Unreal Life (Unreal Tournament Warfare in real life)

Basic rules

- There are two teams, composed of 1+ players
- Every team has a **base**
- **Bases** are connected between them with **checkpoints**
- **Checkpoints** can belong to one team at the time, to change checkpoint's allegiance it has to be "**captured**" (see related section)
- Fully connected checkpoints can't be captured by other team (fully connected == with all connected points belonging to the same team)
- Only connected checkpoint can be captured (to capture a checkpoint X team A should have a captured checkpoint Y, connected with X)
- Once the base is not connected with a checkpoint it becomes vulnerable, making possible to destroy it and win the game

Capture mechanics

- player should be physically present at checkpoint (GPS + Wi-Fi AP checks, **TODO find battery powered APs**)
- checkpoint has 3 possible statuses
    - owned by team A
    - owned by no one (neutral)
    - owned by team B
- capture speed depends on players count at the checkpoint

Combat mechanics

In case of stall (same number of players at checkpoint), the players will have to fight. The fight is done through a series of minigames, chosen at random. Player that loses has to do a base run (run to the base, check in there and go back) and is possibly banned for some time. Possible minigames are:

- "fight-club" step-by-step fight (player chooses which part of body to attack and which to defend)
- tap to win (laaags)
- rock/paper/scissors
- domino
- checkers

Fights may occur even without checkpoints. If two players are nearby, one player may propose to fight. Two ranges are possible: long and short, a fight in long range may be "fled", meanwhile in short range the second player is forced to fight or to do a base run (if he flees).

Idea: Bonus checkpoints

We may include checkpoints that are not crucial to proceed in the game, but which provides bonuses. For instance, team A captures a bonus point and keeps it for 90 seconds, after that timeout team B's capacity to capture checkpoints is reduced by 50% for a minute. Bonus point becomes neutral meanwhile.
This also may be helpful to solve deadlock, when all team B players defend a key checkpoint, and team A can't get through. Capturing bonus checkpoint will force team B players to move.

Other ideas

- Some kind of bonus depending on CP count
- Roles inside commands (attacker, defender, medic, etc…)
- Augmented reality map with camera
- Experience
- Achievements

Implementation notes

We will have to write a prototype, which we then can use to provide helpers to students. The idea is the evaluate students as soon as possible and determine which set of features we will let them to implement.

Minimal plan

- capture logic

Maximal includes all the above described, plus ideas.

What we can provide

- GPS helpers
- demo server
- protocol implementation
- GUI

Development environment

- Windows
- Android Studio (which is basically IntelliJ IDEA)
- Java 7
- git (via Stash)
- JIRA
- Bamboo

- Confluence

Описание мастерской

Название: Летняя Школа Юных Джедаев: “Пробуждение силы”

Jedi Masters: Dart Tuma (Тумайкин Данил Михайлович), Dart Conwor (Соловьев Владимир Валерьевич)
Jedi Knight: Холявко Павел

Давным-давно в одной далекой галактике, проходила Летняя Школа Юных Джедаев. Ученики разделились на приверженцев тёмной и светлой стороны. Началась война! Мы напишем игру об этой войне, а проходить она будет в настоящем мире с дополненной реальностью на мобильных устройствах (R2-D2 Android, “beep beep”)! Наши воены будут захватывать планеты (в пределах лагеря школы) с помощью силы и вступать в битвы на световых мечах.

А сделаем мы (сделаете вы!) всё это таким образом:
- *На реальность будет наложена карта с специальными точками*
- *Передвижения игроков будут отслеживаться через GPS*
- *Серверная часть проекта будет контролировать захват точек, проведение битв, общий ход игры*
- *Клиентская часть проекта на мобильниках игроков будет давать им доступ к игровым возможностям.*

Разработка будет идти на языке программирования Java в среде Android Studio. Приглашаются ученики 7-го класса и выше, знакомые с каким-либо процедурным языком программирования (Pascal, C, …). Знание языка Java и наличие Android-девайса приветствуются, но не являются обязательными.

Инструментарий: OS Windows, Android Studio, Java 7, FAR, git, JIRA

Цели мастерской:
1) *Изучить Java*
2) *Научится разрабатывать приложения под платформу Android*
3) *Научиться работать с сетью и познать дзен клиент-серверного взаимодействия*
4) *Понять, что такое треды, и зачем они нужны*
5) *Научиться использовать передовые методы разработки (VCS, bug tracking)*