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```

output = '##p: 6\n##id: yw\n';
% Q1 Check length
input = splitlines(fileread('P6Q1.txt'));
valid = zeros(1, 100);
for t = 1:100
    valid(t) = (length(input{t}) == 4) * 1;
end
valid
output = [output '##1: ' mat2str(valid) '\n'];
% Q2 Check valid characters
input = splitlines(fileread('P6Q2.txt'));
valid = ones(1, 100);
for t = 1:100
    for s = 1:4
        valid(t) = valid(t) * max(input{t}(s) == 'QCWBJIFKocsudex513074');
    end
end
valid
output = [output '##2: ' mat2str(valid) '\n'];
% Q3 Check contain upper case letter
input = splitlines(fileread('P6Q3.txt'));
valid = zeros(1, 100);
for t = 1:100
    for s = 'QCWBJIFK'
        valid(t) = max(valid(t), max(input{t} == s));
    end
end
valid
output = [output '##3: ' mat2str(valid) '\n'];
% Q4 Check contain digit (use helper function)
input = splitlines(fileread('P6Q4.txt'));
valid = zeros(1, 100);
for t = 1:100
    valid(t) = containsOne(input{t}, '513074');
end
valid
output = [output '##4: ' mat2str(valid) '\n'];
% Q5 Check everything
input = splitlines(fileread('P6Q5.txt'));
valid = zeros(1, 100);
for t = 1:100
    valid(t) = (length(input{t}) == 4 &&
    isValid(input{t}, 'QCWBJIFKocsudex513074') &&
    containsOne(input{t}, 'QCWBJIFK') && containsOne(input{t}, 'ocsudex') &&
    containsOne(input{t}, '513074')) * 1;
end
valid
output = [output '##5: ' mat2str(valid) '\n'];
% Q6
list = '';
for s = '513074'
    list = [list s 'Cus '];
end

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end
list
output = [output '##6: ' list '\n'];
% Q7
list = '';
for s = 'QCWBJIFKocsudex513074'
    list = [list s 'Jd1 '];
end
list
output = [output '##7: ' list '\n'];
% Q8
list = '';
for s = 'ocsudex'
    for t = '513074'
        list = [list 'K' s 'C' t ' '];
        list = [list 'K' t 'C' s ' '];
    end
end
list
output = [output '##8: ' list '\n'];
% Q9
list = '';
for s = 'QCWBJIFKocsudex'
    for t = '513074'
        list = [list 'e' s t 'F '];
        list = [list 'e' t s 'F '];
    end
end
for s = '513074'
    for t = '513074'
        list = [list 'e' s t 'F '];
    end
end
list
output = [output '##9: ' list '\n'];
% Q10 and write to file
output = [output '##10: None'];
file = fopen('P6.txt', 'wt');
fprintf(file, output);
fclose(file);
function v = isValid(text, set)
    v = 1;
    for s = text
        v = v * max(s == set);
    end
end
function c = containsOne(text, set)
    c = 0;
    for s = set
        c = max(c, max(text == s));
    end
end
end

