

HASH Function:

1. convert the 3 char's in CODE to their 3 ASCII codes (giving 3 int's, all between 65 to 90, inclusive)
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
2. multiply those 3 numbers together (giving a number between $65*65*65=274,625$ through $90*90*90=729,000$)
3. use the famous "division-remainder" algorithm to get homeAddress
(i.e., use the remainder (the % operator) from dividing step #2 result by MAX_N_HOME_LOC)
(giving a number between 0 and MAX_N_HOME_LOC – 1, inclusive)
4. if remainder is 0, change it to MAX_N_HOME_LOC (giving a number between 1 and MAX_N_HOME_LOC, inclusive)
5. return that as the homeAddress

Country Code	3 ASCII codes	Multiplied together	Home Address
MEX	77 * 69 * 88	467,544	4
CHN	67 * 72 * 78	376,272	12
JPN			20
USA			15
FRA			20
BEL			4
GBR			12
HTI			4
VEN			12
NIC			18
POL			20
YEM			17
EGY			11
LBN			8
IND			12
OMN			14
DEU			20
SOM			9
WSM			17
KEN			10
XVI			4
QAT			20
ZWE			10
RUS			10
TCA			20
ATA			20

This structure is NOT in memory – it's just a worksheet to determine HOME ADDRESS (based on HashFunction)