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In[1]:= myModel [populationSize_, mutationRate_, selectionStrength_] := (
    (*Set initial condition*)
    frequency1 = 0.1; (*frequency of the allele to be followed (A)*)
    numberOfGenerations = 40000;

    (*Initialise list in which we will save the frequencies from every pokolenie*)
    frequencies = Table[0, {numberOfGenerations}];
    For[i = 1, i ≤ numberOfGenerations, i++,
        (*mutation*)
        frequency1 = mutationRate * (1 - frequency1) + (1 - mutationRate) * frequency1;
        (*selection*)
        frequency1 = frequency1 * 
$$\frac{1 - \text{selectionStrength}}{(1 - \text{selectionStrength}) * \text{frequency1} + (1 - \text{frequency1})}$$
;
        (*sampling*)
        Na = RandomVariate[BinomialDistribution[populationSize, frequency1]];
        frequency1 = 
$$\frac{\text{Na}}{\text{populationSize}}$$
;
        (*saving values*)
        frequencies[[i]] = frequency1;
    ];
    ListPlot[frequencies, PlotRange → Automatic]
)

```

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In[2]:= myModel [10000, 0.0001, 0]
```

