



thinkable

Thinkable

Знакомство с
математическими операциями
Урок 2

Создадим новый проект

2

Start Building 

Create New Project

X

New Project Name:

Quiz

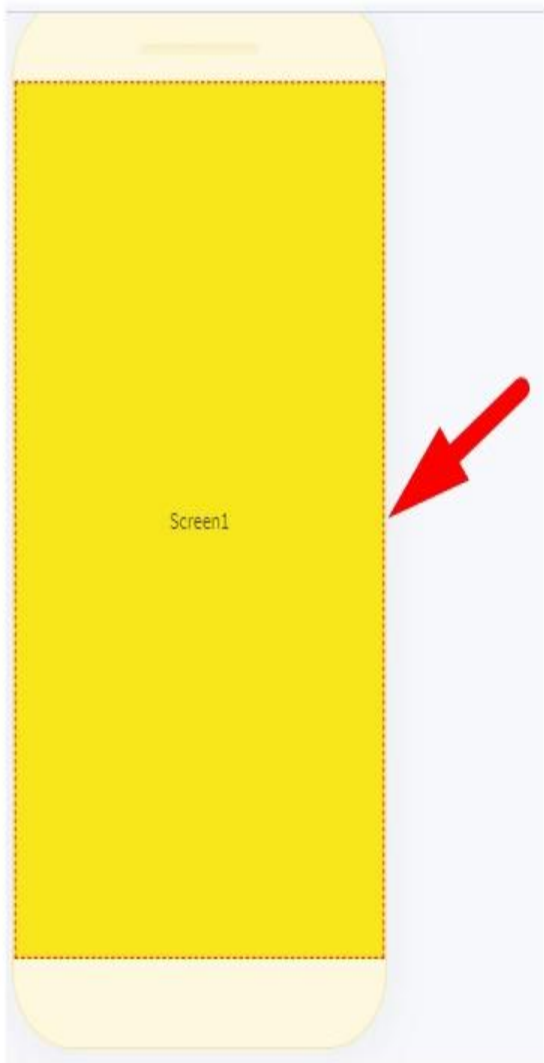
Private Public

Private projects are only viewable and accessible to their creators.