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valid =

Columns 1 through 13

1 0 0 1 1 0 1 1 0 1 0 1 1

Columns 14 through 26

0 1 1 1 0 0 0 1 0 1 0 1 0

Columns 27 through 39

0 0 0 1 0 1 1 1 0 1 1 0 0

Columns 40 through 52

0 1 1 1 1 1 1 1 0 0 0 0 1

Columns 53 through 65

0 0 1 1 1 0 0 1 0 1 1 0 0

Columns 66 through 78

0 1 0 0 0 0 1 0 1 1 1 0 0

Columns 79 through 91

1 1 1 0 1 1 1 1 0 0 1 1 1

Columns 92 through 100

0 0 0 1 1 1 1 0 1

valid =

Columns 1 through 13

1 0 0 0 0 0 0 1 0 0 1 0 1

Columns 14 through 26

0 1 1 0 1 1 1 1 0 0 0 1 1

Columns 27 through 39

1 0 0 0 0 1 1 0 0 0 0 0 0

Columns 40 through 52

0 0 1 1 0 0 1 1 0 1 1 1 0

Columns 53 through 65

---

0 0 1 1 1 1 1 0 0 1 0 1 0

Columns 66 through 78

1 0 0 0 0 0 0 0 0 0 1 0 0

Columns 79 through 91

1 1 1 0 1 1 1 1 0 1 1 1 1

Columns 92 through 100

1 0 1 1 0 0 0 1 1

valid =

Columns 1 through 13

1 1 0 1 0 0 1 0 1 1 0 0 1

Columns 14 through 26

1 0 1 0 1 0 1 1 0 1 1 1 0

Columns 27 through 39

1 1 0 0 1 0 1 0 1 0 0 0 1

Columns 40 through 52

1 0 1 1 0 0 1 1 1 1 1 1 1

Columns 53 through 65

1 1 0 1 1 1 1 0 0 0 0 1 1

Columns 66 through 78

0 0 0 0 0 1 1 0 0 0 1 1 1

Columns 79 through 91

0 1 0 1 1 0 1 0 1 1 0 0 0

Columns 92 through 100

1 1 0 0 0 1 0 1 1

valid =

Columns 1 through 13

---

---

0 1 0 1 1 0 1 1 1 0 1 1 0  
Columns 14 through 26

1 1 1 0 1 0 0 0 0 1 0 1 1  
Columns 27 through 39

1 1 1 1 1 1 0 1 1 0 1 1 1  
Columns 40 through 52

0 0 0 0 1 1 0 0 0 1 1 0 1  
Columns 53 through 65

0 1 1 1 1 0 1 0 0 1 1 0 0  
Columns 66 through 78

0 0 1 1 0 1 1 0 0 0 0 1 0  
Columns 79 through 91

1 1 1 1 0 1 1 0 1 0 0 1 0  
Columns 92 through 100

1 1 1 0 1 1 1 0 0

valid =

Columns 1 through 13

1 0 1 1 0 1 1 1 1 1 1 1 0

Columns 14 through 26

1 1 1 1 0 1 1 0 0 1 0 1 1

Columns 27 through 39

1 0 1 1 0 1 1 0 0 0 0 0 0

Columns 40 through 52

1 0 1 0 1 1 1 0 0 1 1 1 0

Columns 53 through 65

1 0 1 0 0 0 0 1 1 1 1 1 0

---

Columns 66 through 78

1 1 0 1 1 1 1 1 1 1 1 0 0

Columns 79 through 91

1 0 0 0 0 0 0 0 0 1 1 1 0

Columns 92 through 100

0 0 0 0 0 1 0 1 1

list =

'5Cus 1Cus 3Cus 0Cus 7Cus 4Cus '

list =

'QJd1 CJd1 WJd1 BJd1 JJd1 IJd1 FJd1 KJd1 oJd1 cJd1 sJd1 uJd1 dJd1 eJd1  
xJd1 5Jd1 1Jd1 3Jd1 0Jd1 7Jd1 4Jd1 '

list =

'KoC5 K5Co KoC1 K1Co KoC3 K3Co KoC0 K0Co KoC7 K7Co KoC4 K4Co KcC5 K5Cc  
KcC1 K1Cc KcC3 K3Cc KcC0 K0Cc KcC7 K7Cc KcC4 K4Cc KsC5 K5Cs KsC1 K1Cs KsC3  
K3Cs KsC0 K0Cs KsC7 K7Cs KsC4 K4Cs KuC5 K5Cu KuC1 K1Cu KuC3 K3Cu KuC0 K0Cu  
KuC7 K7Cu KuC4 K4Cu KdC5 K5Cd KdC1 K1Cd KdC3 K3Cd KdC0 K0Cd KdC7 K7Cd KdC4  
K4Cd KeC5 K5Ce KeC1 K1Ce KeC3 K3Ce KeC0 K0Ce KeC7 K7Ce KeC4 K4Ce KxC5 K5Cx  
KxC1 K1Cx KxC3 K3Cx KxC0 K0Cx KxC7 K7Cx KxC4 K4Cx '

list =

'eQ5F e5QF eQ1F e1QF eQ3F e3QF eQ0F e0QF eQ7F e7QF eQ4F e4QF eC5F e5CF  
eC1F e1CF eC3F e3CF eC0F e0CF eC7F e7CF eC4F e4CF eW5F e5WF eW1F e1WF eW3F  
e3WF eW0F e0WF eW7F e7WF eW4F e4WF eB5F e5BF eB1F e1BF eB3F e3BF eB0F e0BF  
eB7F e7BF eB4F e4BF eJ5F e5JF eJ1F e1JF eJ3F e3JF eJ0F e0JF eJ7F e7JF eJ4F  
e4JF eI5F e5IF eI1F e1IF eI3F e3IF eI0F e0IF eI7F e7IF eI4F e4IF eF5F e5FF  
eF1F e1FF eF3F e3FF eF0F e0FF eF7F e7FF eF4F e4FF eK5F e5KF eK1F e1KF eK3F  
e3KF eK0F e0KF eK7F e7KF eK4F e4KF eo5F e5oF eo1F e1oF eo3F e3oF eo0F e0oF  
eo7F e7oF eo4F e4oF ec5F e5cF ec1F e1cF ec3F e3cF ec0F e0cF ec7F e7cF ec4F  
e4cF es5F e5sF es1F e1sF es3F e3sF es0F e0sF es7F e7sF es4F e4sF eu5F e5uF  
eu1F e1uF eu3F e3uF eu0F e0uF eu7F e7uF eu4F e4uF ed5F e5dF ed1F e1dF ed3F  
e3dF ed0F e0dF ed7F e7dF ed4F e4dF ee5F e5eF ee1F e1eF ee3F e3eF ee0F e0eF  
ee7F e7eF ee4F e4eF ex5F e5xF ex1F e1xF ex3F e3xF ex0F e0xF ex7F e7xF ex4F  
e4xF e55F e51F e53F e50F e57F e54F e15F e11F e13F e10F e17F e14F e35F e31F  
e33F e30F e37F e34F e05F e01F e03F e00F e07F e04F e75F e71F e73F e70F e77F  
e74F e45F e41F e43F e40F e47F e44F '

