

# Computer Programming I

## Project 2

### Tetris Battle

Information System Security Lab.,  
School of Computer Science and Engineering,  
Korea University, Seoul, Korea

# Tetris battle

---

- **Functions**
  - Player 1 (P1) and Player 2 (P2) play Tetris
  - Items are given to players to help win the game
  - Game records are saved to .txt file

# Tetris Source Code

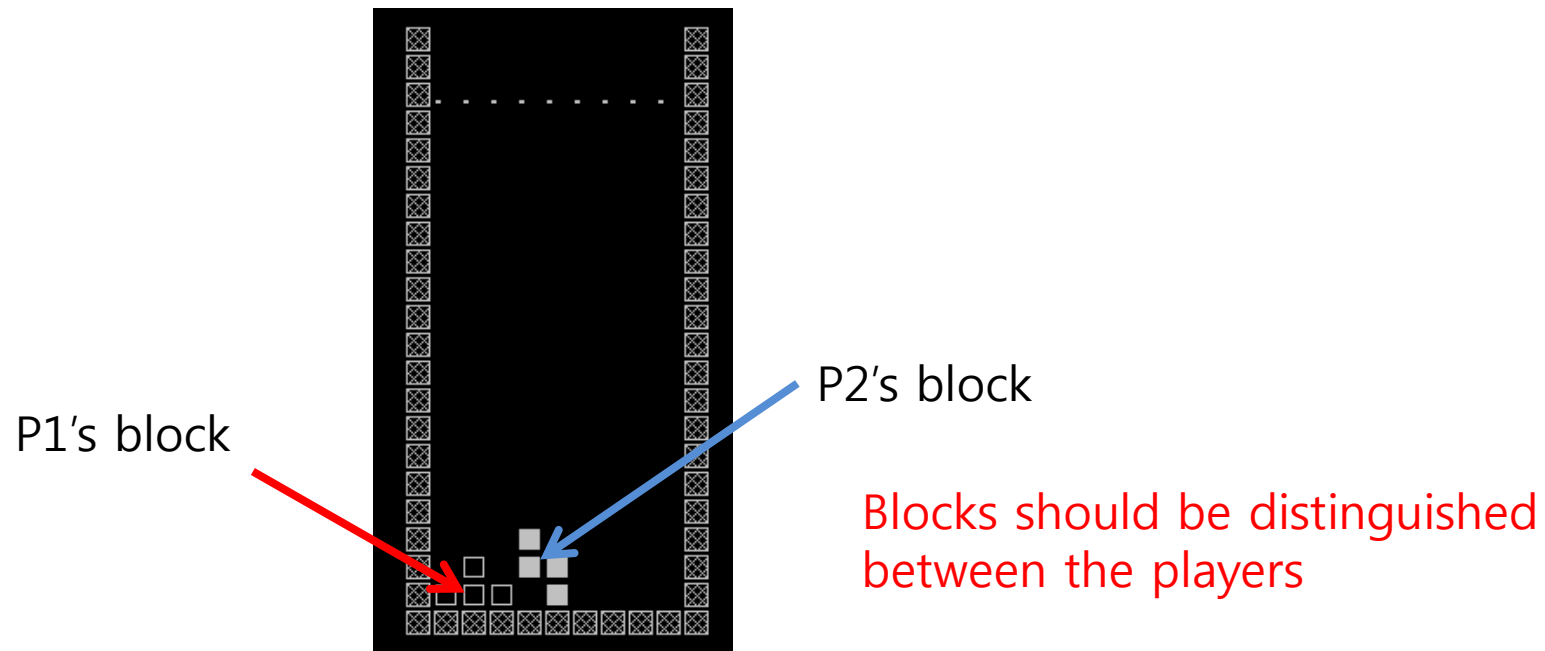
---

You will be given a sample tetris source code that supports only “single mode”

⇒ You MUST extend the program to satisfy some conditions (listed in the following slides)

# Basic Rules

1. Basic rules of Tetris are the same
2. Two players battle on single Tetris



# Basic Rules

## Keys

- P1



- P2



W  $\triangle$ : Rotate block

A  $\triangleleft$ : Move block left

S  $\nabla$ : Move block down

D  $\triangleright$ : Move block right

F,M : Use item

P : Pause game

Esc: Quit game

# Basic Rules

---

- Each player has 30 turns (total 60)
- Player gets a score per each line he removes
- Player who gets bigger score finally wins the game
- Game is terminated when
  - Use all turns (60)
  - No empty space to pile blocks