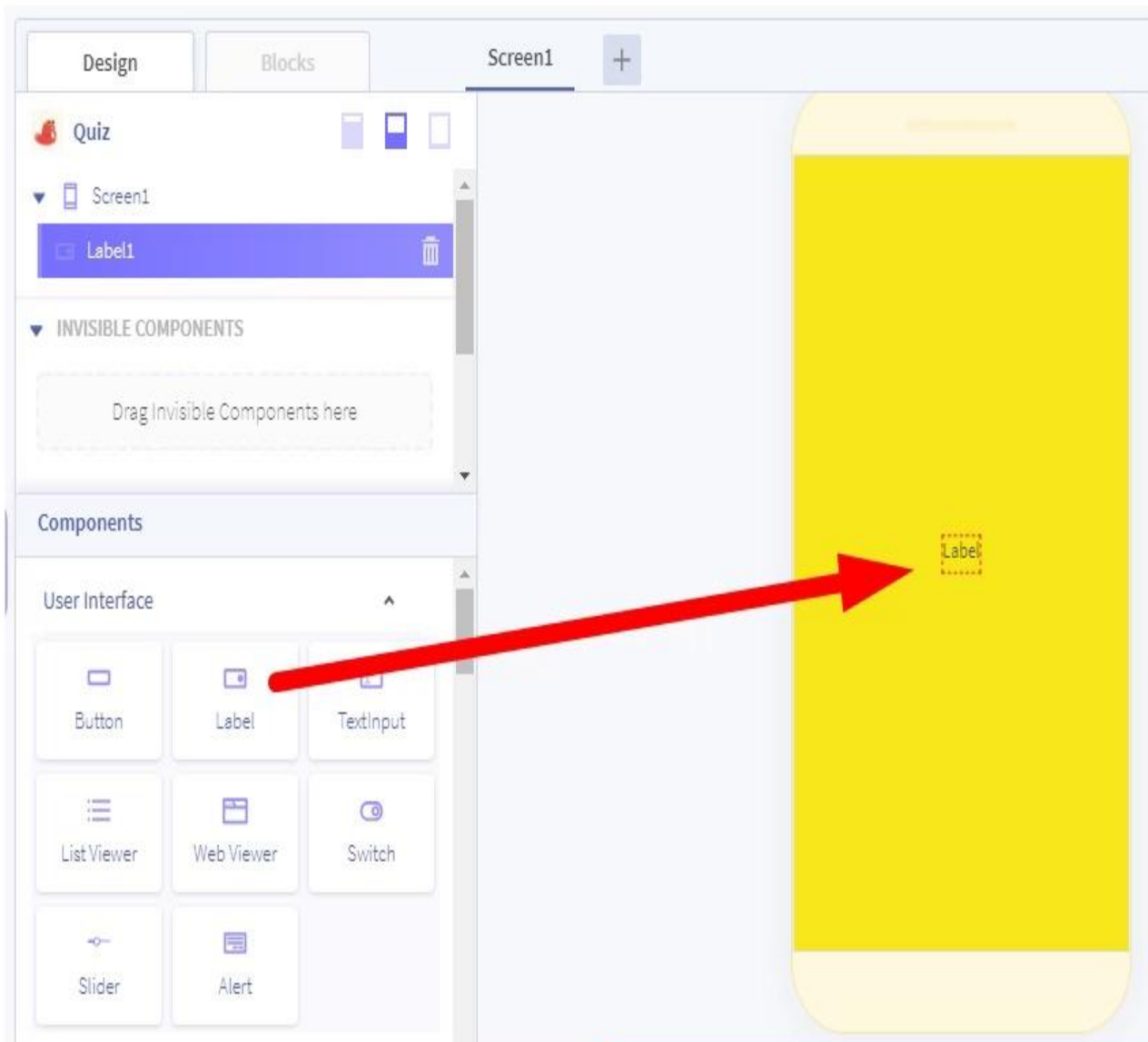
Cancel

Create

Изменим цвет фона



Добавим надпись



Настроим надпись



Label1

< Simple Adv

Text

Игра "Угадай логотип" X

FontSize

24

FontStyle

normal

