

GAP Examples and Exercises 2

Write a function which loops over each of the first 10 positive integers and for each outputs either the integer itself, if it is prime, or its square. Try outputting this as a list. Experiment with formatting the output.

Discover the difference between while and repeat

```
gap> s := 2;
gap> repeat s := s + i^2; until s > 1;
gap> s;
gap> s := 2;
gap> while s <= 1 do s := s + i^2; od;
gap> s;
```

Can you write your loop function above using a different loop construction? Or even using built-in list functions? These might not be efficient or natural approaches - the idea is to learn and practise.

Re-run the demos from today's lecture. Follow the instructions and use the help where indicated (at least). Try variations on the constructions and functions seen.

Create a new operation and methods for your favourite type of GAP object. Mimic the example from the lecture. Read these in from a file and run them on your object(s), using the tracing functions to see when your methods are applied.

Explore and enjoy!

John McDermott, RISC Summer School 2008.