

# Cross-compatible On-line Multiplayer Card Game BELKA with AI

## Specification

### Problem

Dozens of board-games such as chess, checkers, scrabble, rummikub, solitaire, poker migrated to the internet. Users from over the world can play them on their computers and mobile phones. In spite of this fact, nobody can play card game Belka on neither of those devices, because there is no any prototype of Belka at this moment (Belka is unique and truly a national game of Kazakhstan).

The game is considered worthy to develop because of its originality, which is the balance between the mathematical calculation, quick-wittedness and luck. It requires multi-players, but the user might not always find partners to play. Thus development of AI is proposed. This presumably will be the most challenging part of the project.

### Objectives

1. **Build plain prototype:** prepare foundation, that is: very basic UI, main objects (cards, players, etc). Then implement a prototype of the game which doesn't hold any rules and doesn't have on-line multiplayer mode.
2. **Integrate the rules:** integrate the rules of the game into prototype.
3. **On-line multiplayer mode:** integrate on-line multiplayer mode.
4. **Algorithm for a team:** create an algorithm for a team which simply follows the rules.
5. **Intelligent algorithm for a team:** create an algorithm for a team which not only follows the rules but also analyses the progress of the game and makes reasonable decisions.

### Methods

The objectives are planned to be realised in order they were listed above. However, some of the objectives are dependent on each other, some are not. The 3<sup>rd</sup> and the 4<sup>th</sup> objectives are not dependent on each other, which mean that their order is not important, they even could be realised simultaneously. On the other hand, the 5<sup>th</sup> objective cannot be reached without completing the 4<sup>th</sup>, because it is not feasible to develop an intelligent algorithm without having plain one. It is easier first to have an algorithm which follows the rules, and then make it "smarter".

## Timetable

Objective ID	Task	Predecessor	Term	Duration
0	Specification	-	1	1 October - 10 October
1	To build a web-based prototype of the game without rules and on-line multiplayer mode.	0	1	10 October - 20 October (10days)
2	Integrate the rules to the prototype.	0, 1	1	20 October - 10 November (30 days)
3	Add on-line multiplayer mode to the prototype.	0,1	1	10 November - 1 December (20 days)
4	Create algorithm for a team and integrate it to the prototype.	0,1,2	1-2	1 December - 15 January (45 days)
5	Create intelligent algorithm for a team and integrate it to the prototype.	0,1,2,4	2	15 January - 30 February (45 days)

## Resources

Notepad++, Google Chrome, Sony-Vaio VGN-NW115

## Legal, social, ethical and professional issues

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