Computer Programming Project 1

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Project 1

1. Write a program "Dice Rolling Game"

2. Project guideline is as follows :

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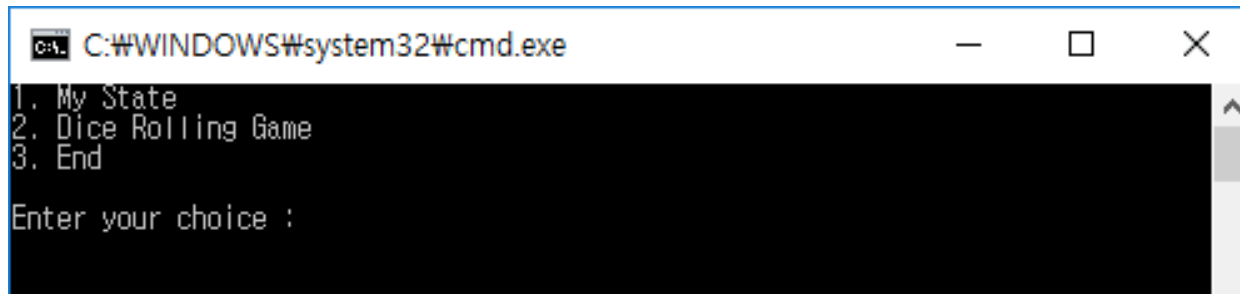
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Dice Rolling Game

- **Functions**

- Dice Rolling Game with a computer
- Betting user's cash
    & Recording history of game results

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Main Menu

- Firstly, the program shows a main menu.
- It should include "1. My State",
  "2. Dice Rolling Game" and "3. End".

Main Menu

- * Program should receive an integer number only among 1, 2 and 3. Otherwise, it should receive a number again.

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1. My State

- If a user selects "1. My State"(input number 1) menu, the program shows the user's state including current cash, the record of how many times he "wins" and "loses".

  (At first, the user has 100,000 won and the initial score is 0.)

- The program goes back to main menu by entering any key.

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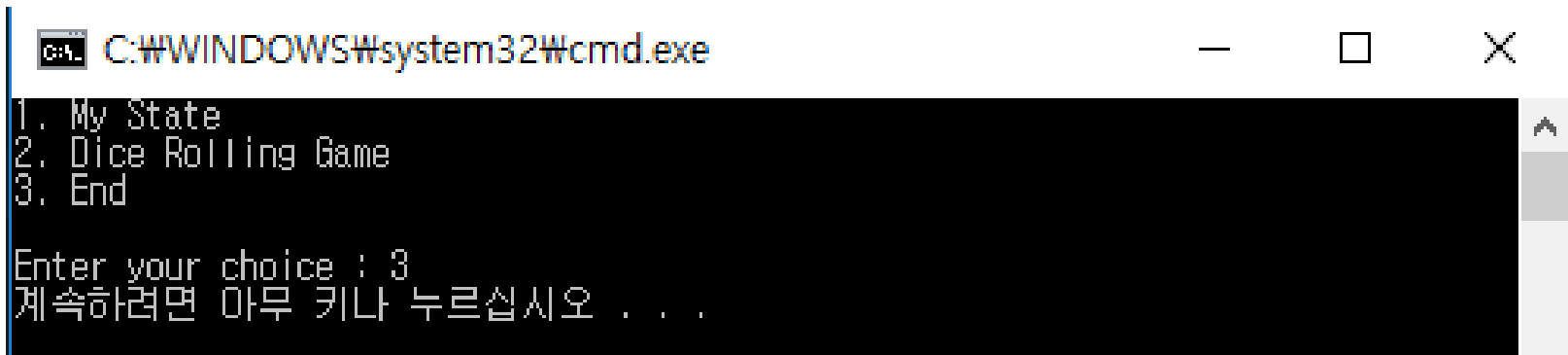# 1. My State

C:\WINDOWS\system32\cmd.exe

```
Current cash : 100000
Wins : 0
Loses : 0

Type any key to go main menu...
```

3. End

- If the user selects "3. End"(input number 3), the program ends.

