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Report: hw2

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Description:

I finish this homework by using two weeks time. At the first, I have misunderstood the instruction given so I have done in the wrong way and the wrong codes will be shown in the last page. After that, I try to ask the tutorial assistance, seniors and also course mate to solve my problems. In this homework, I have learnt that the ways to debug and also the correct ways to use for loops inside the for loops. The concept that I used in the program is for loops and if-else. As the argument is not fix so for loops is used to control the program to run ‘P’times in order to make sure that all the integer of input answer have been read and determine. The if-else is used to determine the argument have been inserted in the correct form, if the form inserted is not correct, the program will be directly ended. In addition, as the argument inserted is in the strings form, typecast technique is used to transform the string form into integer form. The ways of separating the ‘P’-digit input answer into ‘P’integer is by diving and take the reminder. In this two weeks I have experienced that sleep at 3am everyday.

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Code:

1 #include<stdio.h>

2 #include<stdlib.h>

3 #include<time.h> //to set a random number

4 #include<string.h> //to check the length of the input integer

5

6 int main(int argc,char \*argv[])

7 {

8 int H,X,N,P,Lp,Ln,i,j,t,input,g,m,x,y;

9 Ln=strlen(argv[1]); //Ln=the length of input N

10 Lp=strlen(argv[2]); //Lp=the length of input P

11 if (Lp!=1||Ln!=1) //to check that if the command agrument list is not single digit

12 {

13 printf("the command argument list is larger than 1-9.\n");

14 return 0;

15 }

16

17 //to typecast the strings to integer

18 N=atoi(argv[1]);

19 P=atoi(argv[2]);

20 if(N==0||P==0) //the integer '0' is not accepted

21 {

22 printf("The input of N or P is not valid.\n");

23 return 0;

24 }

25

26 if (P>N){ //the number of positions can't larger than the number of integer to play with

27 printf("since P>N,the program is not work,plaese input correctly.\n");

28 return 0;}

29

30 printf("The number of integer to play with:%d\nThe number of positions: %d\n",N,P);

31

32 //to initialise the array to 0

33 int answer[100]={0};

34 int yo[100]={0};

35 //to set the answer ramdomly and also make sure that the integer of the answer didn't repeat

36 srand(time(NULL));

37 for(i=1;i<=P;i++)

38 answer[i]=(rand()%N)+1;

39

40 for (i=1;i<=P;i++)//make sure that the integer of the answer didn't repeat

41 {

42 t=0;

43 while (t==0)

44 {

45 t=1;

46 for (j=1;j<i;j++)

47 {

48 if (answer[i]==answer[j])

49 {

50 answer[i]++;//when there are numbers repeated, number in array 'answer[i]'will plus to make it different from others

51 if (answer[i]>N)

52 answer[i]=1;

53 t=0;

54

55 }

56 }

57 }

58 }

59 printf("ANSWER:");

60

61 for (i=1;i<=P;i++)

62 printf("%d",answer[i]);

63 printf("\n");

64 //to initialise the array to 0

65 int guess[100]={0};

66 //user input the answer and program allocate the unput into array

67 printf("YOUR ANSWER:");

68 g=0;//When the answer of user guess is not exactly correct, there is a marking that let the loop to continue and user.

69 while(g==0)

70 {

71 for (x=1;x<=P;x++)

72 yo[x]=0;

73 scanf("%d",&input);//let the users to guess

74 for(m=P;m>=0;m--)//because the integer divided from the 'input' have been reversed so the order of the loop is also reversed

75 {

76 guess[m]=input%10;//take the remainder and put into the array

77 input=input/10;//input divide by 10

78 }

79

80 H=0,X=0;//to initialise the variables to 0

81 for(i=1;i<=P;i++) //process to calculate the number of H and X

82 {

83 y=0; //marking that 'i'th arrays have a 'H'

84 if(answer[i]==guess[i]) //to calculate H by determing the number of 'i' in both array are the same

