TECHNICAL DESIGN DOCUMENT

1. Features List

The game will be an Arena shooter from top view on a limited choice of maps.

Player will not see the entire map at once, he will have to move.

The goal is to survive the longest time and mark the biggest score.

Waves of enemies will come to the player and he will have weapons to fight with.

Player win virtual money at the end of each game, allowing him to unlock maps and characters and ameliorate them.

There will be multiple achievements, allowing to gain virtual money once unlocked.

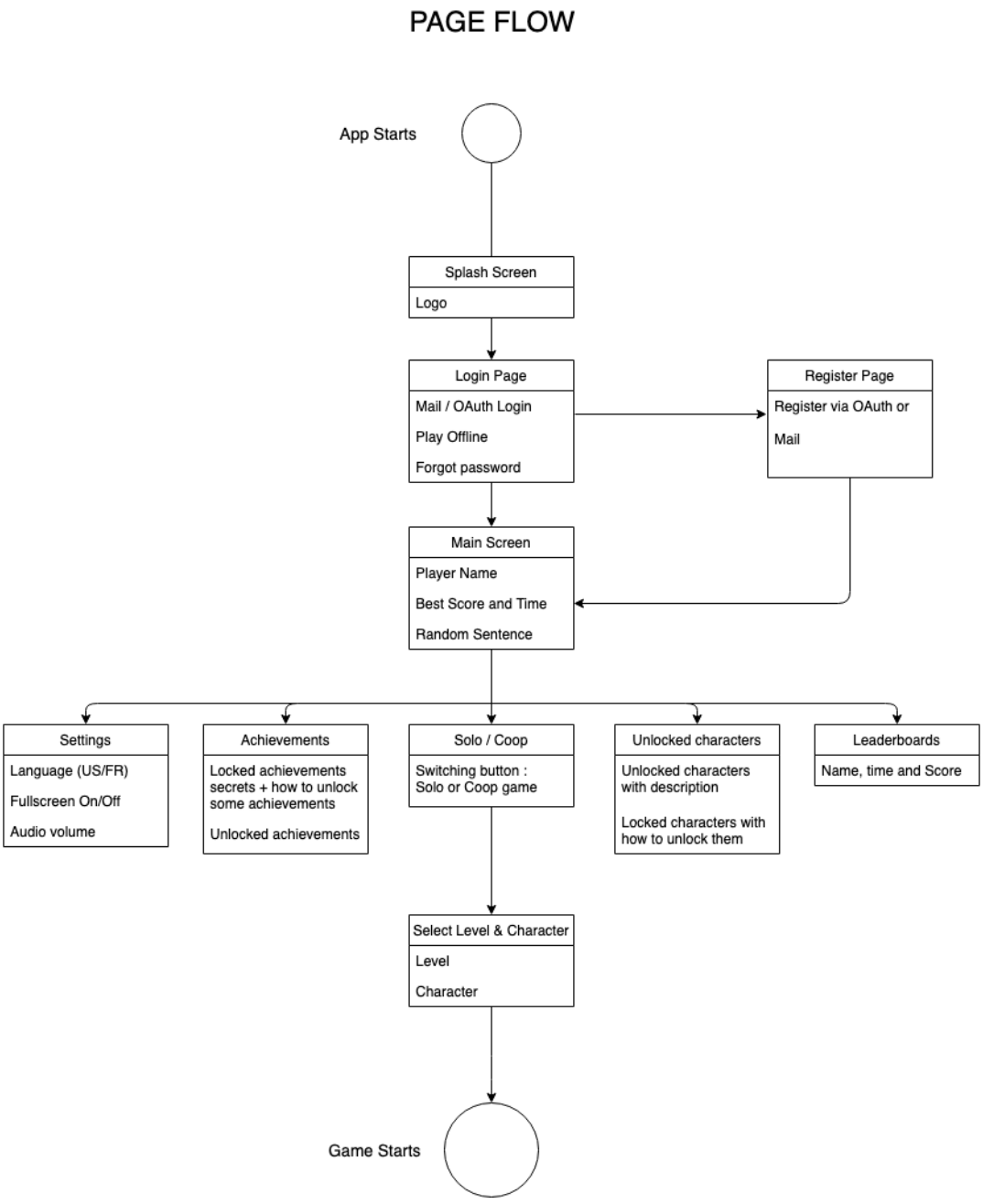
The game will have the following features:

a. Register & Login
b. Multiplayer
c. Personalize character
d. Run game (endless)
e. Unlocked characters
f. Achievements screen
g. Leaderboards

