



**Universitatea Tehnică a Moldovei**  
**Facultatea de Calculatoare, Informatică și Microelectronică**  
**Filiera Anglofonă „Computer Science”**

**Aplicații Windows**  
**Raport pentru Laboratorul #1**

**Windows Applications**  
**Laboratory Work #1 Report**

**Student:**

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**Chișinău 2013**

## Introduction

Here you have to describe what you did in this laboratory work, and why it is important. This template has some predefined styles (if you are using MS Office Word) that you can find under Home-Styles box. Mainly your laboratory work should include:

- Introduction;
- Theoretical aspects of laboratory work;
- Implementation description;
- Conclusions;
- Bibliography;
- Appendices.

It is very handy to use MS Office Word references as you can use them and to not bother about their order. There are few types of references, but basically you'll use citations and cross-references to tables and figures.

Your application source code should be mainly in appendixes. In case that you need to give reference about one or few lines, you can add it directly after the paragraph in which you are giving reference.

Conclusion should have at least 1/3 of a page. If it is smaller than it means that you didn't get minimum necessary knowledge from the given laboratory work and you have to review available materials and tasks.

How to submit your report you can find on Submission Process page [1]. You will get your mark for laboratory work based on Grading Policy [2]. More details about anything are on course wiki page [3].

All the text provided in next chapters is dummy text. I added it to show an example of how you have to style your report. In case that you are interested in text origin you can search more for *Lorem Ipsum* by googling.

## 1 Description and Analysis of the Domain

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### 1.1 About Windows

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## **1.2 Windows Handlers**

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### **1.2.1 Good Windows Handlers**

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### **1.2.2 Bad Windows Handlers**

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## 2 Implementation

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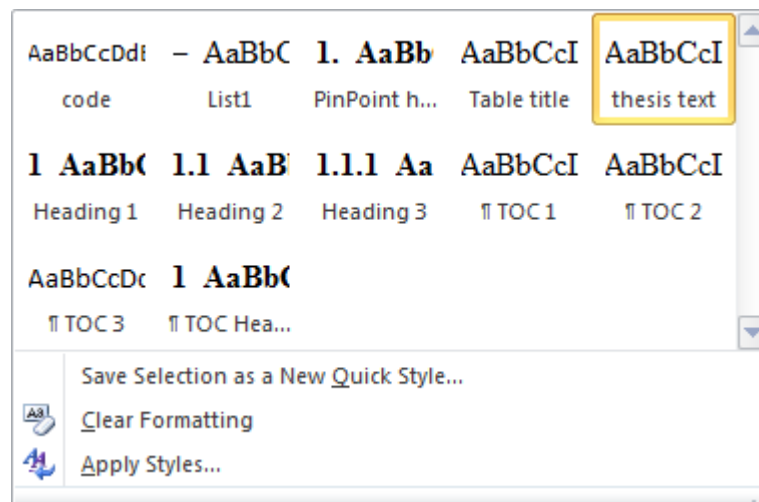


Figure 2.1 – Home Styles

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Today both server-side and client-side processing exist and evolve as these are two different solutions for different tasks, and depending on problem you can determine which one fits you better.

Table 1.1 Comparison between client-side and server-side processing

| Feature   | Client-side | Server-side |
|---|-------------|-------------|
| Immediate response time                                     | +           | -           |
| Requires permanent internet connection                      | +           | -           |
| Reliance on user hardware and software                      | -           | +           |
| Affected by the processing speed of the user's computer     | -           | +           |
| System core developed just for one OS and specific software | -           | +           |
| Processing the same information just once (using caching)   | -           | +           |
| Instant system and data update                              | -           | +           |
| Personal information is more secure                         | +           | -           |
| Corporate information is more secure                        | -           | +           |
| Data safeness in case of user's computer data loss          | -           | +           |

In Table 1.1 are represented just few aspects of server-side versus client-side processing. Second and third columns are filled with pluses in minuses – pluses are assigned to those points in which one technology fits better for different problems. Digital maps may be categorized as follows:

- a) Using GPS navigators
  - 1) With static data
  - 2) With collecting and periodically updating data
- b) Using online maps
  - 1) Global online maps
  - 2) Local online maps

GPS navigators with static data have built in almost all the places from city, but no information about public transportation or at least how to build routes using public transport. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec quam felis, ultricies nec, pellentesque eu, pretium quis, sem.

