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| --- | --- | --- | --- | --- | --- |
| Exercise | 1a | 1b | 2a | 2b |  |
| Done? |  |  |  |  |  |

**Exercise 1**: a) You have a cash register with $20, $10, $5, $2, $1, $0.25, $0.10, $0.05 and $0.01 bills or coins. Write a program to make change – so that, for example, if someone gives you a $10 bill for something costing $6.55 the program will calculate that you get back $3.45 in change consisting of a $2, and $1, a $0.25, and 2 $0.10

It may be useful to use the fix() function, which rounds its (>0) input to the nearest positive integer less than or equal to the input.

Store the denominations in a variable denom=[20 10 5 2 1 0.25 0.10 0.05 0.01] , the item cost in cost, the money provided in payment, and store the change in a vector change of the same size as denom.

b) Turn this into a function called getchange that will take as input cost, payment, denom, return change and check that the customer gave the seller enough money for their purchase(s).

**Exercise 2:** a) For x1=[1 7 -8 2 -3 -9] what is contained in y2 in each case after the code runs? Do these three snippets of code do the same thing? Show your work.

|  |  |  |
| --- | --- | --- |
| k=0;  y2=[];  for i=1:length(x1)  if x1(i)<0  k=k+1;  y2(k)=x1(i);  end  end | y2=x1;  k=0;  for i=1:length(x1)  if x1(i)<0  k=k+1;  y2(k)=x1(i);  end  end | y2=[];  for i=1:length(x1)  if x1(i)<0  y2=[y2, x1(i)];  end  end |

b) How would we write a piece of code that does exactly the same thing as the first one above without using loops?