Placell

Feel the power of evolution and bring your cell to victory.

Build a cell best suited to survive. Overcome the challenges of the environment and your neighbours in a race for domination. Utilize the power of evolution to create one celled masterpiece.

Will you decide to feed on inorganic matter or make the best of the situation and hunt your enemies? Should you evolve your cell into a complex system or a killing machine? Choose your own strategy.

Exploit fun game mechanics to construct a truly unique organism:

- **Start from scratch**: assemble your own cell from a variety of organelles to give it a special flavour. Just don't forget - your cell needs to be able to feed and turn food into energy to survive and multiply.
- **Choose the environment** where you want to develop. From mountain tops to depths of the ocean - the whole world is your domain.
- **Explore your environment**: look for deposits of useful materials, fit your need for resources, adjust to everchanging surroundings. Remember to check if you have enough oxygen to breathe.
- **Keep your enemies close**: use neighbouring organisms to your advantage forming symbiotic relationship, exploit them as a parasite or outright murder them for that presious organic matter.
- **Fulfill goals** on your way to domination - consume enough materials, populate surrounding areas, store enough energy - and get useful bonuses.
- **Mutate!** Nature is always changing and so should you: fill the power of evolution and modify your cell structure on the run, just don't fall victim to it.
- **Change the environment**: use byproducts of your metabolism to transform your surroundings, even build a lair. Creativity is key!
- **Find balance**: strive to achieve harmony in the world around you. All actions have consequences - and some may lead to disastrous events.

Explore the vast world of microorganisms and place your first cell!

Placell is a strategy game with a goal of surviving as a one celled organism. Game focuses on choosing one of many possible strategies to create and develop a cell best suited to succeed in a chosen environment. Player has control over the internal structure of the organism and its behaviour in the environment. Based on provided information, players shall make choices regarding immediate actions as well as long-term strategy needed to survive.

Game stages:

- Choice of location
- Creation of a cell
- Placing a cell into the environment

Choice of location:

Players will be able to choose one of possible locations. Every location will have its specifics, different amount of resources, different visual representation, different organisms living in it etc. Each location will require certain traits from a cell living in it which should be considered by the player.

Creation of a cell:

Players will have an ability to assemble a cell from a number of organelles. Their choices will be impacted by the type of lifestyle the cell will have in a chosen location.

Each cell will have a certain type of **metabolism**. It will have a combination of resources as input, energy and possibly other materials as output. Energy is required to sustain and support a cell's internal structure, to move around, to multiply etc. It's the most important resource for the cell. The main goal of metabolism is to provide a cell with a way of producing energy. There are a number of typical ways of going about it:

Autotrophs: inorganic matter -> energy
Examples of metabolic chains:
Ferrum -> energy (+ other materials)
Hydrogen sulfide -> sulfur -> energy
Ammonia -> nitrogen -> energy
Hydrogen -> energy

Carbon dioxide + Light -> energy (+ oxygen and other materials)
Oxygen -> Carbon dioxide + water + energy
etc.

Heterotrophs: organic matter -> energy
Reducents: dead organic matter -> energy (+ byproducts)
Parasites: exploit living organism -> energy
Predators: living organism -> energy

Some of these ways may intersect or combine to create a unique metabolism.

Organelles will be forming parts of metabolism, so by choosing organelles players also choose the cell's lifestyle.

Placing the cell into the environment:

Having created the cell it will be placed in the environment and the game begins. Aside from looking for resources and multiplying there are two other mechanics worth mentioning: goal system and mutation.

Goal system:
It might be difficult to realise what you want to do playing a one celled organism, so the game will have a goal system similar to the one in Cities: Skylines. Players need to achieve certain milestones like collecting enough food, multiplying at a high rate, accumulating high numbers of energy etc., and in return you will receive bonuses like higher efficiency of certain organelles, new available organelles, new available locations to play, free mutations etc. Goal system is in place with a purpose of making players comfortable and hooked on the game.

Mutation:
After placing a cell in the environment the only way of changing its internal structure is mutating. Mutation is a small or significant change to the organism. It varies from a small bonus in organell's efficiency to acquiring a brand new organelle or even whole new metabolism. You can acquire mutations in three ways: mandatory mutations that player has to control over, usually a response to changes in environment, mutations by event, where player can choose one of the provided options, mutation at players will after collecting enough mutation points. It's worth mentioning, mutations shall not necessarily be useful or beneficial to the organism.

Project is developed using Unity 2019.3.0 for mobile devices.

Team:
Illia Brylov (bryloill)
Yana Paluyan (paluyyan)