Ministerul Educaţiei al Republicii Moldova

Universitatea Tehnică a Moldovei

Catedra Tehnologii Informaționale

RAPORT

Lucrarea de laborator nr.5

la MIDPS

A efectuat: st.gr. TI -143

Gaina Cristin

A verificat: lect.sup.

Cojocaru S

Chişinău 2016

Dezvoltarea unei aplicatii mobile

- **Visual Studio**
- **Xcode**
- **Android Studio**
- Eclipse
- NetBeans

Prerequisites:

- IDEs: Visual Studio, Xcode, Android Studio, Eclipse, NetBeans
- Limbaje de programare: C#, JavaScript, Objective C, Java, Swift
- Tehnologii si Frameworks: Windows Mobile, iOS, Android

Obiective:

- Cunostinte de baza privina arhitectura unei aplicatii mobile
- Cunostinte de baza ale platformei SDK

Conditii Generale:

Se considera ca ai trecut cu succes laboratorul daca ai urmat toti pasii din:

1. Submission Process
2. Trebuie sa elaborezi un program prototip care il vei arata in timpul laboratorului
3. Ai respectat DL (data limita)

Technical Prerequisites:

- Your application must be developed and tested in SDK included Emulator.
- You probably would like to run your application on real device.
- Your application must support multiple screen resolutions.

Laboratory Requirements:

- *Basic Level* (nota 5 || 6) :
    - Realizeaza o aplicatie simpla "Hello world" care va contine 2 butoane care vor afisa 2 pagini diferite, folosing 2 elemente diferite de interactiune

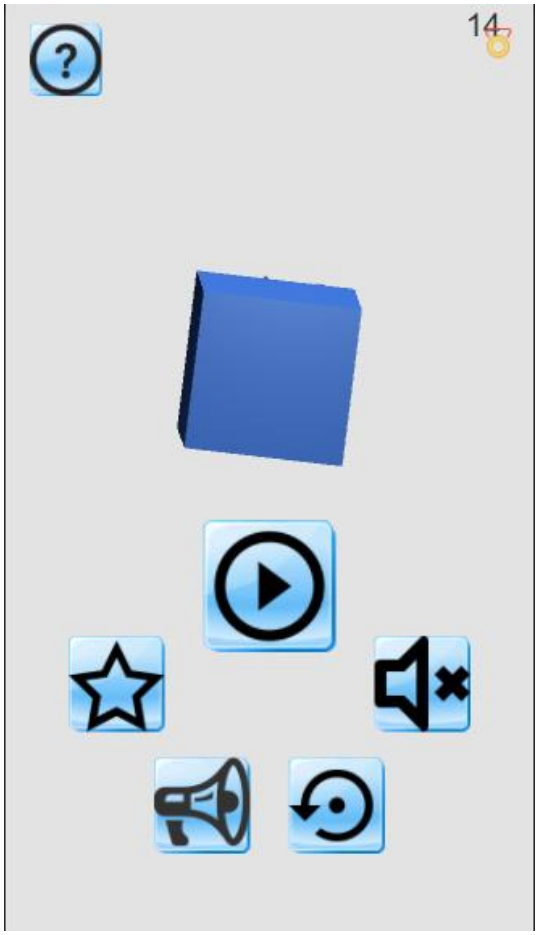
- *Normal Level* (nota 7 || 8):
    - Implimenteaza un simplu ceas sau stopwatch
- *Advanced Level* (nota 9 || 10):
    - Realizeaza o aplicatie care va implimenta tehnica *Pomodoro* **SAU**
    - O alta aplicatie sofisticata la alegere
        - Game
- *Bonus Point*
    - Foloseste libraria cross platform pentru a realiza o apliacatie cross platform (aplicatia poate fi compilata atit pe Android, cit si pe iOS)
    - Folosirea Facebook/Twitter/Google Maps API

