

READ THIS DOCUMENT
THOROUGHLY BEFORE STARTING

Must be submitted until : 2.12.2016 17:00

Introduction to Programming

Assignment III

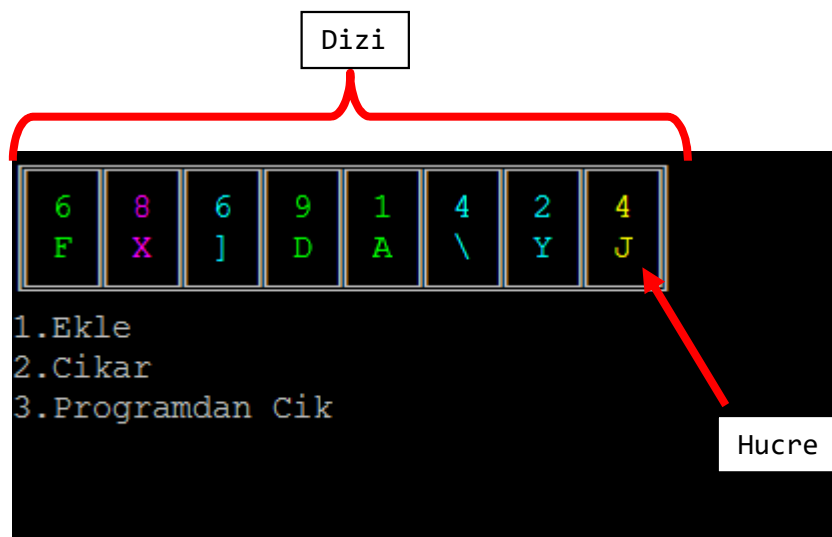
Question 1

Write a C++ program that uses a character array to create an animation shown below.

Sample Program Video

http://kayhanayar.com/dersler/programlamayagiris/2016/odev3_soru1.gif

Starting Screen of the Program



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Hucre Class

```
class Hucre
{
public:
    Hucre();

    char karakter;

    int renk;

    int adet;
};
```

Hucre class has the following properties

- A character variable
- A variable for the color
- A variable for the number of character

When an object is created from **Hucre** class. Constructor should do the following

- Character variable must be assign randomly between 'A' – 'Z'
- renk variable must be assign between 9-14
- adet variable must be assign between 0-9

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Dizi Class

```
class Dizi
{
public:
    Dizi();

    int hucreEkle();

    int hucreCikar();

    void ciz();
private:
    int hucreSayisi;

    Hucre hucreler[MAX];
};
```

Dizi class has the following properties

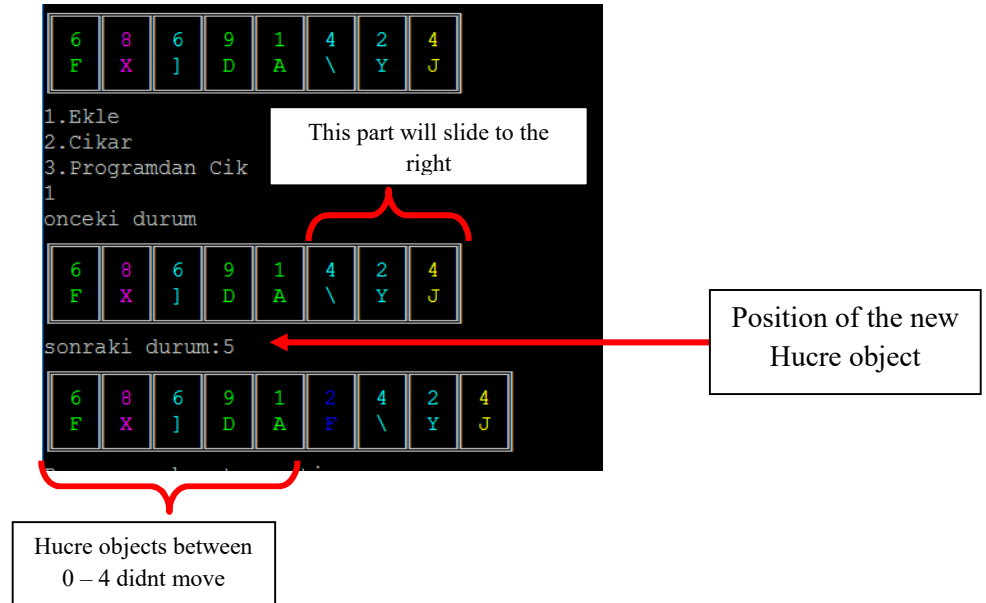
- it has an array of Hucre objects
- it has a variable to count how many Hucre object was added before

