### Министерство науки и высшего образования Российской Федерации

Федеральное государственное автономное образовательное учреждение высшего образования Национальный исследовательский Нижегородский государственный университет им. Н.И. Лобачевского

Институт информационных технологий, математики и механики

# Отчет по практическому заданию №5

# «Инструменты разработки мобильных приложений»

Выполнил:

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# Оглавление

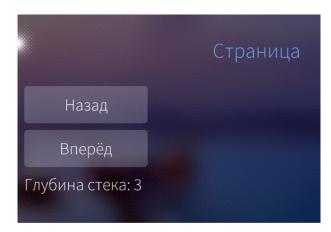
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# Цель задачи

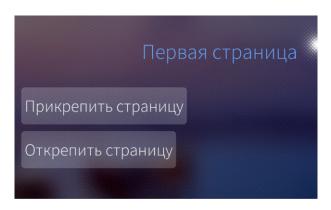
В данном лабораторной работе требуется научиться организовывать многостраничное приложение, использовать контейнеры Silica, вытягиваемые меню и обложку приложения.

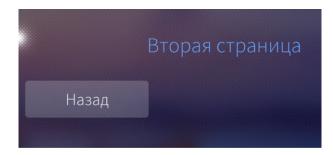
# Постановка задачи

1. Создать приложение, которое будет отображать страницу с двумя кнопками "Назад" и "Вперёд". Первая удалит текущую страницу со стека, вторая добавит новую. Также на экране нужно отображать текущую глубину стека.



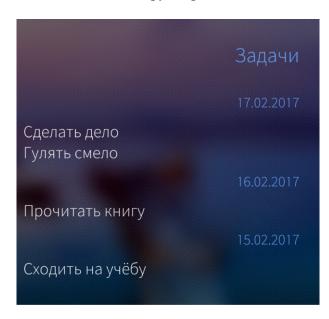
2. Создать приложение из двух страниц. Первая страница содержит две кнопки "Добавить страницу" и "Убрать страницу". Первая кнопка добавит вторую страницу как прикреплённую, вторая кнопка её удалит. На второй странице должна быть кнопка для возврата на первую страницу без закрытия второй.





- 3. Создать приложение с одной кнопкой и текстовом поле. После нажатия на кнопку отображается диалог для ввода текста. После согласия с результатом введённый текст отображается в текстовое поле.
- 4. Создать приложение с одной кнопкой и текстовым полем. После нажатия на кнопку отображается диалог для выбора даты. После согласия с результатом ввода выбранная дата отображается в текстовое поле.

- 5. Создать приложение с одной кнопкой и текстовым полем. После нажатия на кнопку отображается диалог для выбора времени. После согласия с результатом ввода выбранное время отображается в текстовом поле.
- 6. Создать приложение со списком **SilicaListView**, из задач на неделю. Задачи должны содержать дату и описание. В списке задачи группировать по датам.



- 7. Создать приложение с SilicaWebView для доступа к вашему любимому сайту.
- 8. Использовать **SlideshowView** для просмотра и перелистывания задач на неделю. На одном слайде одна задача.
- 9. Создать приложение с вытягиваемыми меню сверху и снизу и текстовым полем. После выбора какого-либо элемента меню, его название отобразить в текстовом поле.
- 10. Создать приложение со списком и контекстным меню. После выбора элемента контекстного меню отобразить в консоли название выбранного элемента меню и индекс элемента списка.
- 11. Создать приложение с обложной-счётчиком. На обложке отобразить текущий счёт и две кнопки для добавления единицы к счёту и для сброса счётчика.

# Описание программной реализации

### 1. Добавление страниц и отображение глубины стека

Глубина стека отображается в **Label** используя pageStack.depth для получения значения. pageStack.push(Qt.resolvedUrl("Page2.qml")) создает новую страницу, pageStack.pop() удаляет страницу из стека.

### 2. Прикрепленные страницы

*pageStack.pushAttached(Qt.resolvedUrl("Page2.qml"))* прикрепляет страницу, pageStack.popAttached() – открепляет.

### 3. Диалог для ввода текста

Чтобы измененять ввод в **TextField**, в **Dialog** используем *onAccepted: field.text = firstTextFieldValue*.

