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| UAS Software Development Project 1 |
| Ninja Game |
| Software Requirement Specification |

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# Introduction

## Product Overview

Ninja game is a simple web based 2D endless running game[1] with a database system that allows player to track top-scores and review statistics of his own account.

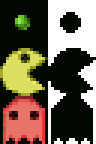
The game is easily comprehensible and controlled by traditional set of inputs (arrow keys for PCs). The main goal of the game is to survive as long as it is possible and score points. Coins collected during the session increase your total score by a certain amount. Player has to avoid obstacles flying towards him as he loses his health index when colliding with them. Once health bar has decreased to 0 % the game is over.

The key benefit from using the internet service is that player can follow their statistics and see the achievements of others. By logging in once, the user can enter the same credentials subsequently and be able to check his overall score and other statistics. However, if the user, for some reasons, does not prefer doing that, he can play autonomously and add his credentials later, to possibly show up in the ‘TOP-PLAYERS’ list that will be displayed in a separate page.

### Key Product Features

* Dynamic User-friendly web environment
* Statistics
* Login System

## Operating Environment

The application runs on any internet browsers supporting latest web standards. It is also possible to run it from smartphones with sensor displays and other touch-screen devices. (*There might be some exceptions*).

Raster graphic sprites and mask

## Definitions and Acronyms

**2D computer graphics** is the [computer](https://en.wikipedia.org/wiki/Computer)-based generation of [digital images](https://en.wikipedia.org/wiki/Digital_image)—mostly from two-dimensional models. Therefore, **2D games** (a.k.a *platformers*) implement such rendering techniques.

**Endless running** or **infinite running** games are platform games in which the player character is continuously moving forward through a usually [procedurally generated](https://en.wikipedia.org/wiki/Procedurally_generated), theoretically endless game world. Game controls are limited to making the character jump, attack, or perform special actions. The objective of these games is to get as far as possible before the character dies.

**Ninja** is a kind of [spy](https://simple.wikipedia.org/wiki/Spy) or [assassin](https://simple.wikipedia.org/wiki/Assassin) who lived in [Japan](https://simple.wikipedia.org/wiki/Japan) from the beginning of [14th century](https://simple.wikipedia.org/wiki/14th_century)[2]. The image of an extraordinarily strong and deft warrior with exotic equipment and movement techniques has been widely spread in modern culture.

## Reference Material

[1] — en.wikipedia.org/wiki/Platform\_game

[2] — en.wikipedia.org/wiki/Ninja

# Functional Requirements

## Game Features

The game is an eternal 2D platformer with traditional gameplay features such as *score, health-bar, obstacles, pickups.*

### Obstacles

The game includes a set of obstacles referred to as *weapons*. The *weapons* are fundamental of bringing the user experience and avoiding them is main goal of the game:

* + - **Shuriken** — Decreases the ninja’s health by 5% ;
    - **Katana** — Decreases the ninja’s health by 20% ;
    - **Kama** — Decreases the ninja’s health by 50% ;

### Pick-ups

Pick-ups are visible game objects that can be collected during the gameplay.

* + - **Coins** — Increases current score ;
    - **Health** — Increases the ninja’s health by 10% ;

# Non-Functional Requirements

Performance mostly depends on the client-side (e.g. internet browser, RAM etc). However, considering today’s technologies and the fact that out software does not require super capability, game most likely to be ran from any device. The interface language is English and service is accessible via the Internet.

Product does not require high security maintenance, therefore no extra modules required.

## User Database

Having a database expands quick gaming to long-lasting experience with abilities to compete with others and develop yourself. Every user has his own log-in credentials and after each gaming session the total score is increased by the amount of the current score. The current score is also important as the 10 highest records will be displayed in the special section. This modification allows players to connect with each other and prolongs the excitement of gaming journey playing significant role in relevancy of the product.

## Responsiveness and Mobile implementation

The ability to adjust properly for any screen size (from large desktops to small smartphones) is compulsory nowadays. Our team has just began our software developing path and we are not brave enough to say that it is in our power to successfully build the mobile version of Ninja game. However, we are willingly excited about trying it, but for now we can not guarantee it for sure.