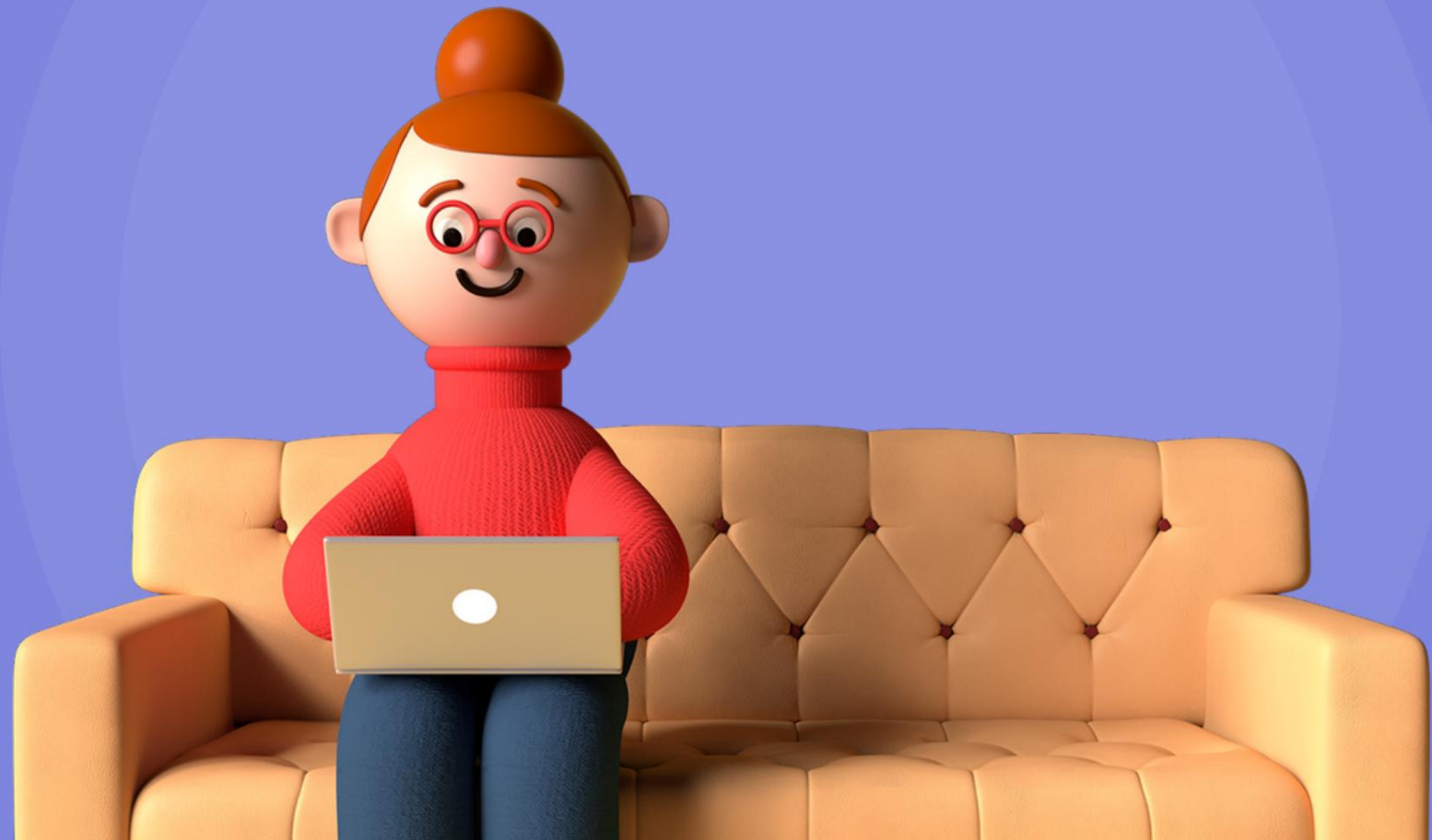


# COURSE PROGRAM

Creating games  
in Roblox



# HOW DOES TRAINING GO?



The course consists of 9 modules

36 lessons once a week

1.5 hours each (2 academic hours)