### 4. Диалог с календарем

Чтобы измененять ввод в **TextField**, в **Dialog** используем **DatePickerDialog** с *onAccepted: field.text = date.toDateString()*.

### 5. Диалог с часами

**TimePickerDialog** c onAccepted: field.text = time.toTimeString().

#### 6. Список задач

Используем SilicaListView с ListModel.

### 7. Браузер

Используем SilicaWebView со свойством url.

### 8. Слайд-шоу

Используем SlideshowView с ListModel.

### 9. Вытягиваемые меню

Используем SilicaListView с PullDownMenu.

### 10. Список с контекстным меню

Используем SilicaListView с ContextMenu.

### 11. Обложка приложения

Используем CoverActionList с CoverAction.

# Руководство пользователя

В первом задании пользователю отображается глубина стека.



Рис. 1: Глубина стека на первой странице



Рис. 2: Глубина стека на второй странице

Во втором задании при нажатии на кнопку прикрепить появляется индикатор перехода на следующую страницу.



Рис. 3: Прикрепление страницы

В третьем задании ввод в текстовом поле управляется диалогом.



Рис. 4: Текстовое поле

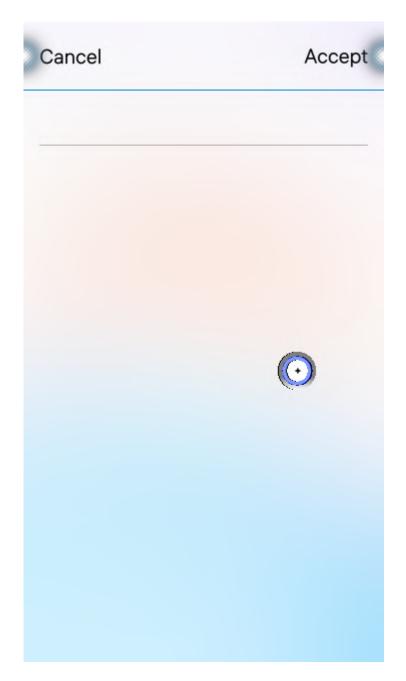


Рис. 5: Диалог ввода текста

В четвертом задании ввод в текстовом поле управляется диалогом выбора даты.

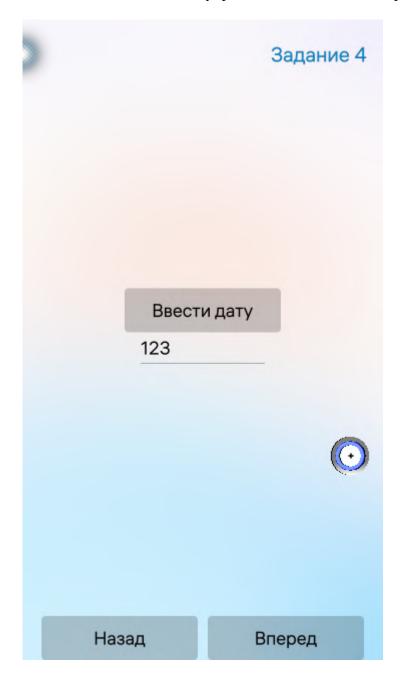


Рис. 6: Текстовое поле

Cancel						Accept		
1 September 2024								
Mon	Tue	Wed	Thu	Fri	Sat	Sun		
26	27	28	29	30	31	1		
2	3	4	5	6	7	8		
9	10	11	12	13	14	15		
16	17	18	19	20	21	22		
23	24	25	26	27	28	29		
30	1	2	3	4	5	6		

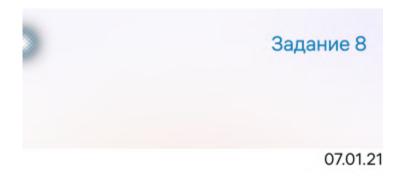
Рис. 7: Диалог ввода даты

В седьмом задании на странице находится браузер.



Рис. 8: Браузер

В восьмом задании список дел отображается как слайд-шоу.



# Помыть посуду



Рис. 9: Слайд-шоу

В девятом задании есть два вытягиваемых меню.