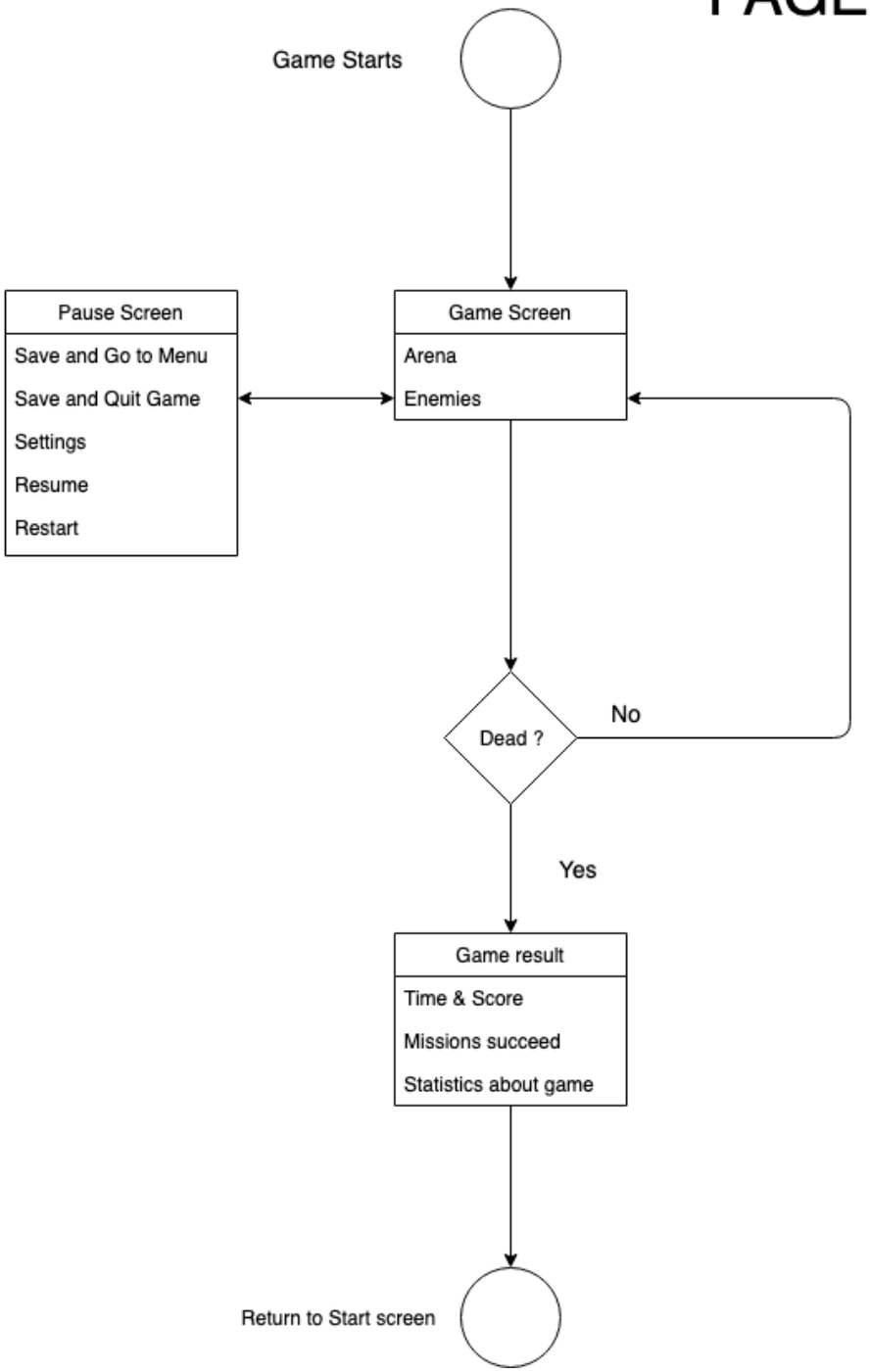
2. Technology

The game will be developed with Unity C#. Targeted platforms are Windows, then Linux but it is not a priority. Server-side database with MySQL on Unity and client-side database for local game with MySQL too.