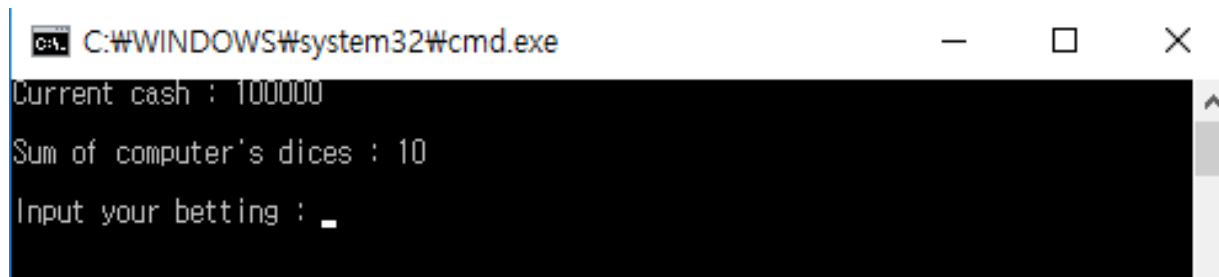KOREA UNIVERSITY

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2. Dice Rolling Game

- If the user selects "2. Dice Rolling Game"(input number 2), the program shows user's current cash and starts the game.

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Rules of Dice Rolling Game

- **Rules of Dice Rolling Game**

1) It consists of 3 dices.

2) First, a computer randomly rolls three dices and shows only the sum of them to the console.


```
C:\WINDOWS\system32\cmd.exe                    —    □    ×
Current cash : 100000
Sum of computer's dices : 10
Input your betting : _
```
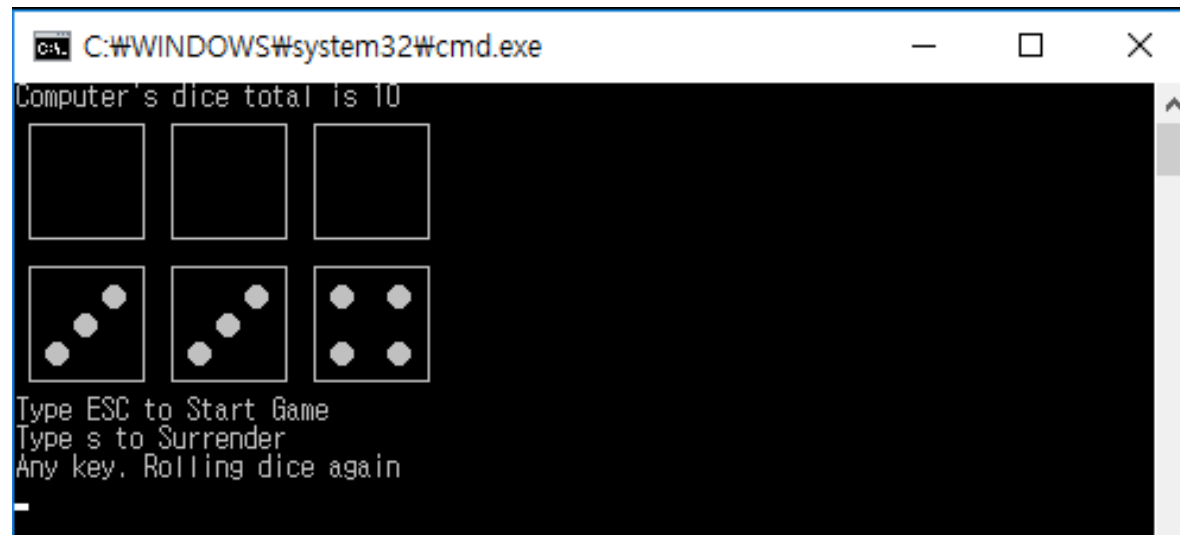
Rules of Dice Rolling Game

3) After user bets some amount of cash, he then rolls three dices. In this case, the sum of dices must be equal to computer's.

* for instance, The computer shows 15 to the users, the user can generate (4, 5, 6) or (3, 6, 6) or else.