Рис. 10: Вытягиваемые меню

В десятом задании на элементах списка открывается контекстное меню.

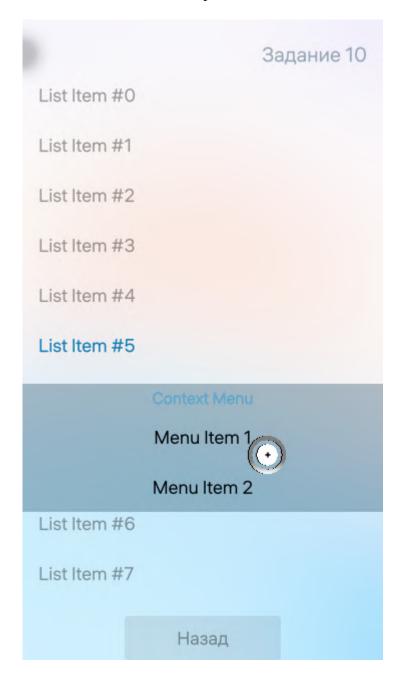


Рис. 11: Контекстное меню

На обложке приложения находится рабочий счетчик.



Рис. 12: Обложка

# Заключение

В процессе выполнения данной лабораторной работы мы научились организовывать многостраничное приложение, использовать контейнеры Silica, вытягиваемые меню и обложку приложения.

# Приложение

## Task1-1.qml

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*******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
```

```
PageHeader {
        objectName: "pageHeader"
        title: qsTr("Страница 1")
    }
    Column {
        anchors.horizontalCenter: parent.horizontalCenter
        anchors.centerIn: parent
        spacing: 20
        Button {
            text: "Вперед"
            onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Page%1.qml").arg((pageStack)
        }
        Label {
            text: qsTr("Глубина стека: %1").arg(pageStack.depth)
        }
    }
}
```

### Task1-2.qml

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**
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Страница 2")
    }
    Column {
       anchors.horizontalCenter: parent.horizontalCenter
       anchors.centerIn: parent
       spacing: 20
       Button {
           text: "Назад"
           onClicked: pageStack.pop()
       }
       Button {
           text: "Вперед"
           onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Page%1.qml").arg((pageStack)
       }
       Label {
           text: qsTr("Глубина стека: %1").arg(pageStack.depth)
       }
   }
}
```

# Task1-2.qml

\*\*

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*******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Страница 2")
   }
    Column {
       anchors.horizontalCenter: parent.horizontalCenter
```

```
anchors.centerIn: parent
spacing: 20

Button {
    text: "Назад"
    onClicked: pageStack.pop()
}
Button {
    text: "Вперед"
    onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Page%1.qml").arg((pageStack))
}
Label {
    text: qsTr("Глубина стека: %1").arg(pageStack.depth)
}
}
```

### Task2-1.qml

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**********************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
    objectName: "mainPage"
    allowedOrientations: Orientation.All
    PageHeader {
       objectName: "pageHeader"
       title: qsTr("Первая страница")
    }
    Column {
       anchors.horizontalCenter: parent.horizontalCenter
       anchors.centerIn: parent
       spacing: 20
       Button {
           text: "Прикрепить"
           onClicked: pageStack.pushAttached(Qt.resolvedUrl(qsTr("Page2.qml")))
       }
       Button {
           text: "Открепить"
           onClicked: pageStack.popAttached()
       }
    }
}
```

## Task2-2.qml

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******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
    objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Страница 2")
    }
    Column {
       anchors.horizontalCenter: parent.horizontalCenter
       anchors.centerIn: parent
       spacing: 20
       Button {
           text: "Назад"
           onClicked: pageStack.navigateBack(1)
       }
```

