WarningLevel>
```

```
    <StartAction>Program</StartAction>
    <StartProgram>C:\Program Files\Autodesk\AutoCAD 2021\acad.exe</StartProgram>
    <StartArguments>/nlogo /b "start.scr"</StartArguments>
  </PropertyGroup>
```

- In the ItemGroup node you may need to change the path of the reference files (if necessary)

```
<Reference Include="accoremgd">
    <HintPath>..\..\..\..\..\..\..\..\Program Files\Autodesk\AutoCAD
2021\accoremgd.dll</HintPath>
    <Private>False</Private>
  </Reference>
  <Reference Include="acdbmgd">
    <HintPath>..\..\..\..\..\..\..\..\Program Files\Autodesk\AutoCAD
2021\acdbmgd.dll</HintPath>
    <Private>False</Private>
  </Reference>
  <Reference Include="acmgd">
    <HintPath>..\..\..\..\..\..\..\..\Program Files\Autodesk\AutoCAD 2021\acmgd.dll</HintPath>
    <Private>False</Private>
  </Reference>
```

- Save this file again. The above changes will appear in Visual Studio. The Debug tab of the Properties panel

Step 6:

Export template

- Với With AutoCAD 2016 and later, the "LEGACYCODESEARCH" variable value must be changed to 1 (done in AutoCAD software)
- Open the project in Visual Studio and try debugging (F5)
- Go to menu Project -> Export Template
- Select Project Template -> Continue
- Enter the parameters then finish

IV. Reference

[1] eRSVN