

Sample of homework report

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August 25, 2010

1 Problem 1

1.1 Problem statement

Write a function which finds a maximum out of two user supplied numbers.

1.2 Solution

First we need to compare two numbers which leads to the straightforward if-else construct which selects the proper answer. However there is one special case when both inputs are the same. The comparison should have \geq comparison operator to include this case into decision tree. See the resulting function *find_max* in the listing 1.

Listing 1: Find max code

```
% Simple function to find maximum
% out of two user supplied numbers x1 and x2
% by Eugeniy Mikhailov
% 08/15/2010
%
% %%%%%%%%%%%
% x1 and x2 are user supplied inputs
% ret is return value which hold the largest of two input values
% %%%%%%%%%%%
function ret=find_max(x1,x2)
    % first we compare 2 numbers
    if (x1 >= x2)
        % notice greater or equal comparison
        % otherwise 'ret' value will not be assigned
        % for the case when x1 equals to x2
        ret = x1;
    else
        ret = x2;
```

```
end  
end
```

1.3 Test cases

To check the validity of the code I tried 3 possible combination of the input parameters. When first argument is smaller then second, when first argument is lager then second, and finally when they are both the same. The results of the tests are as expected (see listing 2.

Listing 2: Find max code test

```
octave:1> find_max(1,10)  
ans = 10  
octave:2> find_max(10,1)  
ans = 10  
octave:3> find_max(10,10)  
ans = 10
```