```
}
```

# Task03.qml

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******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
```

objectName: "mainPage"

```
allowedOrientations: Orientation.All
PageHeader {
    objectName: "pageHeader"
    title: qsTr("Задание 3")
}
Column {
    anchors.centerIn: parent
    Button {
        text: "Ввести текст"
        onClicked: dialog.open()
    }
    TextField {
        id: field
        text: "123"
    }
}
Dialog {
    id: dialog
    property alias firstTextFieldValue: firstTextField.text
    Column {
        width: parent.width
        spacing: Theme.paddingMedium
        DialogHeader { }
        TextField {
            id: firstTextField
            width: parent.width
        }
    }
    onAccepted: field.text = firstTextFieldValue
}
Row {
    anchors.horizontalCenter: parent.horizontalCenter
    anchors.bottom: parent.bottom
    spacing: 20
    Button {
        text: "Вперед"
        onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task04.qml")))
    }
}
```

}

# Task04.qml

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import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 4")
```

```
}
    Column {
        anchors.centerIn: parent
        Button {
            text: "Ввести дату"
            onClicked: dialog.open()
        }
        TextField {
            id: field
            text: "123"
        }
    }
    DatePickerDialog {
        id: dialog
        onAccepted: field.text = date.toDateString()
    }
    Row {
        anchors.horizontalCenter: parent.horizontalCenter
        anchors.bottom: parent.bottom
        spacing: 20
        Button {
            text: "Назад"
            onClicked: pageStack.pop()
        }
        Button {
            text: "Вперед"
            onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task05.qml")))
    }
}
```

# Task05.qml

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import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
    objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 5")
    }
    Column {
       anchors.centerIn: parent
       Button {
           text: "Ввести время"
            onClicked: dialog.open()
       TextField {
           id: field
           text: "123"
```

```
}
    }
    TimePickerDialog {
        id: dialog
        onAccepted: field.text = time.toTimeString()
    }
    Row {
        anchors.horizontalCenter: parent.horizontalCenter
        anchors.bottom: parent.bottom
        spacing: 20
        Button {
            text: "Назад"
            onClicked: pageStack.pop()
        }
        Button {
            text: "Вперед"
            onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task06.qml")))
        }
    }
}
```

## Task06.qml

```
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*******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 6")
   }
   ListModel {
       id: tasksModel
       ListElement { desc: "Помыть посуду"; date: "07.01.21"; }
       ListElement { desc: "Сделать лабы"; date: "07.01.21"; }
       ListElement { desc: "Погулять"; date: "09.01.21"; }
       ListElement { desc: "Поспать"; date: "12.01.21"; }
   }
    Item {
       anchors.centerIn: parent
       width: 500
       height: 700
       SilicaListView {
           anchors.fill: parent
           model: tasksModel
           header: PageHeader { title: "Список дел" }
           section {
               property: 'date'
               delegate: SectionHeader { text: section }
           delegate: Text { text: desc }
       }
```

```
Row {
    anchors.horizontalCenter: parent.horizontalCenter
    anchors.bottom: parent.bottom
    spacing: 20

Button {
        text: "Hasaд"
        onClicked: pageStack.pop()
}
Button {
        text: "Bmepeд"
        onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task07.qml")))
}
}
```

# Task07.qml

```
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****************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
    objectName: "mainPage"
    allowedOrientations: Orientation.All
    PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 7")
    }
    Item {
       anchors {
           left: parent.left; right: parent.right;
           verticalCenter: parent.verticalCenter;
       height: parent.height * 0.8
       SilicaWebView {
           id: webView
           anchors.fill: parent
           url: "http://sailfishos.org"
       }
    }
   Row {
       anchors.horizontalCenter: parent.horizontalCenter
       anchors.bottom: parent.bottom
       spacing: 20
       Button {
           text: "Назад"
           onClicked: pageStack.pop()
       }
       Button {
           text: "Вперед"
           onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task08.qml")))
       }
    }
}
```