# DESCRIPTION

## COURSE

Roblox is a popular online multiplayer game that just recently made it possible to develop games on its own Roblox Studio platform. During the course, children will gain basic Lua programming skills, learn how to model and create 3D objects, create game menus, and much more. Children will develop some of their own games. This course also focuses on the basic

concepts and principles that are used in all programming languages and laid the foundation for further development in this area.



# ROBLOX

# RESULTS TRAINING



After completing the "Creating games in Roblox" course, your child will: create their own game in Roblox

- Studio
- study game mechanics and game levels learn how to edit, refine
- the game  
and offer their tasks, while developing imagination and creativity  
will gain knowledge of the basics of mathematics, physics, the Lua
- programming language will learn to work in a team
- 
- will develop skills algorithmic thinking
- learn to work for results, create and protect their own projects



Course Objective: To master the process of game development in Roblox Studio, to get acquainted with various roles in the game industry and to gain the necessary skills to create games on your own.

## Course program: module 1

### Lesson 1

#### Introduction to Roblox. Creation of the first game

- Creating accounts and installing Roblox; Introduction to Roblox Studio. The concept of a game engine; Create your first game with the Obby template

**Practical task:** creating and setting up the first game objects.

### Lesson 2

#### Parent-Child Relationships and the Explorer. Object groups

- parent-child relationship; Working with groups of objects.

**Practical task:** working with blocks through setting up parent-child relationships, building a spiral staircase by grouping objects.

### Lesson 3

#### Setting object properties and game settings

- Roblox objects and their properties; Block object and its properties; Character properties; Map lighting setup.

**Practical task:** set up lighting in the game, set up the properties of objects in your game.

### Lesson 4

#### Setting the effects in the game. Types of Light Sources

- Adding smoke and fire effects to the game, studying the settings for these effects; Studying the types of light sources in the game; Adding new scripts and assets. Toolbox window.
- 

**Practical task:** adding lighting of different colors, practice working with effects.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 2

### Lesson 5

#### Modeling 3D objects

- Principles of 3D object modeling in Roblox Studio; Construction of
- the first floor of the building; Construction of the second floor and roof
- of the building; Adding decorative elements
- 

**Practical task:** building a 3D model of a house using studied tools.

### Lesson 6

#### Solid Modeling

- Familiarity with solid modeling; Operations Union,
- Negate, Separate

**Practical task:** built windows and doorways, built complex objects using solid modeling (Wall, Gate, Tower).

### Lesson 7

#### Working with decals and textures

- Using decals and textures to work with the appearance of an object; Theory and practice of working with decals; Theory and
- practice of working with textures
- 

**Practical task:** changed the appearance of objects using decals and textures (adding a sign, wall cladding).

### Lesson 8

#### Familiarity and practice with plugins

- Introduction to plugins
- Practice with Stravant ResizeAlign, Archimedes and Building Tools plugins.

**Practical task:** assembling a house from parts (Stravant ResizeAlign plugin, changing the wall around the village (Archimedes plugin), building a fence around the field (Building Tools plugin).



Course Objective: To Continue Learning Roblox Game Development

### Course program: module 3

#### Lesson 9

##### Landscape work

- The meaning of the landscape in the game. The role of the
- environment artist; Generation of a new landscape and setting its
- parameters; landscape materials; Landscape tools.
- 

**Practical task:** creating mountains, caves, trails, using various materials for landscape elements.

#### Lesson 10

##### Environment design development

- points of interest;
- Adding points of interest to the game;
- We create and design the player's path.

**Practical task:** created and configured three points of interest in the game, created the player's path from entering the game to the final location.