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Rules of Dice Rolling Game

4) Then, the program gives three options to the user

      - 1. Rolling dices again (Type any key)

      - 2. Start game (Type esc key)

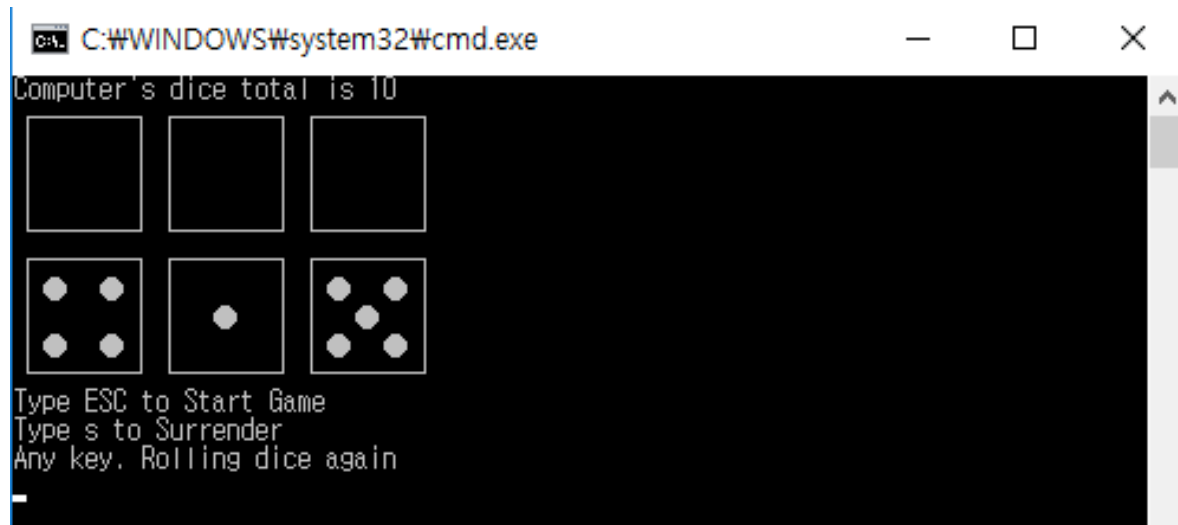   - 3. Surrender (Type 's' key)

Rules of Dice Rolling Game

Rules of Dice Rolling Game

6) If the user selects "Rolling dices again", he receives another three random dice values, the sum which is equal to computer's. previously rolled dices are removed from the screen.

Rules of Dice Rolling Game

6) If the user selects "Start Game", the program displays it's three dices values like below figure.

Rules of Dice Rolling Game

8) Then, the program should decide who wins the game. It compares each value of dices. If the user wins more than two stages, the user finally wins the game. However, some of stages can be ended with draw. In this case, the user loses.
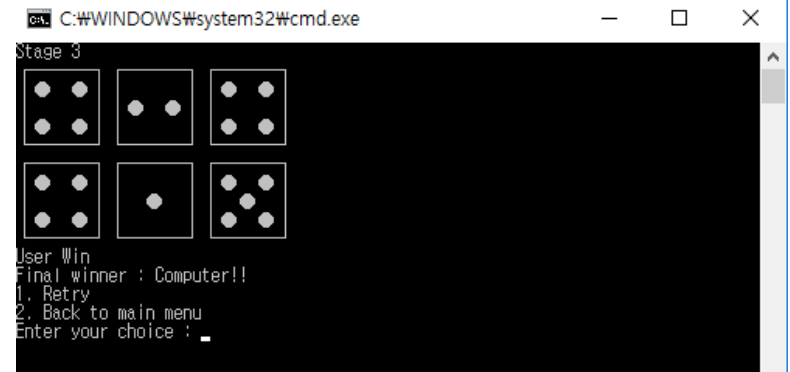
For instance,

Com (2, 6, 3) vs User (4, 4, 3) => result (W, L, L) Therefore, finally Lose

Com (2, 6, 3) vs User (3, 2, 6) => result (W, L, W) Therefore, finally WIN

Com (2, 6, 3) vs User (6, 4, 1) => result (W, L, L) Therefore, finally LOSE

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Rules of Dice Rolling Game

9) If the user selects "3. Surrender", the user immediately loses and also loses 5,000 cash

10) If the game is ended, the program shows the result and gives two options

   - 1. Retry
   - 2. Back to main menu.

Rules of Dice Rolling Game

11) If the user selects "1. Retry", program restarts the game. And if the user selects "2. Back to main menu", the program shows main menu.