85 {

86 y=1;

87 H=H+1;

88 }

89

90 for(j=1;j<=P;j++)

91 {

92 if (answer[i]==guess[j] && y==0)//to calculate X by determining that the 'i'th of both arrays have no marking 'y'

93 {

94 X=X+1;

95

96 }

97 }

98 }

99

100 printf("There are %dH and %dX.\n",H,X);//the number of 'H's and 'X's calculated is shown

101

102 if (H!=P)

103 {

104 g=0;

105 printf("Please try again");

106 printf("\n");

107 printf("YOUR ANSWER:");

108 }

109 if (H==P)

110 {

111 g=1;//markings of there are 'N' of 'H' and the answer is correct

112 printf("BINGO!!!!!!");

113 printf("\n");

114 }

115

116 }

117

118 return 0;//the program ends.

119

120 }

Compilation:

gcc -o hw2 hw2.c

Execution:

./ hw2

Output:

F74045018@c-2015-1:~/hw2> gcc -o hw2 hw2.c

F74045018@c-2015-1:~/hw2> ./hw2 9 7

The number of integer to play with:9

The number of positions: 7

ANSWER:3981724

YOUR ANSWER:3881736

There are 4H and 0X.

Please try again

YOUR ANSWER:3984172

There are 3H and 4X.

Please try again

YOUR ANSWER:3981724

There are 7H and 0X.

BINGO!!!!!!

The wrong ways I did the program before:

Code:

1 #include<stdio.h>

2 #include<stdlib.h>

3 #include<time.h>

4 int main(){

5 int a;

6 int b;

7 int c;

8 int d;

9

10 int M;

11 int N[4]={1,2,3,4};/\*the integer inside the array can only be 1,2,3,4,5\*/

12

13 printf("Please insert 4 integers within the range of 1 to 5, linespaces are required to separate each integer.\n");

14

15 do{

16 scanf("%d",&M);

17 d=M%10;

18 c=(M/10)%10;

19 b=(M/100)%10;

20 a=(M/1000)%10;

21

22 if ((a>5||a==0)||(b>5||b==0)||(c>5||c==0)||(d>5||d==0))

23 {

24 printf("the input integer over the range of integer given.");

25 }

26 else if(a==b||a==c||a==d||b==c||b==d||d==c)

27 if(a=b||a==c||a==d||b==c||b==d||d==c)

28 {

29 printf("the input integer repeat");

30 }

31 else

32 { }

33

34 else if(a==1&&b==2&&c==3&&d==4)

35 if(a==1&&b==2&&c==3&&d==4)

36 {

37 printf("4H\n");

38 }

39 else

40 {}

41

42

43 else if((a==1&&b==2&&c==3&&d!=4)||(a==1&&b==2&&c!=3&&d==4)||(a==1&&b!=2&&c==3&&d==4)||(a!=1&&b==2&&c==3&&d==4))

44 if((a==1&&b==2&&c==3&&d!=4)||(a==1&&b==2&&c!=3&&d==4)||(a==1&&b!=2&&c==3&&d==4)||(a!=1&&b==2&&c==3&&d==4))

45 {

46 printf("3H");

-- INSERT -- 6,7 5%

47 }

48 else

49 { }

50

51 else if((a==1&&b==2&&c!=3&&d!=4)||(a!=1&&b!=2&&c==3&&d==4)||(a==1&&b!=2&&c!=3&&d==4)||(a!=1&&b==2&&c==3&&d!=4)||(a!=1&&b==2&&c!=3&&d==4)||(a==1&&b!=2&&c==3&&d!=4))

52 if((a==1&&b==2&&c==4&&d==3)||(a==2&&b==1&&c==3&&d==4)||(a==1&&b==3&&c==2&&d==4)||(a==4&&b==2&&c==3&&d==1)||(a==3&&b==2&&c==1&&d==4)||(a==1&&b==4&&c==3&&d==2))

