

### ### Functions and operators

# references

# <http://perldoc.perl.org/index-functions.html>

#### ## maths

# sum

\$a=2;

\$b=3;

\$r=\$a+\$b;

print \$r;

# subtraction

\$a=2;

\$b=3;

\$r=\$a-\$b;

print \$r;

# multiplication

\$a=2;

\$b=3;

\$r=\$a\*\$b;

print \$r;

# division

\$a=2;

\$b=3;

\$r=\$a/\$b;

print \$r;

# modulo operation

\$a=2;

\$b=3;

\$r=\$a%\$b;

print \$r;

# log (base e)

\$b=3;

\$r=log(\$b);

print \$r;

# e^(\$b)

\$b=3;

\$r=exp(\$b);

print \$r;

# exponential

\$a=2;

\$b=3;

\$r = \$a\*\*\$b;

print \$r;

# log10(\$b)

\$b=3;

\$r=log(\$b)/log(10);

print \$r;

# random numbers

\$r=rand(100);

print \$r;

#### ## strings

# concatenation

\$a="CTAGTCA";

\$b="CGGTGGTC";

\$r=\$a.\$b."\n";

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print $r;

# repetition
$a="CTAGTCA";
$r=$a x 2;
print $r."\n";

# lower case/upper case
$a="CtAgtCa";
print uc($a).\n";
print lc($a).\n";

# chop and chomp
$sequence="CGATCAGCTACGATCGAT\n";
print "--$sequence--";
print "\n";
chomp($sequence);
print "--$sequence--";
chop($sequence);
print "\n";
print "--$sequence--";

## arrays

# push, pop, shift and unshift
@genes=("Adh", "Hog");
push(@genes, "Swe");

$last_gene=pop(@genes);
$first_gene=shift(@genes);

print "First gene: $first_gene; Last gene: $last_gene\n";

unshift(@genes, "Yps");
print @genes;

# split
$line="Hog1,Mitogen-activated protein kinase involved in osmoregulation via three independent
osmosensors";
@data=split(/,/, $line);
print "$data[0]\n";

# join
@data=("ATGCAA", "6", "oligo1");
$out=join(";", @data);
print $out."\n";

# sort (not numeric!)
@disordered=(1,9,2,5,1,4,10);
@ordered=sort(@disordered);
$o=join(";", @ordered);
print "$o\n";

# sort (numeric)
@disordered=(1,9,2,5,1,4,10);
@ordered=sort({$a <=> $b} @disordered);
$o=join(";", @ordered);
print "$o\n";

# reverse
@ordered=("Adh", "Hog", "Swe");
$r=join(";", reverse(@ordered));
print "$r\n";

## hashes

# keys and values
%oligos=(

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    Adh=>"CGATCGGGTGCTA",
    Hog=>"CAGTTTGCTAGCT",
    Swe=>"CCCACTGTTTCAG"
);

@keys=keys(%oligos);
@values=values(%oligos);

$k=join(" ",@keys);
$v=join(" ",@values);

print "$k\n";
print "$v\n";

# delete
%oligos=(
    Adh=>"CGATCGGGTGCTA",
    Hog=>"CAGTTTGCTAGCT",
    Swe=>"CCCACTGTTTCAG"
);

delete($oligos{"Adh"});
@keys=keys(%oligos);
$k=join(" ",@keys);
print "$k\n";
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