Height

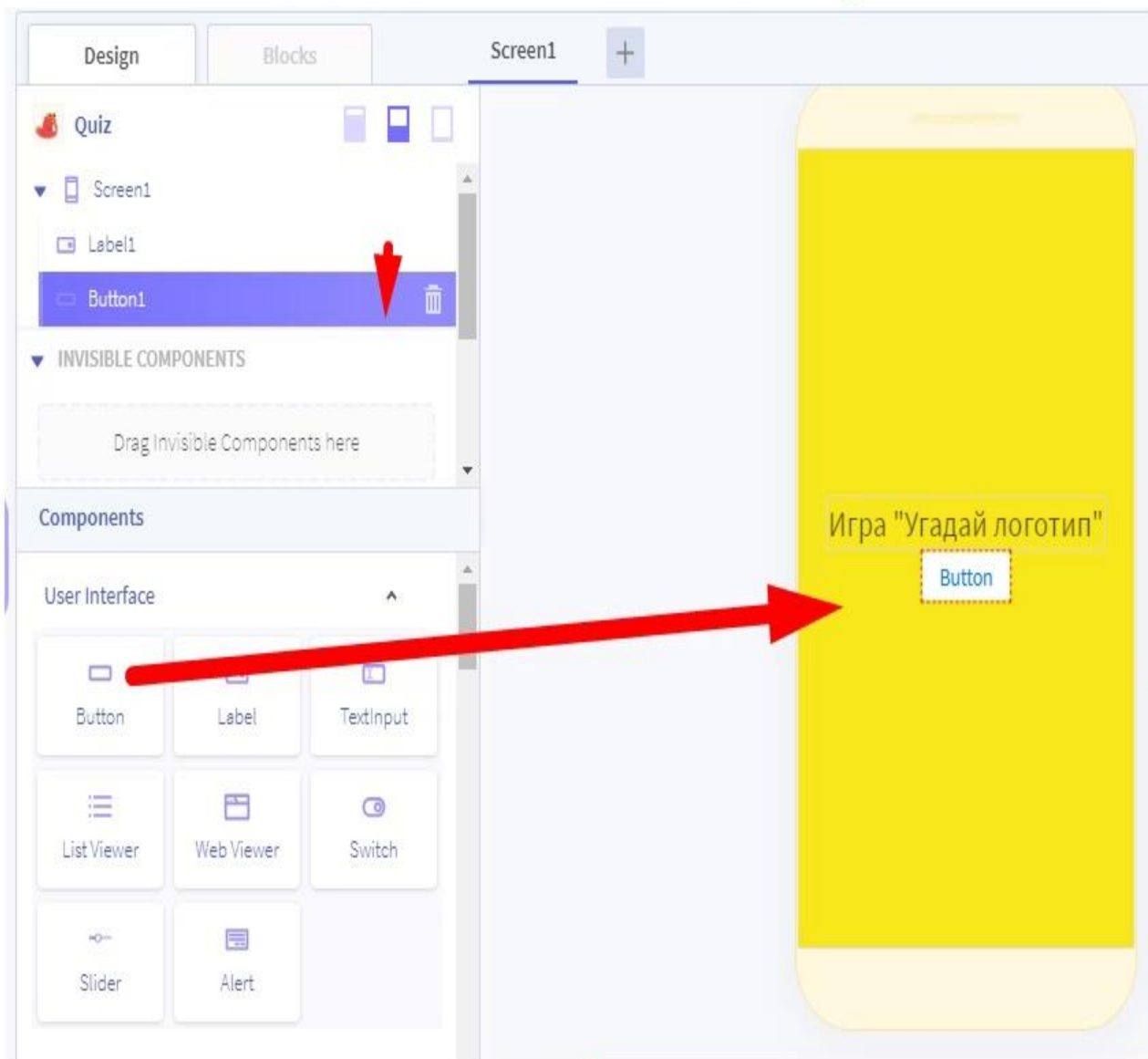
Absolute Size

35

Width

Pick One: Fit contents, Fill container

Добавим кнопку



Настроим кнопку



Button1

< Simple Adv >

Text
Играть! ×

TextColor