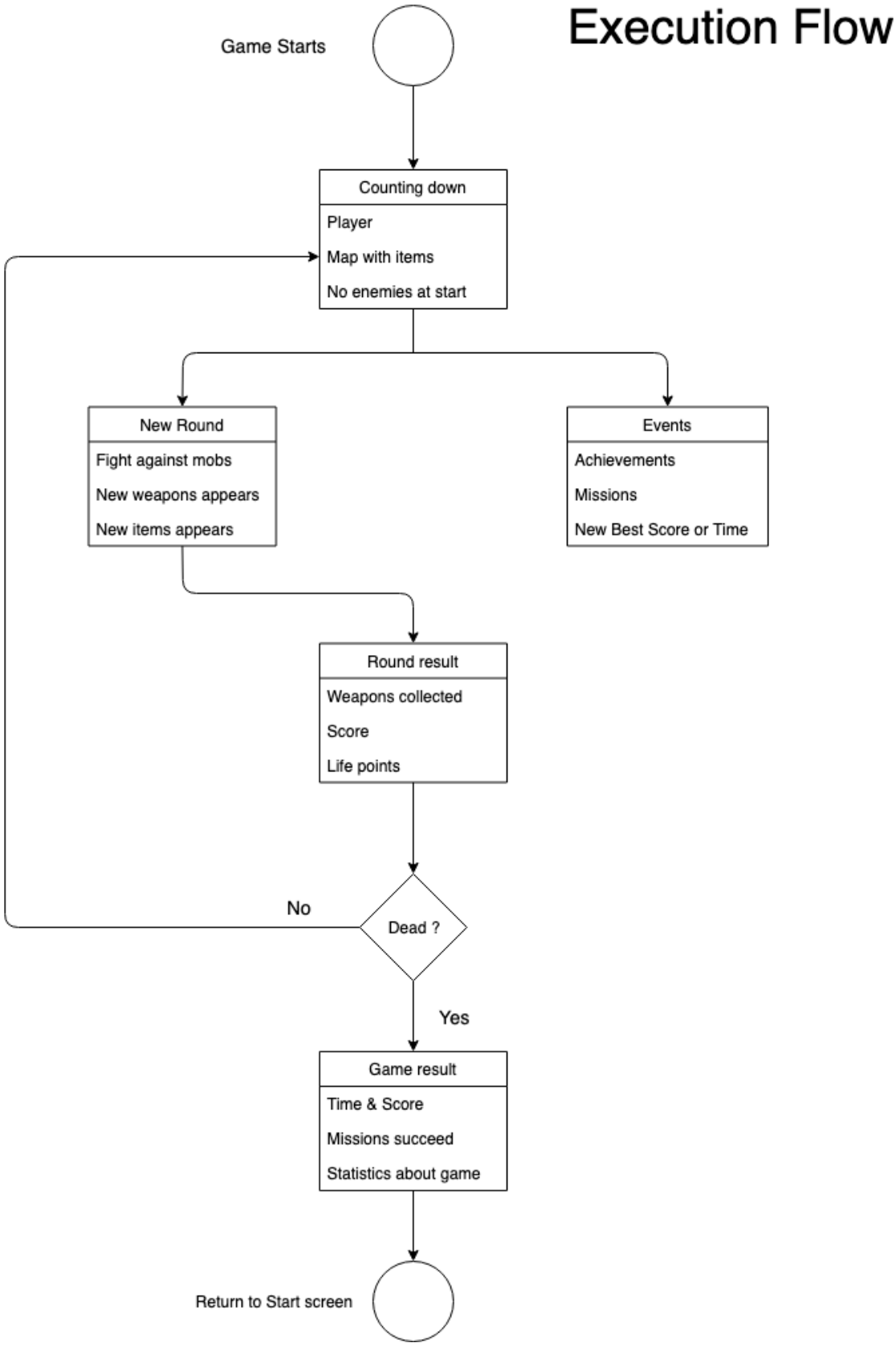
3. Diagrams


PAGE FLOW
App Starts
Splash Screen
Logo
Login Page
Mail / OAuth Login
Play Offline
Forgot password
Register Page
Register via OAuth or
Mail
Main Screen
Player Name
Best Score and Time
Random Sentence
Settings
Language (US/FR)
Fullscreen On/Off
Audio volume
Achievements
Locked achievements secrets + how to unlock some achievements
Unlocked achievements
Solo / Coop
Switching button : Solo or Coop game
Unlocked characters
Unlocked characters with description
Locked characters with how to unlock them
Leaderboards
Name, time and Score
Select Level & Character
Level
Character
Game Starts

PAGE FLOW


Game Starts
Pause Screen
Save and Go to Menu
Save and Quit Game
Settings
Resume
Restart
Game Screen
Arena
Enemies
Dead ?
No
Yes
Game result
Time & Score
Missions succeed
Statistics about game
Return to Start screen

Execution Flow



4. Database design

Table : Player	
Player ID	Integer
Player Name	Varchar 20
FB ID	Varchar 64
Google ID	Varchar 64
Current Gold	Integer
Mission Done	Integer
Highest Score	Integer
Longest Time	Integer

Table : Character	
Character Name	Varchar 20
Total HP	Integer
Speed	Integer
Max Level	Integer

Table : Weapons	
Weapon ID	Integer
Weapon Name	Varchar 20
Low Damage	Integer
High Damage	Integer
DPS	Integer

Table : Challenges	
Challenge ID	Integer
Challenge Name	Varchar 50
Challenge Brief	Text
Is Completed	Boolean
Is Repeatable	Boolean
Is Unlocked	Boolean

Table : Items	
Item ID	Integer
Item Name	Varchar 50
Destroyable	Boolean
Starting HP	Integer

Table : Enemy	
Enemy ID	Integer
Enemy Name	Varchar 50
Starting HP	Integer
Difficulty Class	Integer
Low Damage	Integer
High Damage	Integer

Table : Enemy Action	
Action ID	Integer
Action Name	Varchar 50
Enemy ID	Integer
Trigger Chance	Integer