#### Lesson 11

##### Working out the details of the landscape and environment

- Landscape plugin BrushTool; Adding
- vegetation and its settings; Creation and design
- of various sections of the landscape

**Practical task:** planting plant objects (trees, forests, grass), creating and decorating landscape details (stones, rocky areas).

#### Lesson 12

##### Creating a Shared Project

- Creation of a common project for teamwork; Determining
- the style of the game, setting; Basic storytelling techniques;
- Group work - setting up the landscape and objects of a
- common game project.

**Practical task:** creating a contextual plot of the game, setting up a general game project using the received skills lessons.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 4

### Lesson 13

#### Lua programming language. Getting started with scripts

- Basic programming tasks. game engines; Lua programming
- language. variables; The concept of a script. Creating and
- running a script; The practice of using scripts in game tasks.
- 

**Practical task:** Solving practical problems - working with ready-made scripts - setting up object parameters for completing tasks games.

### Lesson 14

#### Lua programming language. for and while loops

- Familiarity with cycles and principles of working with
- them; While loop, the concept of an infinite loop; For
- loop, end loops; Animation of basic objects using
- scripts; The practice of using cycles in game tasks.
- 

**Practical task:** Solving practical problems - creating revolving doors, moving platforms.

### Lesson 15

#### Lua programming language. Conditional constructions, If operator

- The principle of operation of conditional structures. Boolean data type;
- Logical operators and and or; Comparing variables, checking
- conditions; Working with global variables
- 

**Practical task:** Passing various levels based on logical tasks and mathematical examples.

### Lesson 16

#### Lua programming language. Functions

- The concept of a function, the advantages of using
- them; Rules for creating and calling functions. Function attributes and locals variables.

**Practical task:** Applying the acquired knowledge to create and apply functions.





Course Objective: To Continue Learning Roblox Game Development

## Course program: module 5

### Lesson 17

#### Lua programming language. Events, part 1

- Event basics. Touched event; Correction of false
- positives. Debounce function; Creation of selectable objects;
- Built-in functions Destroy, FindFirstChild
- 

**Practical task:** passing practical tasks, creating interactive objects.

### Lesson 18

#### Lua programming language. Events, part 2

- Creation of exploding objects; Creation
- of a teleport; Working with colliders
- and the OnTouchEnded event; Basics of working with
- arrays.

**Practical task:** completing practical tasks based on real game tasks and interaction

environment player.

### Lesson 19

#### Interface Basics

- Creation of a team shooter based on a map prepared in advance; Basic
- principles of UI/UX design for games; Creation of command selection menu;
- Work with fonts and adaptive layout.
- 

**Practical task:** created a command selection menu, set up fonts, studied the properties of interface elements.

### Lesson 20

#### Lua programming language. Server and local scripts

- Interaction of the server and local side of games in Roblox; Creation
- of local and server scripts; Remote events; Teams service and team
- building.
- 

**Practical task:** programming the command selection menu, linking buttons to the Teams service, implementing the basic mechanics of a team shooter.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 6

### Lesson 21

#### Animation basics. Working with humanoid characters

- How Animation Works – The Basics;
- Character versions (R6, R15, etc.);
- Customization of appearance (clothes, accessories);
- Character structure in terms of animation (body parts, skeleton4) Basic
- animation (Forward Kinematics) and its principles; Timeline and animation
- keys.

**Practice:** Creating a basic character and working with Roblox Studio's built-in animation tools.

### Lesson 22

#### IK animation

- Reverse animation (Inverse Kinematics), its advantages and disadvantages;
- Character R15. Creation of complex animation clips (movements); Connecting
- animation to the character using scripts; Loop animations
- 

**Practical task:** creating complex animations and setting them to automatically play by the character.

### Lesson 23

#### Animation and scripting

- Creation of animation scripts; Creating
- an animation script to replace basic movements; Emote system in
- Roblox; Animation priority system; Call animation when pressing a
- key.
- 

**Practical task:** dance animation, creating a script that tracks keystrokes, a script that replaces basic animations.

### Session 24

#### Creating animated scenes

- Working with the Moon Animator
- plugin; Adding characters to the scene and their
- animation; Creation of cyclic walking animation;
- Animation of inanimate objects.