● #007aff

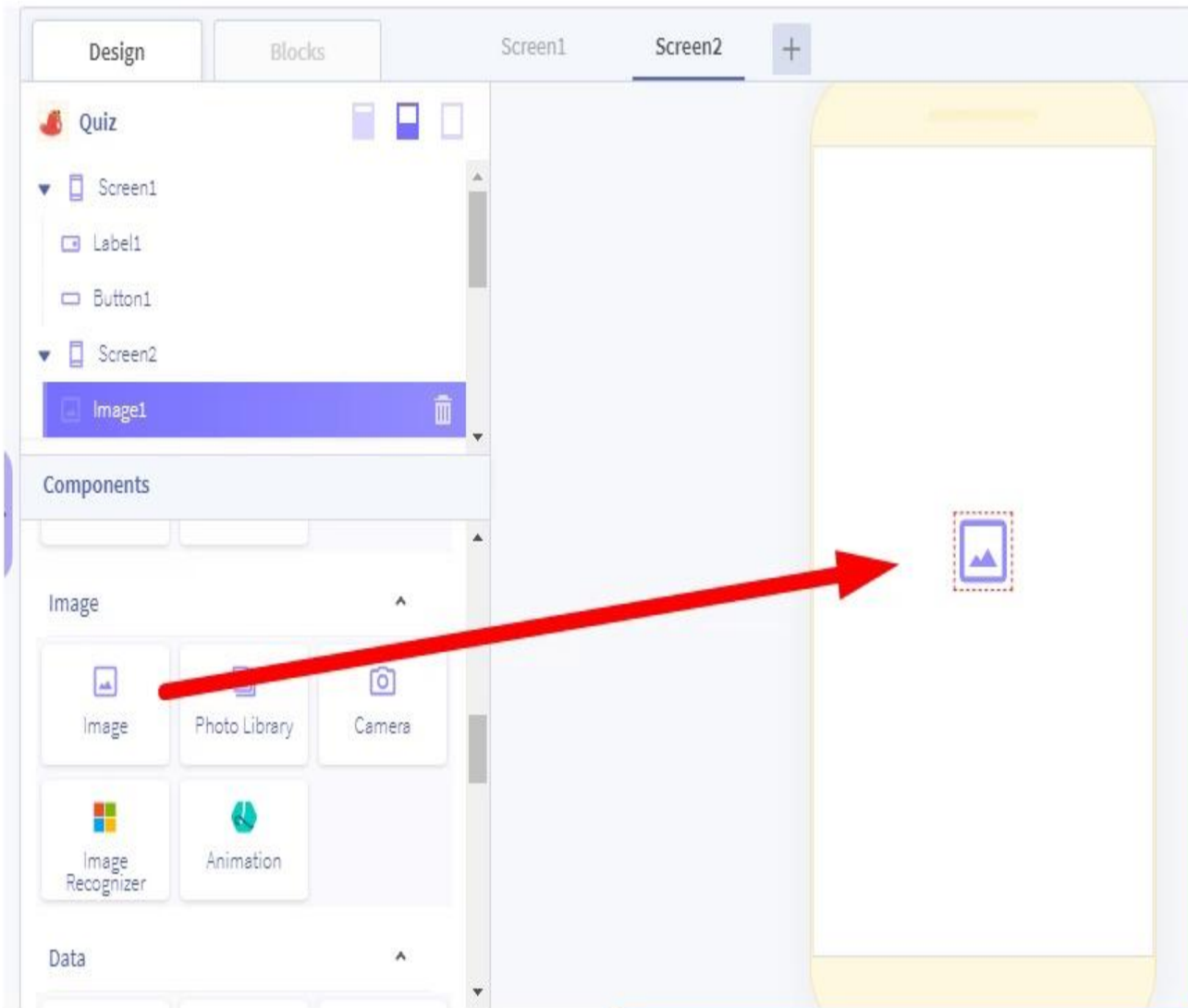
BackgroundColor
○ #ffffff

FontSize
20

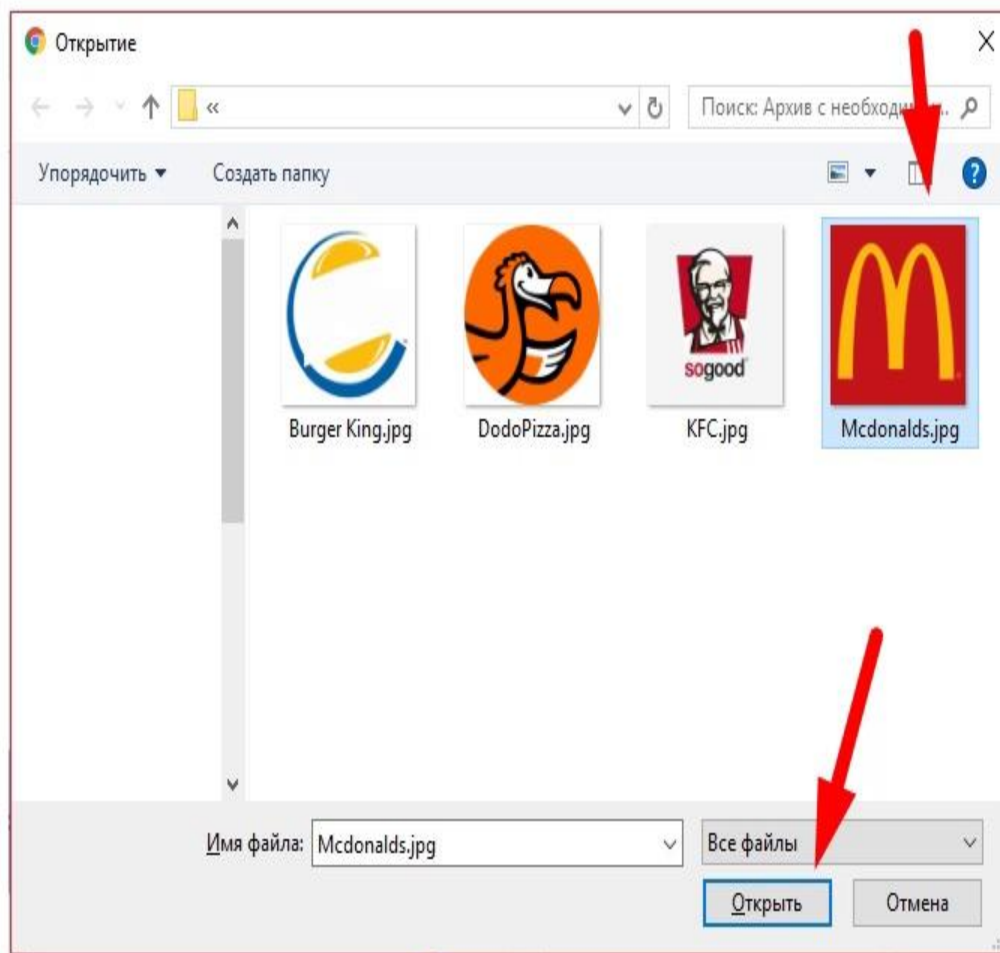
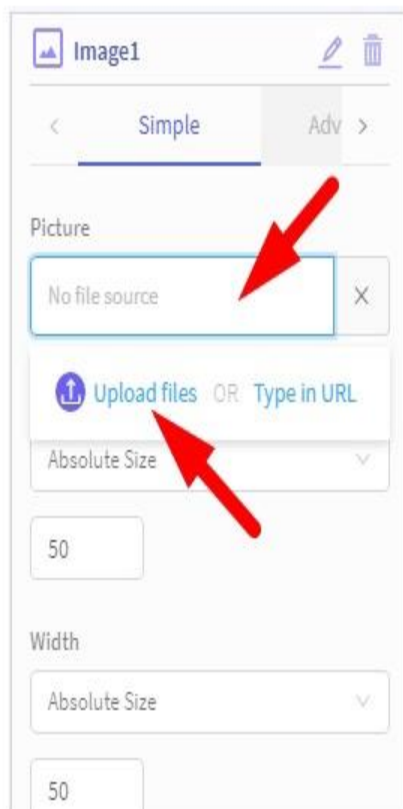
Создадим второй экран