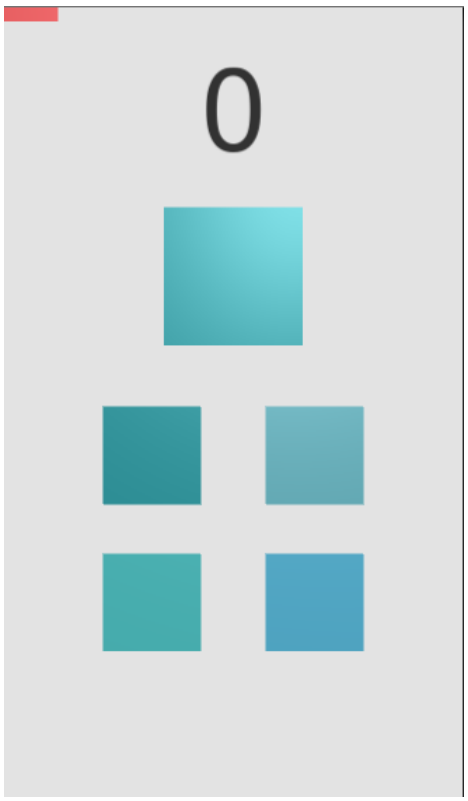
Note: Alege si implimenteaza un singur nivel.

Crearea unui joc(aplicatie) care ruleaza pe Android si IOS:

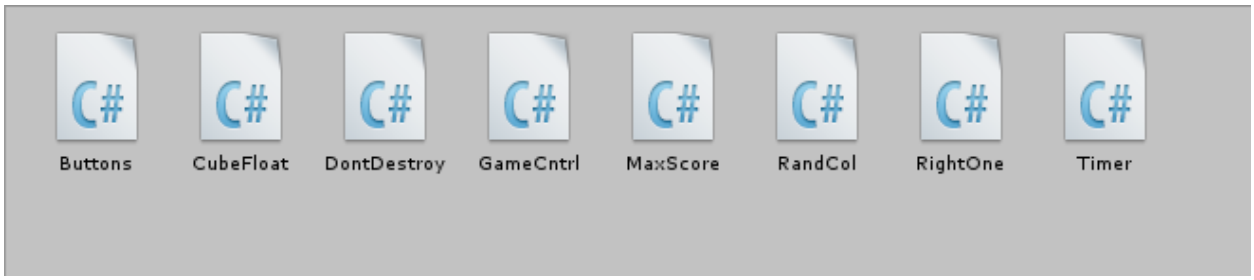
Game:(Square Colors)

Meniul principal





Pentru crearea aplicatiei am folosi scripturile care le-am creat in C#:



Codul care ne piermite utilizarea butoanelor:

```
using UnityEngine;
using System.Collections;

public class Buttons : MonoBehaviour {
    public GameObject m_on, m_off;

    public Sprite layer_blue, layer_red;

    void Start()
    {
        if (gameObject.name == "Music")
        {
            if (PlayerPrefs.GetString("Music") == "no")
            {
                m_on.SetActive(false);
                m_off.SetActive(true);
            }
            else {
                m_on.SetActive(true);
                m_off.SetActive(false);
            }
        }
    }
```

```
        void OnMouseDown () {
            GetComponent<SpriteRenderer>().sprite = layer_red;


        }

        void OnMouseUp (){
            GetComponent<SpriteRenderer>().sprite = layer_blue;
        }
        void OnMouseUpAsButton()  {
        if (PlayerPrefs.GetString("Music") != "no")
           GameObject.Find("Click Audio"). GetComponent<AudioSource>().Play();
            switch (gameObject.name) {
                case "Play":
                    Application.LoadLevel("play");

                    break;
                case "Rating":
                    Application.OpenURL("http://google.com");
                    break;
                case "Replay":
                    Application.LoadLevel("play");
                    break;
                case "Home":
                    Application.LoadLevel("main");
                    break;
                case "Facebook":
                    Application.OpenURL("http://facebook.com");
                    break;
                case "How To":
                    Application.LoadLevel("howTo");
                    break;
                case "Close":
                    Application.LoadLevel("main");
                    break;
                case "Music":
                    if (PlayerPrefs.GetString("Music") != "no")
                    {
                        PlayerPrefs.SetString("Music", "no");
                        m_on.SetActive(false);
                        m_off.SetActive(true);
                    }
                    else
                    {
                        PlayerPrefs.SetString("Music", "yes");
                        m_on.SetActive(true);
                        m_off.SetActive(false);
                    }
                    break;



            }

        }

    }
```