**Practical task:** created an animated scene with three characters and various objects.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 7

### Lesson 25

#### Character customization

- Creation of a non-player character;
- Basic clothing and its customization;
- Customization of body parts of the character; Accessories and advanced clothing

**Practical task:** creating and customizing an NPC for your game.

### Lesson 26

#### Roblox dialogue system

- Dialog object and its settings;
- Dialogue tree. Dialogue branches;
- Create character dialogues; Adding a non-player character and dialogue system; Programming Dialog
- Options with Local Scripts

**Practical task:** creating and customizing dialogues in your game.

### Lesson 27

#### Create a quest. Part 1

- Preparing the dialogue for the quest;
- Creating quest variables; Adding objects to the quest; Editing quest dialogues through scripts.

**Practical task:** add quest items, set up a dialogue with NPC following the quest.

### Lesson 28

#### Create a quest. Part 2

- Preparing an accessory for a quest reward;
- Creation of special effects for accessories;
- Creation of scripts to complete the quest.

**Practical task:** adding and setting up an accessory, writing scripts to complete the quest.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 8

### Lesson 29

#### Basics of level design. Part 1. Open locations

- Introduction to level design. Principles of constructing levels. blockout; Key
- locations: shelters, arenas, defense points, flanks; elevation changes; Location
- difficulty balance.
- 

**Practical task:** creating a game level from primitives (blockout), building a game route, distributing opponents on the level.

### Lesson 30

#### Level design. Part 2. Buildings and environment

- Modular approach to modeling. Level planning; Creation of a
- modular building, taking into account the movements of the players;
- Working out the environment.

**Practical task:** creating your own building model.

### Lesson 31

#### Roblox money system. Part 1. In-game currency

- Principles of working with in-game currency;
- Script for withdrawing player's money to the
- interface; Creating an enemy with Toolbox; Tag
- system and player shot tracking; Issuance of reward.
- 

**Practical task:** add an interface for displaying the player's money, set up the issuance of rewards for winning.

### Lesson 32

#### Roblox money system. Part 1. Creating a store

- Shop interface management programming. Creation
- buttons;
- Buying a jump booster; Script
- for buying game weapons.

**Practical task:** write scripts for buying amplifiers and in-game weapons.



Course Objective: To Continue Learning Roblox Game Development

## Course program: module 9

### Lesson 33

#### Getting Started on a Graduation Project

- The structure of the game studio;
- Distribution by departments. Roles in the team;
- Definition of the concept of the graduation project;
- Principles of teamwork in a training gamedev studio

**Practical task:** divide into teams of 2-3 people, determine the role in the project, approve the concept of the game.

### Lesson 34

#### Graduation project. Part 2. The basic structure of the game

- Creation of a general view of the map and landscape
- elements; Advanced landscape tools; Modeling of buildings
- and game objects; Selection of scripts, creation and design
- of teams of characters.

**Practical task:** performing tasks by departments - level designers, environment artists, programmers, 3D artists.

### Lesson 35

#### Graduation project. Part 3. Working out the details of the game

- Adding complex mechanics for moving players; Game level
- testing; Improving the visual part of the game using the
- Brushtool plugin; Weapons and balance in the game. Principles of dealing
- and tracking damage.

**Practical task:** performing tasks by departments - level designers, environment artists, programmers, 3D artists.

### Lesson 36

#### Completion of the graduation project

- Preparing a presentation of the created project;
- Presentation of the graduation project; Prospects
- for development and further education in the direction of gamedev.

**Practical task:** finalize the project, prepare for the presentation and participate in the presentation.