Добавим изображение



Добавим изображение



Добавим изображение

Image1

< Simple Adv >

Picture

No file source

Upload files OR Type in URL

Mcdonalds.jpg

50

Picture

Mcdonalds.jpg

Height

Absolute Size

200

Width

Absolute Size

200

Image1

< Simple Adv >

Sizing >

Spacing >

Positioning >

Position

relative

Overflow

Select option

EdgeOffsets

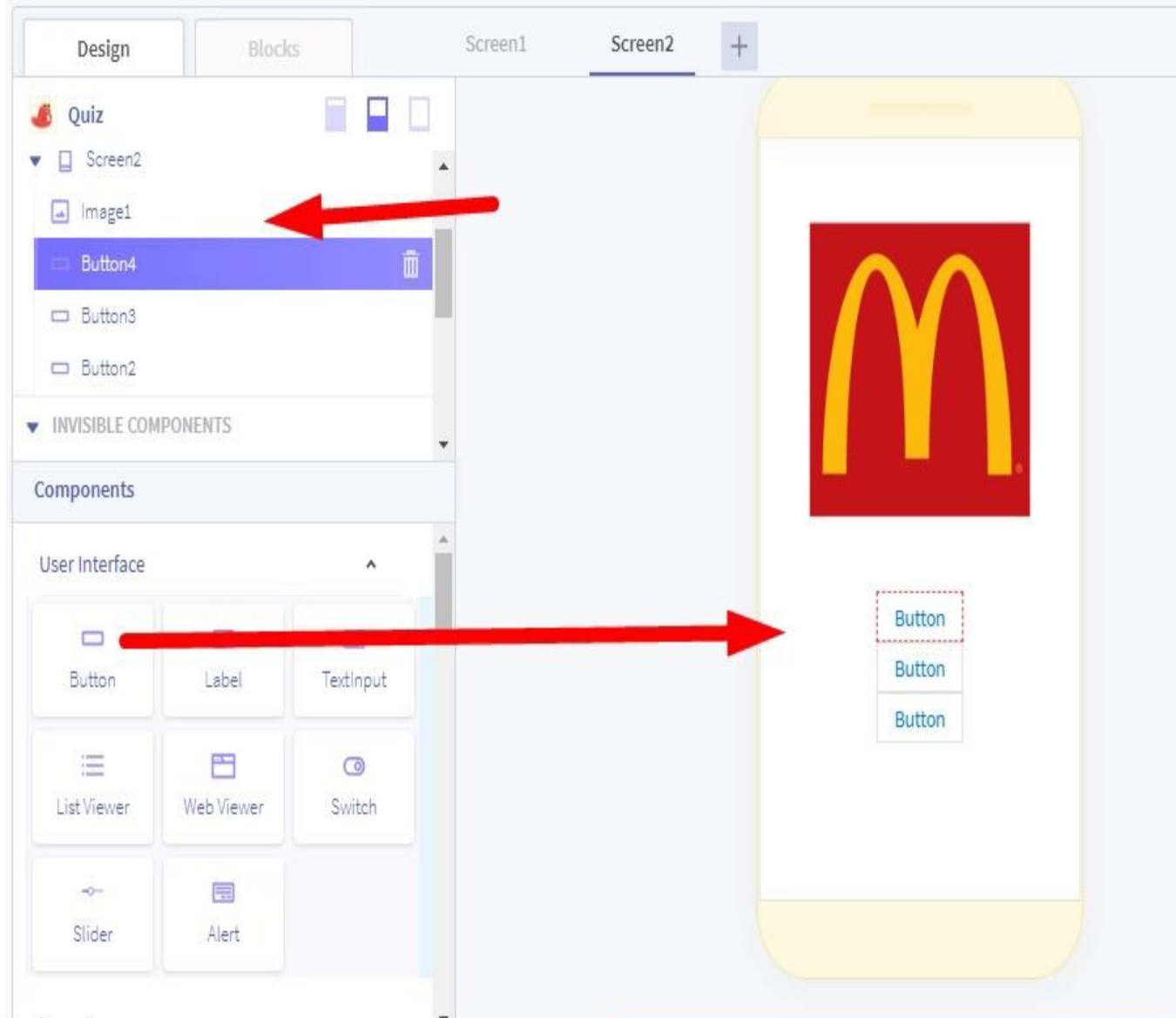
top bottom

px 50 px

left right

px # px

Добавим кнопки



Добавим изображение



Width

Absolute Size



120

Добавим действие

The screenshot displays a visual programming environment with a 'Design' view on the left and a 'Blocks' view on the right. The 'Design' view shows a list of categories: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Timer1, Label1, Button1, and Screen1. The 'Button1' category is highlighted with a red arrow. The 'Blocks' view shows a list of blocks: 'when Button1 Click', 'when Button1 LongClick', 'when Button1 TouchDown', and 'when Button1 TouchUp'. A red arrow points from the 'when Button1 Click' block in the 'Blocks' view to the 'Design' view, where a similar block is being added to the screen. The 'Design' view also shows a 'Screen1' tab and a 'Screen2' tab, with a red arrow pointing to the 'Screen1' tab. A large blue plus sign is visible in the bottom right corner of the interface.

Добавим действие

The image shows a visual programming environment with a 'Blocks' panel on the left and a workspace on the right. The 'Blocks' panel is divided into categories: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Label1, Button1, and Screen1. A red arrow points to the 'Control' category. In the workspace, a 'when Button1 Click' event block is connected to a 'do' block containing a 'navigate to Screen2' action. A red arrow points from a 'navigate to Screen1' block in the 'Blocks' panel to the 'do' block in the workspace. Another red arrow points to the 'navigate to Screen2' block in the workspace.

Добавим действие

The screenshot displays a development environment with a top navigation bar containing three tabs: "Screen1", "Screen2", and "Screen3". A red arrow points to "Screen2", which is currently selected. To the right of the tabs is a plus sign icon, also indicated by a red arrow. Below the navigation bar, three orange script blocks are visible, each starting with "when" and "do" blocks. The first block is triggered by "Button4 Click" and performs the action "navigate to Screen3". The second block is triggered by "Button3 Click" and performs the action "navigate to Screen3". The third block is triggered by "Button2 Click" and performs the action "navigate to Screen3".

Тестируем приложение!

Добавим переменную

The screenshot displays a visual programming environment with a 'Blocks' palette on the left and a workspace on the right. The workspace is divided into five screens: Screen1, Screen2, Screen3, Screen4, and Screen5. A red arrow points from the 'initialize app variable name to' block in Screen1 to the 'initialize app variable Success to' block in Screen2. The 'Variables' category in the 'Blocks' palette is highlighted with a red arrow. The workspace contains the following blocks:

- Screen1:
 - initialize app variable name to
 - set app Success to
 - change app Success by 1
 - app Success
- Screen2:
 - initialize app variable Success to
- Screen4:
 - when Button1 Click do navigate to Screen2

Добавим переменную

The screenshot displays a visual programming environment with a 'Design' tab and a 'Blocks' panel. The 'Design' tab shows a sequence of screens: Screen1, Screen2, Screen3, Screen4, and Screen5. The 'Blocks' panel is open, showing various categories of blocks: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Label1, Button1, and Screen1. A red arrow points from the '0' value in the 'initialize app variable Success to 0' block to the '0' value in the 'Math' category, indicating the source of the variable's initial value. Another red arrow points from the '0' value in the 'initialize app variable Success to 0' block to the '0' value in the 'Logic' category, indicating the destination of the variable's initial value. The 'initialize app variable Success to 0' block is highlighted in orange. Below it, a 'when Button1 Click' block is shown, containing a 'do' block with a 'navigate to Screen2' block.

