

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER EDUCATION
"NOVOSIBIRSK NATIONAL RESEARCH UNIVERSITY
STATE UNIVERSITY"
(NOVOSIBIRSK STATE UNIVERSITY, NSU)

15.03.06 - Mechatronics and Robotics

Focus (profile): Artificial Intelligence

SPECIFICATION

Job topic:

«FLAPPY BIRD»

Agaev Ali Malik ogly, 23934
Perminov Lev Alekseevich, 23934
Trushkin Ilya Andreevich, 23934

Novosibirsk

2024

TABLE OF CONTENTS

1 TERMS AND ABBREVIATIONS	3
2 INTRODUCTION	3
3 PURPOSE AND AREA OF APPLICATION	3
4 DEVELOPMENT REQUIREMENTS	3
4.1 FUNCTIONAL REQUIREMENTS	3
4.2 TECHNICAL REQUIREMENTS	3
5 DOCUMENTATION REQUIREMENTS	4
6 STAGES OF DEVELOPMENT	4
6.1 DEVELOPMENT STAGES	4
6.2 DEVELOPMENT PHASES	5
6.3 WORK CONTENT FOR EACH STAGE	5

1 TERMS AND ABBREVIATIONS

FB	"Flappy Bird"- is a mobile game where the player controls the flight of a bird by tapping the screen, guiding it between rows of green pipes without hitting them.
----	--

2 INTRODUCTION

"Digital Flappy Bird" is a project focusing on the development of the popular game "Flappy Bird" within the scope of the CS/MR Digital Platforms course 2023/24.

FB is a mobile game where players control the flight of a bird by tapping the screen, maneuvering it between rows of green pipes without hitting them.

3 PURPOSE AND AREA OF APPLICATION

FB is a simple arcade game. The main goal of the game is to score as many points as possible by flying through as many pipes as you can.

Purpose:

- The game helps develop the player's reaction, coordination, and endurance.
- It is designed for a wide audience and can be used for competitions among players or simply for entertainment.

Scope of application:

- Entertainment

4 DEVELOPMENT REQUIREMENTS

4.1 FUNCTIONAL REQUIREMENTS

1. Scores and ranking:
 - Keep track of scores based on the number of obstacles passed;
 - Display the player's best result (Best Score).
2. Progress saving:
 - The game should save the best result.

4.2 TECHNICAL REQUIREMENTS

1. Graphics:
 - The game should have colorful graphics, including detailed modeling of the bird.
 - The game graphics should closely resemble the original version FB.

2. Controls:
 - The game should respond to button presses to control the bird's flight;
 - There should be an option to resume the game.
3. Gameplay:
 - The player should control the bird's flight by pressing a button to make it ascend and releasing it to descend;
 - The bird must navigate obstacles in the form of pipes placed at different heights;
 - The game should end if the bird collides with an obstacle or touches the ground.
4. Organization of input and output data:
 - The program should be able to process user input (button clicks) to control the bird;
 - The program should display graphical elements such as the bird, pipes, score counter, and interface elements on the screen;
 - Display information about the current score and the player's best result.
5. Similarities to the original version :
 - The game should visually resemble the original FB game version, specifically: similar to the phone aspect ratio, using original colors.
6. Interface elements:
 - The game should have a Start Screen;
 - The game should have a Fail Screen.

5 DOCUMENTATION REQUIREMENTS

The composition of the program documentation shall include:

- Specification;
- Explanatory note.

6 STAGES OF DEVELOPMENT

6.1 DEVELOPMENT STAGES

Development should be carried out in three stages:

- Specification development;
- Detailed design;
- Project defense.

6.2 DEVELOPMENT PHASES

During the specification development stage, the development, coordination, and approval of the specification should be completed.

During the detailed design stage, the following tasks should be completed:

- Program development;
- Writing program documentation.

During the project defense stage, work should be done on presenting the program and submitting the program documentation for review.

6.3 WORK CONTENT FOR EACH STAGE

During the specification development stage, the following tasks should be completed:

- Task setting;
- Defining program requirements;
- Determining stages, phases, and deadlines for program development and documentation.

During the program development stage, work should be done on creating the software and hardware components of the program.

During the program documentation writing stage, the development of program documents should be completed according to requirements.

During the presentation stage, the following tasks should be completed:

- Preparation of the presentation;
- Presentation and demonstration of the program's operation.