Subject: New STEM4U package
Posted by koldo on Tue, 25 Feb 2020 07:11:22 GMT
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Hello all

Science, technology, engineering, and mathematics involve a huge need of computing.

New Bazaar package STEM4U includes libraries focused to make life easier for those who want to make a better world through science and technology.

From now it begins with a few libraries. However more will be added in the future. You all are invited to support it being part of the authors' list.

One example of library included is Rational, an arbitrary precision rational number

We use computers for doing floating point calculations. However even using 64 bit types, lack of precision in calculations produce inaccuracies that go accumulating over time, thus increasing the error.

For example, lets compute y = 2/1 * 3/2 * 4/3 * ... If done n times, result has to be n.

However, the code implementing this will fail:
```
double val = 1;
for (double d = 1; d < 100; ++d)
 val *= (d+1)/d;
Cout() << "double == 100: " << ((dval == 100) ? "true" : "false") << "\n"; // It returns false!?!?
```
Rational class solves this drawback implementing an arbitrary precision integer rational number.