Определим верную кнопку

The image shows a software development interface for designing a mobile application. The interface is divided into several sections:

- Design:** Shows the current screen, **Screen2**, which contains a large red square with the yellow McDonald's logo. Below the logo is a list of restaurant names: **McDonald's**, **Burger King**, and **KFC**. A red dashed box highlights the **McDonald's** text.
- Blocks:** A tree view on the left shows the hierarchy of the app. It includes **Quiz**, **Screen1** (with **Label1** and **Button1**), and **Screen2** (with **Image1** and **Button4**). A red arrow points to **Button4**.
- Components:** A panel at the bottom left shows various UI components available for use, including **Button**, **Label**, **TextInput**, **List Viewer**, **Web Viewer**, **Switch**, **Slider**, and **Alert**.

Изменим значение переменной

The screenshot displays a visual programming environment with a 'Blocks' palette on the left and a workspace on the right. The workspace is divided into five screens: Screen1, Screen2, Screen3, Screen4, and Screen5. A red arrow points from the 'set app Success to' block in Screen1 to the 'set app Success to' block in Screen3. Another red arrow points to the 'Variables' category in the 'Blocks' palette.

Blocks Palette:

- Control
- Logic
- Math
- Text
- Lists
- Color
- Objects
- Variables**
- Functions
- Image1
- Button4
- Button3
- Button2
- Screen2

Screen1:

- initialize app variable name to
- set app Success to
- change app Success by 1
- app Success
- set app "name" to
- change app "name" by 1
- app "name"

Screen2:

- when Button4 Click do navigate to Screen3
- when Button3 Click do navigate to Screen3
- when Button2 Click do navigate to Screen3

Screen3:

- set app Success to

Изменим значение переменной

The image shows the Scratch interface. On the left is the 'Blocks' palette with categories: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Timer1, and Image1. A red arrow points to the 'Math' category, which contains several blocks including a '0' block, a '1 + 1' block, a '1 - 1' block, a '1 x 1' block, and a '1 ÷ 1' block. A second red arrow points from the '1 + 1' block in the palette to a script area on the right. The script area is for 'Screen2' and contains three event-driven scripts:

- when Button4 Click do: navigate to Screen3, set app Success to 1 + 1
- when Button3 Click do: navigate to Screen3
- when Button2 Click do: navigate to Screen3

The 'set app Success to 1 + 1' block is highlighted with a red arrow pointing from the 'Math' palette.

Изменим значение переменной

The screenshot displays a visual programming environment with a 'Blocks' panel on the left and a workspace on the right. The workspace is currently set to 'Screen2'.

Blocks Panel (Left):

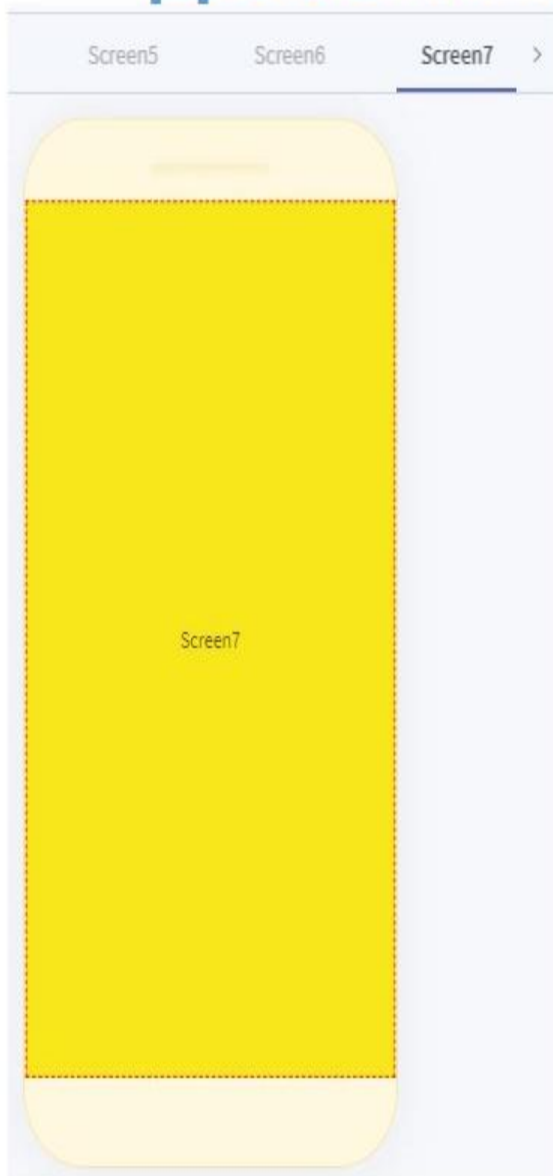
- Control:** initialize app variable name to
- Logic:** set app Success to
- Math:** change app Success by 1
- Text:**
- Lists:**
- Color:**
- Objects:**
- Variables:** app Success

Workspace (Right):

- when Button4 Click:**
 - do navigate to Screen3
 - do set app Success to app Success + 1
- when Button3 Click:**
 - do navigate to Screen3

Two red arrows highlight the workflow: one points from the 'app Success' variable block in the Variables category to the 'set app Success to' block in the Button4 logic, and another points from the 'change app Success by 1' block to the '+ 1' block in the same logic.

