Benchmarks for algorithms implemented in package HW6

1 Function: *mode*

Finding mode in 10 random variables from Poisson distribution

```
## Unit: microseconds
##          expr     min      lq      mean   median       uq     max neval
##  HW6::mode(x)  16.483  18.660  23.39684  22.5475  23.9470  90.502   100
##      modeR(x) 139.329 142.128 152.67147 143.8385 148.9705 554.518   100
```

Finding mode in 100 random variables from Poisson distribution

```
## Unit: microseconds
##          expr     min       lq      mean   median      uq     max neval
##  HW6::mode(x)  18.349  20.5265  24.42929  24.5690  26.435  59.401   100
##      modeR(x) 163.899 170.4300 180.75826 173.8505 178.205 414.879   100
```

Finding mode in 1000 random variables from Poisson distribution

```
## Unit: microseconds
##          expr     min      lq      mean   median       uq     max neval
##  HW6::mode(x)  39.497  44.007  49.09814  48.8275  51.4710   89.88   100
##      modeR(x) 419.854 426.386 464.29057 433.3825 448.7775 1583.94   100
```

Finding mode in 10000 random variables from Poisson distribution

```
## Unit: microseconds
##          expr      min       lq      mean   median       uq      max neval
##  HW6::mode(x)  297.630  307.116  361.0033  313.647  324.843 1237.793   100
##      modeR(x) 2921.254 2937.892 3197.6644 2969.305 3492.412 4215.338   100
```

2 Function: *perms*

Finding all permutation for an integer vector of length 2.

```
## Unit: microseconds
##           expr    min     lq     mean median     uq     max neval
##  HW6::perms(n) 17.727 18.971 22.44820 21.770 22.703 153.325   100
##       permn(n) 61.267 64.067 70.34275 66.555 67.643 445.667   100
```

Finding all permutation for an integer vector of length 4.

```
## Unit: microseconds
##           expr     min       lq      mean   median       uq      max neval
##  HW6::perms(n)  18.349  20.0600  24.40755  24.2585  26.1240   69.976   100
##       permn(n) 438.826 452.6655 483.38619 459.6630 490.6075 1278.534   100
```

Finding all permutation for an integer vector of length 6.

```
## Unit: microseconds
##           expr      min        lq        mean     median        uq
##  HW6::perms(n)    40.12    43.851    66.67288    73.5515    84.904
##       permn(n) 12289.61 12921.720 13234.33477 13096.0375 13612.148
##        max neval
##    151.769   100
##  16660.136   100
```

Finding all permutation for an integer vector of length 8.

```
## Unit: milliseconds
##           expr        min        lq       mean     median        uq
##  HW6::perms(n)   1.418797   1.46778   2.257536   1.491728   1.56699
##       permn(n) 745.798035 759.48498 788.032515 777.730142 818.27455
##        max neval
##   41.01076   100
##  842.74678   100
```

3 Function: *shortestpath*

Finding shortests path between two vertices in graph with 10 vertices and about 23 edges.

```
## Unit: microseconds
##                                                 expr     min      lq
##                         HW6::shortestpath(G, x, y)  18.349  20.215
##  shortest.paths(G1, x, y, algorithm = "dijkstra") 186.291 189.712
##       mean   median      uq     max neval
##   22.53839  21.7700  23.014  84.904   100
##  200.45409 191.4225 193.289 671.767   100
```

Finding shortests path between two vertices in graph with 11 vertices and about 3630 edges.

```
## Unit: microseconds
##                                                 expr     min      lq
##                         HW6::shortestpath(G, x, y)  19.282  20.837
##  shortest.paths(G1, x, y, algorithm = "dijkstra") 190.645 194.688
##       mean   median      uq     max neval
##   23.18218  23.0140  24.569  38.875   100
##  203.67607 196.3985 201.375 362.007   100
```

Finding shortests path between two vertices in graph with 12 vertices and about 5148 edges.

```
## Unit: microseconds
##                                                 expr     min       lq
##                         HW6::shortestpath(G, x, y)  18.971  20.5260
##  shortest.paths(G1, x, y, algorithm = "dijkstra") 186.913 190.8005
##      mean  median       uq     max neval
##   22.3083  22.237  23.6360  40.119   100
##  198.8399 193.444 195.4655 388.443   100
```

Finding shortests path between two vertices in graph with 225 vertices and about 12600 edges.

```
## Unit: microseconds
##                                                 expr     min       lq
##                         HW6::shortestpath(G, x, y)  18.971  21.3035
##  shortest.paths(G1, x, y, algorithm = "dijkstra") 191.578 196.3985
##       mean   median       uq     max neval
##   23.32214  23.1695  24.5690  42.919   100
##  206.32893 200.2860 208.0615 382.845   100
```