When a Dizi object is created Dizi constructor should do the following

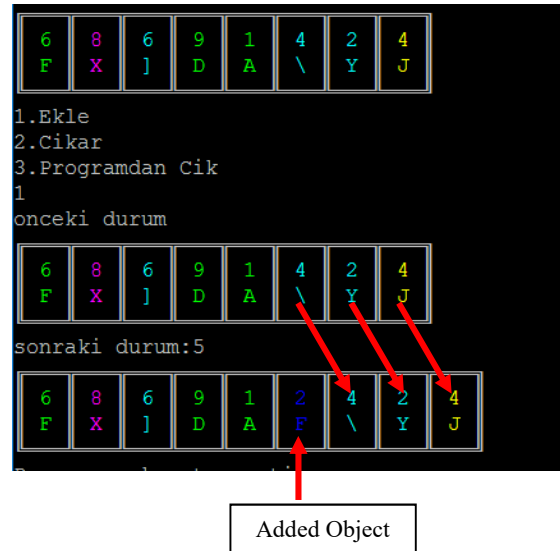
- hucreSayisi variable must be assign to 0.

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hucreEkle function, will add a Hucre object to Dizi object. Newly added object position must be chosen randomly. (**Position must be below hucreSayisi**)

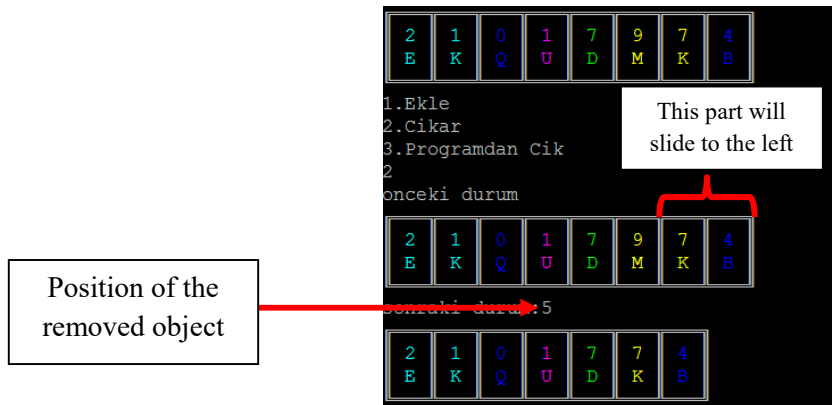


(After adding operation hucreSayisi must be increased by 1)



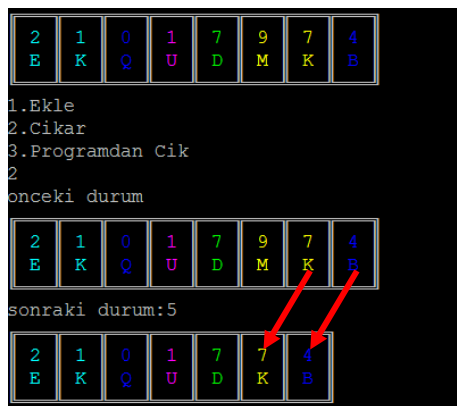
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hucreCikar function,will remove a Hucre object from Dizi object. Removed object position must be choosen randomly. (**Position must be below hucreSayisi**)