Добавим последний экран



Добавим надписи



Добавим действие

The screenshot displays a programming interface with a 'Design' tab and a 'Blocks' tab. The 'Blocks' tab is active, showing a list of categories on the left and a script area on the right. The categories are: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Label2, Label3, and Screen7. The 'Screen7' category is highlighted in blue. A red arrow points from the 'Screen7' category to the 'when Screen7 Opens' block in the script area. Another red arrow points from the 'when Screen7 Opens' block in the script area to the 'when Screen7 Opens' block in the 'Blocks' palette. The script area contains several blocks: a 'when Screen7 Opens' block, a 'from Screen7 set BackgroundColor to' block, a 'from Screen7 get BackgroundColor' block, a 'from Screen7 set BackgroundPicture to' block, and a 'from Screen7 get BackgroundPicture' block.

Изменим надпись

The image shows a visual programming environment with two main panels: 'Design' and 'Blocks'. The 'Design' panel on the left lists various objects and their properties. The 'Blocks' panel on the right shows a sequence of code blocks for 'Screen7'.

Design Panel:

- Control
- Logic
- Math
- Text
- Lists
- Color
- Objects
- Variables
- Functions
- Label2
- Label3** (highlighted)
- Screen7

Blocks Panel:

- from Label3 set Text to " " (highlighted)
- from Label3 get Text
- from Label3 set FontSize to 0
- from Label3 get FontSize
- from Label3 set Color to (black)
- from Label3 get Color
- from Label3 set BackgroundColor to (black)
- from Label3 get BackgroundColor

Event Block:

- when Screen7 Opens
- do from Label3 set Text to " "

A red arrow points from the 'set Text' block in the 'Design' panel to the 'set Text' block inside the 'when Screen7 Opens' event block in the 'Blocks' panel.

Изменим надпись

The image shows a programming interface with a 'Design' tab and a 'Blocks' tab. The 'Design' tab shows a sequence of screens: Screen3, Screen4, Screen5, Screen6, and Screen7. The 'Blocks' tab is active, displaying a list of block categories on the left and a collection of blocks in the center. The categories are: Control, Logic, Math, Text, Lists, Color, Objects, Variables, Functions, Label2, Label3, and Screen7. The 'Text' category is highlighted in red. A red arrow points from the 'Text' category to a 'join' block in the center. Another red arrow points from the 'join' block to a script area on the right. The script area shows a 'Screen7 Opens' block followed by a 'from Label3 set Text to' block, which is being dragged from the 'Text' category. The 'set Text to' block is connected to a 'join' block containing the strings 'hello' and 'world'.

Design | Blocks | Screen3 | Screen4 | Screen5 | Screen6 | Screen7 | +

Control

Logic

Math

Text

Lists

Color

Objects

Variables

Functions

Label2

Label3

Screen7

join "hello" "world"

length of "abc"

does "abc" contain "b"

in text "abc" get substring from letter# 1 to letter# 2

in text "abc" get letter# 1

Screen7 Opens

from Label3 set Text to join "hello" "world"

Изменим надпись

The screenshot shows the Scratch IDE interface with the 'Blocks' palette on the left and a script for 'Screen7' on the right. The 'Variables' category is highlighted in the palette, and a red arrow points to the 'app Success' variable block. Another red arrow points from this block to the 'app Success' block in the script.

Blocks Palette:

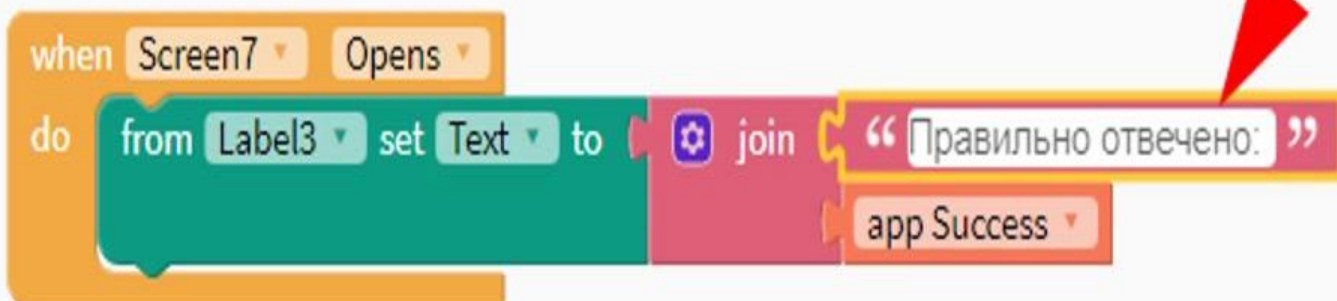
- Control: initialize app variable name to
- Logic: set app Success to
- Math: change app Success by 1
- Text: app Success
- Lists: app Success
- Color: app Success
- Object: app Success
- Variables: app Success
- Functions: set app "name" to
- Label2: change app "name" by 1
- Label3: app "name"
- Screen7: change app "name" by 1

Script for Screen7:

```
when Screen7 Opens  
do  
  from Label3 set Text to  
    join  
      "hello"  
      app Success
```

Изменим надпись

```
when Screen7 Opens  
do  
  from Label3 set Text to join  
  “ Правильно отвечено: ”  
  app Success
```



Тестируем приложение!

