Programming Design, Spring 2016
Homework 6 Solution

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Problem 1

(a) Find the index i such that $x_i + x_{i+1} + x_{i+2}$ is the largest sum:

```
Initiate maxSum as x[1] + x[2] + x[3]
Initiate maxIndex as 1

for ( i from 1 to n-2 )
  let sum be x[i] + x[i + 1] + x[i + 2]
  if ( maxSum < sum )
    set maxIndex to i
    set maxSum to sum

return maxIndex
```

(b) Print all the possible combinations of three numbers:

```
for ( i from 1 to 8 )
  for ( j from i+1 to 9 )
    for ( k from j+1 to 10)
      Print i, j, k;
```

(c) Find an unassigned job with the largest benefit and assign it to the worker with the lowest total benefit. If the worker does not have enough time for it, assign the job to the second-lowest worker:

```
Initiate assigned[] to keep track of jobs assigning status

for every unassigned job (check assigned[])
  find one job with largest benefit
  for every worker
    find the lowest-benefit-sum worker with enough time for the job
  assign the job to the worker
  mark the job as assigned
```

Problem 2

Please see the attached CPP file.

Problem 3

Please see the attached CPP file.