Game Controlerul:

```
using UnityEngine;
using UnityEngine.UI;
```

```
using System.Collections;

public class GameCntrl : MonoBehaviour
{
    public GameObject pLost;

    public GameObject colBlock;
    public Vector3[] positions;
    private GameObject block;
    private GameObject[] blocks = new GameObject[4];

    private int rand, count;
    private float rCol, gCol, bCol;
    public Text score;
    private static Color aColor;

    [HideInInspector]
    public bool next, lose;

    void Start()
    {
        count = 0;
        next = false;
        lose = false;
        rand = Random.Range(0, positions.Length);
        for (int i = 0; i < positions.Length; i++)
        {
            blocks[i] = Instantiate(colBlock, positions[i], Quaternion.identity) as
GameObject;
            if (rand == i)
                block = blocks[i];
        }
        block.GetComponent<RandCol>().right = true;
    }

    void Update()
    {
        if (lose)
            playerLose();
        if (next && !lose)
            nextColors();
    }

    void nextColors()
    {
        if (PlayerPrefs.GetString("Music") != "no")
            GetComponent<AudioSource>().Play();
        count++;
        score.text = count.ToString();
        aColor = new Vector4(Random.Range(0.1f, 1f), Random.Range(0.1f, 1f),
Random.Range(0.1f, 1f), 1);
        GetComponent<Renderer>().material.color = aColor;
        next = false;

        if (count < 3)
        {
            rCol = 0.2f;
            gCol = 0.2f;
            bCol = 0.2f;
        }
        else if (count >= 3 && count < 5)
        {
            rCol = 0.1f;
            gCol = 0.1f;
            bCol = 0f;
```

```
        }
        else if (count >= 5)
        {
            rCol = 0f;
            gCol = 0f;
            bCol = 0.05f;
        }

        // New colors for blocks
        rand = Random.Range(0, positions.Length);
        for (int i = 0; i < positions.Length; i++)
        {
            if (i == rand)
                blocks[i].GetComponent<Renderer>().material.color = aColor;
            else {
                float r = aColor.r + Random.Range(0.1f, rCol) > 1f ? 1f : aColor.r +
Random.Range(0.1f, rCol);
                float g = aColor.g + Random.Range(0.1f, gCol) > 1f ? 1f : aColor.g +
Random.Range(0.1f, gCol);
                float b = aColor.b + Random.Range(0.1f, bCol) > 1f ? 1f : aColor.b +
Random.Range(0.1f, bCol);
                blocks[i].GetComponent<Renderer>().material.color = new Vector4(r, g, b,
aColor.a);
            }
        }
    }

    void playerLose()
    {
        if(PlayerPrefs.GetInt("Score") < count)
            PlayerPrefs.SetInt("Score", count);
          pLost.SetActive(true);
        if (PlayerPrefs.GetString("Music") == "no")
            pLost.GetComponent<AudioSource>().mute = true;
    }
}
```

Concluzie

In aceasta lucrare de laborator am obtinut cunostintele necesare in mediul de dezvoltare Unity in limbajul C#. In mediul de dezvlotare Unity noi putem crea aplicatii p/u Android, IOS, Windows cit si pe alte platforme. Odata ce am scris codul noi il putem converti atit p/u Android cit si IOS acesta ar fi un avantaj spre deosebire de Android Studio.