Добавим таймер

The screenshot shows the Xcode IDE interface. At the top, there are tabs for Design and Blocks, and a navigation bar with tabs for Screen1, Screen2, Screen3, Screen4, and Screen5. The Design view shows a yellow mobile app screen with the text "Игра 'Угадай логотип'" and a button labeled "Играть!". A red arrow points from the "Timer" component in the "Sensors" section of the Components palette to the bottom of the app screen. A dashed box at the bottom of the screen indicates the location of the "Timer1" component.

The screenshot shows the settings for the "Timer1" component. The "Simple" tab is selected. The settings are as follows:

- Enabled: false (indicated by a red arrow)
- IntervalMilliseconds: 1000 (indicated by a red arrow)
- Loops: true (indicated by a red arrow)

Добавим переменную

The screenshot displays the CodaLab IDE interface with the 'Blocks' tab selected. The left sidebar shows the 'Variables' category highlighted. The main workspace is divided into two panes: 'Screen1' and 'Screen2'. In 'Screen1', the following blocks are visible:

- initialize app variable name to
- set app Success to
- change app Success by 1
- app Success
- app Time
- set app "name" to
- change app "name" by 1
- app "name"

A red arrow points from the 'initialize app variable name to' block in 'Screen1' to the 'initialize app variable Success to 0' block in 'Screen2'. The 'Screen2' pane also contains the following blocks:

- initialize app variable Success to 0
- initialize app variable Time to 0
- when Button1 Click do navigate to Screen2

Активируем таймер

The screenshot displays the Scratch interface with the 'Blocks' palette on the left and the script area on the right. The 'Timer1' category is selected in the palette, and a red arrow points to it. The script area shows the following code:

```
when Timer1 Fires  
do  
  initialize app variable Success to 0  
  initialize app variable Time to 0  
  when Button1 Click  
  do  
    navigate to Screen2  
    from Timer1 set Enabled to true
```

The 'from Timer1 set Enabled to true' block is highlighted in yellow, and a red arrow points from it to the 'from Timer1 set Enabled to true' block in the script area. The 'from Timer1 set IntervalMilliseconds to 3000' block is also visible in the palette.

Считаем время

The screenshot displays the Scratch IDE interface with the 'Blocks' palette on the left and a script area for 'Screen2' on the right. The 'Timer1' block is highlighted in the palette. The script for 'Screen2' is as follows:

```
when Timer1 Fires  
do  
  from Timer1 set Enabled to true  
  from Timer1 get Enabled  
  from Timer1 set IntervalMilliseconds to 3000  
  from Timer1 get IntervalMilliseconds  
  from Timer1 set Loops to true  
  from Timer1 get Loops
```

The script for 'Screen3' is:

```
when Button4 Click  
do  
  navigate to Screen3  
  change app Success by 1
```

The script for 'Screen4' is:

```
when Button3 Click  
do  
  navigate to Screen3
```

The script for 'Screen5' is:

```
when Button2 Click  
do  
  navigate to Screen3
```

The script for 'Screen1' is:

```
when Timer1 Fires  
do
```

Two red arrows point from the 'Timer1' block in the palette to the 'when Timer1 Fires' blocks in the 'Screen2' and 'Screen1' scripts.

Считаем время



```
when Timer1 Fires  
do set app Time to app Time + 1
```

The image shows a Scratch code block. It is an orange 'when' block with 'Timer1' selected in the dropdown and 'Fires' in the event dropdown. Below it is a 'do' block containing a 'set' block. The 'set' block has 'app Time' in the dropdown and 'to' as the operator. The value being set is 'app Time + 1', where 'app Time' is in a dropdown, '+' is the operator, and '1' is the value.

Задание:

Добавьте подсчет времени на все остальные экраны



Добавим надпись



Остановим таймер

The screenshot displays a visual programming environment with a 'Blocks' palette on the left and a workspace on the right. The workspace shows a sequence of events for 'Screen7' opening.

Blocks Palette (Left):

- Control
 - when Timer1 Fires
- Logic
 - do
- Text
 - from Timer1 set Enabled to true
- Lists
 - from Timer1 get Enabled
- Color
 - from Timer1 set IntervalMilliseconds to 3000
- Variables
 - from Timer1 get IntervalMilliseconds
- Function
 - from Timer1 set Loops to true
- Timer1
 - from Timer1 get Loops

Workspace (Right):

- when Screen7 Opens
 - do
 - from Label3 set Text to join " Правильно отвечено: "
 - app Success
 - from Timer1 set Enabled to false

Red arrows point to the 'Timer1' category in the palette, the 'when Screen7 Opens' event block, and the 'from Timer1 set Enabled to false' block.

Изменим надпись

```
when Screen7 Opens  
do  
  from Label3 set Text to join (" Правильно отвечено: ")  
  from Timer1 set Enabled to false  
  from Label4 set Text to join (" Затрачено времени: ")  
  app Success  
  app Time
```


Тестируем приложение!