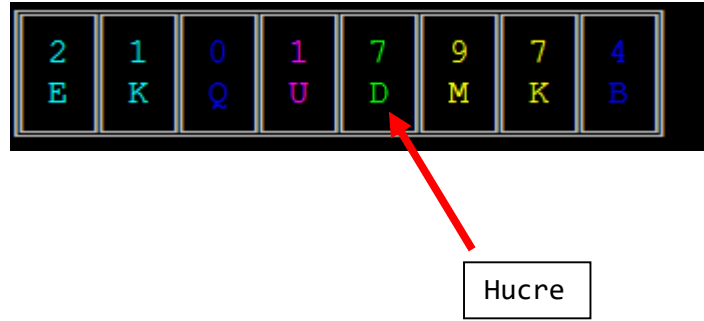
Removing an object from the array is just moving every object that comes after the choosen position, to the left

(After removing operation hucreSayisi must be decreased by 1)



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hucreCiz function will print every Hucre object on the screen like shown below



Character Codes

<code>char</code> DUZCIZGI = 205;	=
<code>char</code> SOLUSTKOSE = 201;	Ɔ
<code>char</code> SAGUSTKOSE = 187;	Ɔ
<code>char</code> DIKEYCIZGI = 186;	Ɔ
<code>char</code> ASAGIAYRAC = 203;	Ɔ
<code>char</code> SOLALTKOSE = 200;	Ɔ
<code>char</code> SAGALTKOSE = 188;	Ɔ
<code>char</code> YUKARIAYRAC = 202;	Ɔ

Color Codes

```
enum RENKLER
{
    LIGHTBLUE = 9,
    LIGHTGREEN = 10,
    LIGHTCYAN = 11,
    LIGHTRED = 12,
    LIGHTMAGENTA = 13,
    YELLOW = 14,
};
```

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SAMPLE PROGRAMS AND THEIR OUTPUTS

1.

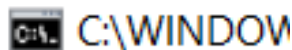
```
cout << SOLUSTKOSE << DUZCIZGI << DUZCIZGI << SAGUSTKOSE << endl;
```



2.

```
cout << SOLUSTKOSE << DUZCIZGI << DUZCIZGI << SAGUSTKOSE << endl;
```

```
cout << DIKEYCIZGI << " " << " " << DIKEYCIZGI << endl;
```



3.

```
cout << SOLUSTKOSE << DUZCIZGI << DUZCIZGI << SAGUSTKOSE << endl;
```

```
cout << DIKEYCIZGI << " " << " " << DIKEYCIZGI << endl;
```

```
cout << SOLALTKOSE << DUZCIZGI << DUZCIZGI << SAGALTKOSE << endl;
```



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BASIC FORMATTING RULES

Every C++ source code file must have a comment section(shown in below) that describe the Project. Every file missing this block will cost 10 point in assignment grade result (**do not copy this block directly from pdf**)

```
/******  
**                               SAKARYA ÜNİVERSİTESİ  
**                               BİLGİSAYAR VE BİLİŞİM BİLİMLERİ FAKÜLTESİ  
**                               BİLGİSAYAR MÜHENDİSLİĞİ BÖLÜMÜ  
**                               PROGRAMLAMAYA GİRİŞİ DERSİ  
**  
**                               NAME.....:  
**                               STUDENT NUMBER.:  
*****/
```

Variable names should mean something.

TRUE
<code>int a;</code>

FALSE
<code>int oddCount;</code>

After every semicolon code should have a empty space. You can use a tab button.

TRUE
<pre>if(true) { int a =6; cout<<"Merhaba"; if(false) cout<<"Nasilsin"; }</pre>

FALSE
<pre>if(true) { int a =6; cout<<"Merhaba"; if(false) cout<<"Nasilsin"; }</pre>

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Submission Rules

FILES THAT NEED TO UPLOADED SCHOLOGY

Files Names: StudentNumber.cpp

- For Instance let's assume student number b000110002;
 - **b000110002.cpp**

COMPILER AND LAST SUBMISSION DATE

Assignment will be compile by using visual C++ 2015.

Mistakes made in file name will cost 20 point.

Late submitted assignments will not be graded

DONT SHARE YOUR CODE

This assignment must be done alone. You must not share your code with any student or take code from somebody else. Every assignment will be compared by a software that can detect plagiarism. Any assignment that violate this rule will not be graded.

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