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### 3 Future Plans

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## **Conclusions**

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## References

- [1] bumbu. WP Submission Process. GitHub wiki. <https://github.com/TUM-FAF/WP/wiki/Submission-Process>
- [2] bumbu. WP Grading Policy. GitHub wiki. <https://github.com/TUM-FAF/WP/wiki/Grading-Policy>
- [3] bumbu. WP Wiki. GitHub wiki. <https://github.com/TUM-FAF/WP/wiki>

## Appendix A

### Application Source Code

```
#include <windows.h>

/* Declare Windows procedure */
LRESULT CALLBACK WindowProcedure (HWND, UINT, WPARAM, LPARAM);

/* Make the class name into a global variable */
char szClassName[ ] = "CodeBlocksWindowsApp";

int WINAPI WinMain (HINSTANCE hThisInstance, HINSTANCE hPrevInstance, LPSTR
lpzArgument, int nCmdShow){
    HWND hwnd;           /* This is the handle for our window */
    MSG messages;        /* Here messages to the application are saved */
    WNDCLASSEX wincl;    /* Data structure for the windowclass */

    /* The Window structure */
    wincl.hInstance = hThisInstance;
    wincl.lpszClassName = szClassName;
    wincl.lpfnWndProc = WindowProcedure;      /* This function is called by windows */
    wincl.style = CS_DBLCLKS;                 /* Catch double-clicks */
    wincl.cbSize = sizeof (WNDCLASSEX);

    /* Use default icon and mouse-pointer */
    wincl.hIcon = LoadIcon (NULL, IDI_APPLICATION);
    wincl.hIconSm = LoadIcon (NULL, IDI_APPLICATION);
    wincl.hCursor = LoadCursor (NULL, IDC_ARROW);
    wincl.lpszMenuName = NULL;                /* No menu */
    wincl.cbClsExtra = 0;                     /* No extra bytes after the window class */
    wincl.cbWndExtra = 0;                     /* structure or the window instance */
    /* Use Windows's default colour as the background of the window */
    wincl.hbrBackground = (HBRUSH) COLOR_BACKGROUND;

    /* Register the window class, and if it fails quit the program */
    if (!RegisterClassEx (&wincl))
        return 0;

    /* The class is registered, let's create the program */
    hwnd = CreateWindowEx (
        0,                          /* Extended possibilites for variation */
        szClassName,                /* Classname */
        "WP Lab#1 example",         /* Title Text */
        WS_OVERLAPPEDWINDOW,        /* default window */
        CW_USEDEFAULT,               /* Windows decides the position */
        CW_USEDEFAULT,               /* where the window ends up on the screen */
        544,                         /* The programs width */
        375,                         /* and height in pixels */
        HWND_DESKTOP,               /* The window is a child-window to desktop */
        NULL,                        /* No menu */
        hThisInstance,              /* Program Instance handler */
        NULL                         /* No Window Creation data */
    );

    /* Make the window visible on the screen */
    ShowWindow (hwnd, nCmdShow);

    /* Run the message loop. It will run until GetMessage() returns 0 */
    while (GetMessage (&messages, NULL, 0, 0)){
        /* Translate virtual-key messages into character messages */
```

```

    TranslateMessage(&messages);
    /* Send message to WindowProcedure */
    DispatchMessage(&messages);
}

/* The program return-value is 0 - The value that PostQuitMessage() gave */
return messages.wParam;
}

/* This function is called by the Windows function DispatchMessage() */

LRESULT CALLBACK WindowProcedure (HWND hwnd, UINT message, WPARAM wParam, LPARAM
lParam) {
    switch (message) {
        /* handle the messages */
        case WM_DESTROY:
            PostQuitMessage (0); /* send a WM_QUIT to the message queue */
            break;
        default:
            /* for messages that we don't deal with */
            return DefWindowProc (hwnd, message, wParam, lParam);
    }

    return 0;
}

```