Calculating cash

- If a user finally win the game,

    1) he can get double the cash he bet

- If a user finally lose the game,

    1) he loses the cash

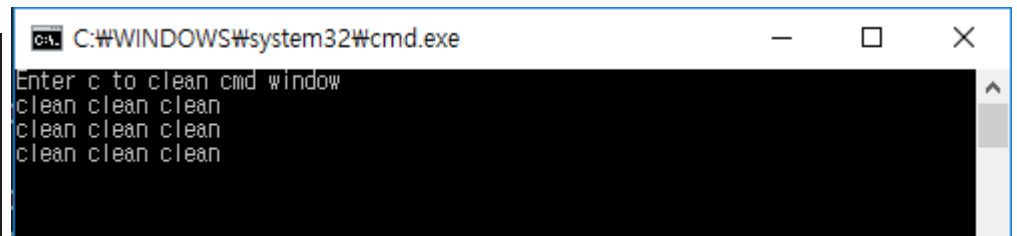- In both cases, program should record the score to "My state"

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Exception

- Any exceptions must be handled like invalid inputs.

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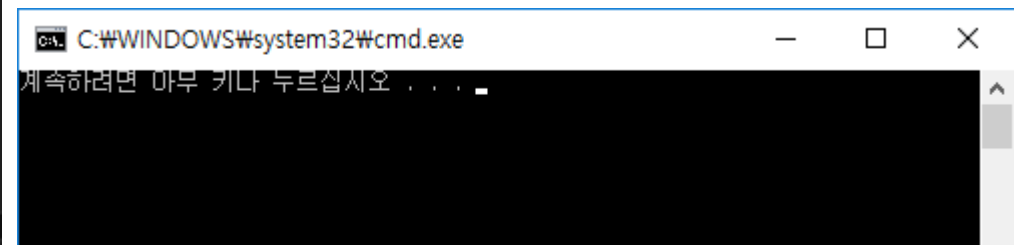Information System Security Laboratory

Hint : Window API

When you want to clean CMD, you can use system("cls");. windows.h includes this function.


```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <windows.h>
4
5
6  int main() {
7
8      printf("Enter c to clean cmd window\n");
9
10     printf("clean clean clean\n");
11     printf("clean clean clean\n");
12     printf("clean clean clean\n");
13
14     if (getch() == 'c') {
15         system("cls");
16     }
17
18
19  }
```
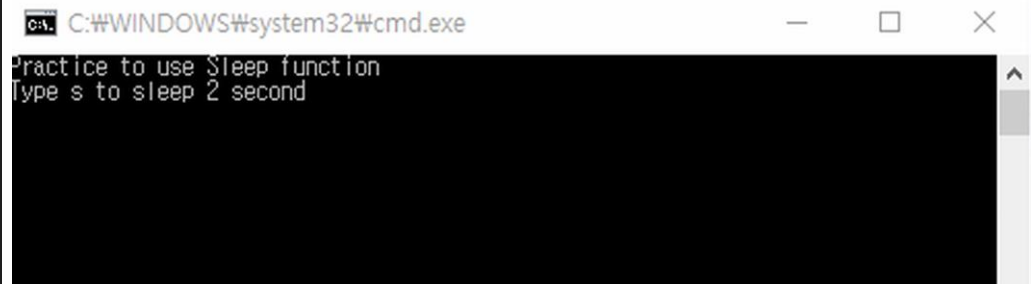
C:\WINDOWS\system32\cmd.exe

Enter c to clean cmd window
clean clean clean
clean clean clean
clean clean clean

Type c

C:\WINDOWS\system32\cmd.exe

계속하려면 아무 키나 누르십시오 . . .

Hint : Window API

When you want to delay program for some times, you can use Sleep(time). windows.h includes this function.

```c
#include <stdio.h>
#include <stdlib.h>
#include <windows.h>


int main() {

    printf("Practice to use Sleep function\n");

    printf("Type s to sleep 2 second\n");

    if (getch() == 's') {

        printf("Let's sleep 2 second\n");

        Sleep(2000);

        printf("Sleep after 2 second\n");

    }

}
```

C:\WINDOWS\system32\cmd.exe

Practice to use Sleep function
Type s to sleep 2 second

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drawDice

- We provide "drawDice" function for your convenience

- Function takes two arguments, i.e., 5 procedures to draw dice and the value of the throw

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drawDice

- DrawDice prototype

void drawDice(int _i, int _number);

- int_i : 5 procedures to draw number

- int_number : value of the throw

- For example, if you want to draw 2 dices and values of throws are 4 and 5,

```
for (i = 1; i <= 5; i++)
{
    for (j = 1; j <= 2; j++) {
        drawDice(i, user_diceNumber[j - 1]);
    }
    putchar('\n');
}
```

user_diceNumber[0] = 4
user_diceNumber[1] = 5

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Thank You

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