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```
clc;
close all;
clear all;

valid = false;
```

Step 1: Put 5 numbers in each row (just mark positions)

```
while ~valid

ticket = zeros(3,9);
for r = 1:3
    cols = randperm(9,5);
    ticket(r, cols) = 1;
end
```

Step 2: Check each column has at least 1 and at most 3 numbers

```
colCount = sum(ticket == 1, 1);
if any(colCount == 0) || any(colCount > 3)
    continue; % bad layout # try again
end
```

Step 3: Fill numbers column-wise

```
for c = 1:9
rows = find(ticket(:,c) == 1);
howMany = length(rows);
if howMany == 0
continue;
end

% column no. range
if c == 1
    pool = 1:9;
elseif c == 9
    pool = 80:90;
```

```

        else
            pool = (c-1)*10 : (c*10 - 1);
        end

        % for unique numbers
        nums = sort(randsample(pool, howMany));

        for k = 1:howMany
            ticket(rows(k), c) = nums(k);
        end
    end

    valid = true;    % ticket is good

end

```

Display Ticket

```

fprintf('\n----- TAMBOLA TICKET ----- \n\n');

for r = 1:3
    for c = 1:9
        if ticket(r,c) == 0
            fprintf('[   ]');
        else
            fprintf(['%2d'], ticket(r,c));
        end
    end
    fprintf('\n');
end

```

----- TAMBOLA TICKET -----

```

[ 3][15][   ][   ][45][51][   ][71][   ]
[   ][16][21][   ][   ][   ][61][73][81]
[ 9][   ][   ][31][   ][56][69][   ][86]

```

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