53 {

54 printf("2H2X");

55 }

56 else

57 {

58 if((a==1&&b==2&&c==4&&d!=3)||(a==2&&b!=1&&c==3&&d==4)||(a==1&&b==3&&c!=2&&d==4)||(a==4&&b==2&&c==3&&d!=1)||(a==1&&b==4&&c==3&&d!=2)||(a==1&&b==2&&c!=4&&d==3 )||(a!=2&&b==1&&c==3&&d==4)||(a==1&&b!=3&&c==2&&d==4)||(a!=4&&b==2&&c==3&&d==1)||(a==1&&b!=4&&c==3&&d==2))

59 {

60 printf("2H1X");

61 }

62 else

63 {

64 printf("2H");

65 }

66

67 }

68

69

70 else if(a==1||b==2||c==3||d==4)

71

72 if((a==1&&b==4&&c==2&&d==3)||(a==1&&b==3&&c==4&&d==2)

73 ||(b==2&&a==4&&c==1&&d==3)||(b==2&&a==3&&c==4&&d==1)

74 ||(c==3&&a==2&&b==4&&d==1)||(c==3&&a==4&&b==1&&d==2)

75 ||(d==4&&a==3&&b==1&&c==2)||(d==4&&a==2&&b==3&&c==1))

76 {

77 printf("1H3X");

78 }

79 else

80 {

81 if((a==1&&b==1||3||4&&c==1||2||4&&d!=1||2||3||4)

82 ||(a==1&&b==1||3||4&&c!=1||2||3||4&&d==1||2||3)

83 ||(a==1&&b!=1||2||3||4&&c==1||2||4&&d==1||2||3)

84

85 ||(a==2||3||4&&b==2&&c==1||2||4&&d!=1||2||3||4)

86 || (a==2||3||4&&b==2&&c!=1||2||3||4&&d==1||2||3)

-- INSERT -- 47,3-6 48%

87 ||(a!=1||2||3||4&&b==2&&c==1||2||4&&d==1||2||3)

88

89 ||(a==2||3||4&&b!=1||2||3||4&&c==3&&d==1||2||3)

90 ||(a!=1||2||3||4&&b==1||3||4&&c==3&&d==1||2||3)

91 ||(a==2||3||4&&b==1||3||4&&c==3&&d!=1||2||3||4)

92

93 ||(a==2||3||4&&b==1||3||4&&c!=1||2||3||4&&d==4)

94 ||(a==2||3||4&&b!=1||2||3||4&&c==1||2||4&&d==4)

95 ||(a!=1||2||3||4&&b==1||3||4&&c==1||2||4&&d==4))

96 {

97 printf("1H2X");

98 }

99 else

100 {

101 //as the input integer can't be repeated,so the output of '1H1X' will never appear.

102 }

103 }

104

105 else if (a==2||3||4&&b==1||3||4&&c==1||2||4&&d==1||2||3)

106 if (a==2||3||4&&b==1||3||4&&c==1||2||4&&d==1||2||3)

107 {

108 printf("4X");

109 }

110 else

111 {

112 if((b==1||3||4&&c==1||2||4&&d==1||2||3)||(a==2||3||4&&c==1||2||4&&d==1||2||3)||(a==2||3||4&&b==1||3||4&&d==1||2||3)||(a==2||3||4&&b==1||3||4&&c==1||2||4))

113 {

114 printf("3X");

115 }

116 else

117 {

118 //as the input integer can't be reeated,so the output of '2X','1X''0X'will never appear.

119 }

120 }

121

122 }while((a!=1)&&(b!=2)&&(c!=3)&&(d!=4));

123 return 0;

124 }

125

126

127 /\*else if(a==1&&b==2&&c==3&&d==4)

8 34 if(a==1&&b==2&&c==3&&d==4)

129 35 {

130 36 printf("4H\n");

131 37 }

132 38 else

133 39 { }