Effect ID	Integer

5. Features breakdown & functions list

In this game you will play a character in the middle of an arena. The player starts with a basic weapon and waves of enemies arrive. When the player succeeds a wave, a new weapon appears on the screen and new items as life points and ammunitions.

It is an endless game with infinite number of rounds. Player can unlock several achievements during games and but there are also 'meta-achievements'.

a. Register & Login

When app starts, check if a user is already registered locally, else login with FB / Google / Mail (OAuth).
User can register via FB, Google, Mail or locally.

b. Multiplayer

On the main screen, player can choose if he wants to play solo / coop. It appears as a switching button

c. Personalize character

Ameliorate character specs and look with virtual money.
You can see best score (time and score)

d. Run game (endless)

A button on the bottom-center to run the game. Player starts in the middle of the screen with his selected weapon. Ammunitions and new weapons frequently pop on the screen.

e. Unlocked characters

Player can see unlocked characters and a little description about them.
He can also see how many characters he can still unlock.
Characters have specific specs which are ameliorable with virtual money.
Player can unlock some with virtual money won with achievements.

f. Achievements screen

Secret locked achievements and normal achievements with an explanation on how to unlock them.
Unlocked achievements on top of the list.
They are related to the gameplay but also there are also “meta successes”.

g. Leaderboards

This screen shows the name, time and score as a list.

6. Convention

The team will use exclusively English and will use CamelCase as naming convention.