# Task08.qml

```
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*****************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 8")
```

```
}
ListModel {
    id: tasksModel
    ListElement { desc: "Помыть посуду"; date: "07.01.21"; }
    ListElement { desc: "Сделать лабы"; date: "07.01.21"; }
    ListElement { desc: "Погулять"; date: "09.01.21"; }
    ListElement { desc: "Поспать"; date: "12.01.21"; }
}
Item {
    anchors {
        left: parent.left; right: parent.right;
        verticalCenter: parent.verticalCenter;
    }
    height: parent.height * 0.8
    SlideshowView {
        id: view
        anchors.centerIn: parent
        height: width
        itemHeight: width; itemWidth: width;
        model: tasksModel
        delegate: Rectangle {
            width: view.itemWidth;
            height: view.itemHeight;
            Text {
                anchors {
                    top: parent.top;
                    right: parent.right;
                }
                text: date
            }
            Text {
                anchors.centerIn: parent
                text: desc
            }
        }
    }
}
Row {
    anchors.horizontalCenter: parent.horizontalCenter
    anchors.bottom: parent.bottom
    spacing: 20
    Button {
        text: "Назад"
        onClicked: pageStack.pop()
```

```
}
Button {
    text: "Вперед"
    onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task09.qml")))
}
}
```

## Task09.qml

```
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*******************************
```

```
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
    objectName: "mainPage"
    allowedOrientations: Orientation.All
    PageHeader {
        objectName: "pageHeader"
        title: qsTr("Задание 9")
    }
    SilicaListView {
        PullDownMenu {
            MenuItem {
                text: "Menu Item 1"
                onClicked: field.text = text
            }
            MenuItem {
                text: "Menu Item 2"
                onClicked: field.text = text
            }
            MenuLabel { text: qsTr("Menu Label") }
        anchors {
            left: parent.left; right: parent.right;
        height: parent.height * 0.2
        y: parent.height * 0.2
        header: PageHeader { title: "Simple List" }
    }
    TextField {
        id: field
        text: "123"
        anchors.centerIn: parent
    }
    SilicaListView {
        PushUpMenu {
            MenuItem {
                text: "Menu Item 3"
                onClicked: field.text = text
            }
            MenuItem {
                text: "Menu Item 4"
                onClicked: field.text = text
            }
            MenuLabel { text: qsTr("Menu Label") }
        }
```

```
anchors {
            left: parent.left; right: parent.right;
        }
        height: parent.height * 0.2
        y: parent.height * 0.6
        header: PageHeader { title: "Simple List 2" }
    }
    Row {
        anchors.horizontalCenter: parent.horizontalCenter
        anchors.bottom: parent.bottom
        spacing: 20
        Button {
            text: "Назад"
            onClicked: pageStack.pop()
        }
        Button {
            text: "Вперед"
            onClicked: pageStack.push(Qt.resolvedUrl(qsTr("Task10.qml")))
        }
    }
}
```

## Task10.qml

```
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*******************************
import QtQuick 2.0
import Sailfish.Silica 1.0
Page {
   objectName: "mainPage"
    allowedOrientations: Orientation.All
   PageHeader {
       objectName: "pageHeader"
       title: qsTr("Задание 10")
    }
   SilicaListView {
       anchors {
           left: parent.left; right: parent.right;
           verticalCenter: parent.verticalCenter
       height: parent.height * 0.8
       model: 20
       delegate: ListItem {
           id: delegate
           Label {
               x: Theme.paddingLarge
               text: "List Item #" + index
               color: delegate.highlighted ? Theme.highlightColor : Theme.primaryCol
           menu: ContextMenu {
               MenuLabel { text: "Context Menu" }
               MenuItem {
                   text: "Menu Item 1"
                   onClicked: console.log("Menu Item 1 is clicked", index)
               }
               MenuItem {
                   text: "Menu Item 2"
```

```
onClicked: console.log("Menu Item 2 is clicked", index)
}

Row {
    anchors.horizontalCenter: parent.horizontalCenter
    anchors.bottom: parent.bottom
    spacing: 20

Button {
    text: "Hasam"
    onClicked: pageStack.pop()
    }
}
```

# DefaultCoverPage.qml

```
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***********************************
import QtQuick 2.0
import Sailfish.Silica 1.0
CoverBackground {
    objectName: "defaultCover"
    property int counter: 0
    Label {
       id: label
       anchors.centerIn: parent
       text: qsTr("Счётчик: %1").arg(counter)
    }
    CoverActionList {
       CoverAction {
           iconSource: "image://theme/icon-splus-add"
           onTriggered: counter++
       }
       CoverAction {
           iconSource: "image://theme/icon-splus-remove"
           onTriggered: counter--
       }
    }
}
```