

The goal of this thesis is to create a mobile phone application for speedcubers, which would contain several separate basic training tools, but would also allow future extension with new components. We would also like to achieve portability to various target platforms in the future.

Using the Xamarin.Forms framework, we implemented an application for the Android system and, in parallel, an experimental version for the Windows system, the purpose of which was to make sure of the promised portability. In addition, by using MEF, the design of the application allows easy extensibility with new components by simply adding new code and does not require modification of the application core itself.

The resulting application allows users to measure duration of a puzzle solve using a special timer with possibility to enable an inspection countdown, saves the measured times and displays them in a comprehensible table and graph. It also provides a metronome with an option to measure number of ticks between two moments and to store them. Furthermore, it displays personal records and allows the user to search for upcoming competitions according to various criteria. We support several different puzzles in the application and a scramble generator is available for each of them. In addition, we provide a random state generator for $2 \times 2 \times 2$, in which we use a simplified Kociemba's algorithm to find optimal solutions of the generated random states.