# Basic Rules

---

- If a player removes more than two lines simultaneously, he obtains an item
- Two cases are possible for using the item
  - If P1 uses the item in P2's turn
    - The game is paused for 5 seconds in the subsequent (P1's) turn begins
    - Then, P1 selects any block that will be used in his turn
    - After that, the game resumes
  - If P1 uses the item in P1's turn
    - When the next (P2's) turn starts, the game is paused for 5 seconds
    - Then, P1 selects any block that will be used in the P2's turn
    - After that, the game resumes

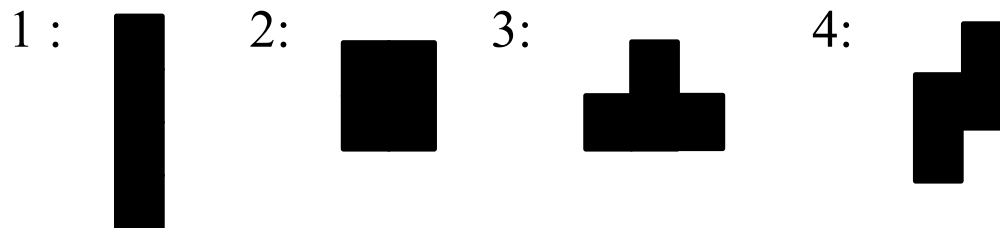
# Basic Rules

---

## 1) Only one item can be used in each turn

- If two players use items in the same turn, the item of a player who presses the item key button first is used
- If the player uses the item, the total number of obtained item decreases by 1

## 2) Player can select one of the blocks by press 1,2,3, or 4 number keys



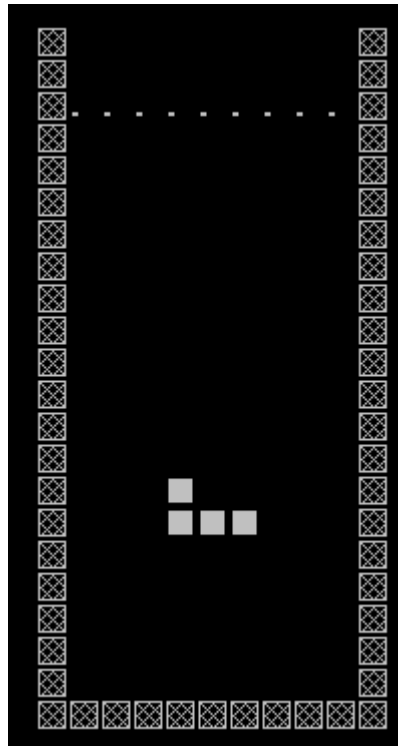


# Implementation Rules

---

How to design your program is entirely up to you, except the following:

- 1) The size of the boundary of the game should be the same as the figure below



# Implementation Rules

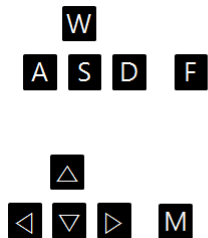
2) Game State Info must show the following:

- : Information of the next block
- : P1's score(number of removed lines)
- : The current number of items P1 has
- : P2's score(number of removed lines)
- : The current number of items P2 has

for instance↓↓

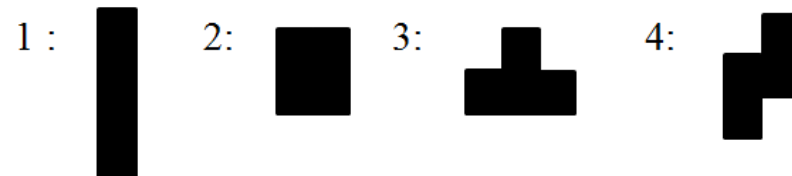


3) Game Key Info



W △: Rotate block  
 A ◀: Move block left  
 S ▽: Move block down  
 D ▶: Move block right  
 F,M : Use item  
 P : Pause game  
 Esc: Quit game

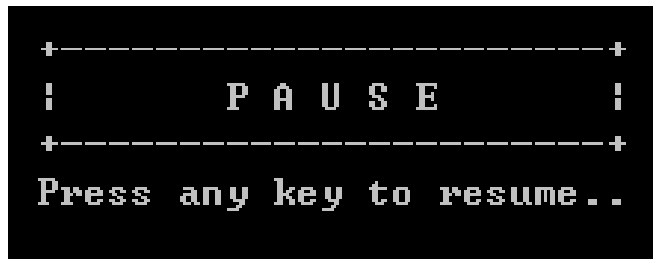
4) Key Info of item



# Implementation Rules

---

- If a player presses 'p' button to pause the game, then the pause message pops up and the game resumes until players press any key
  - For instance



```
+-----+
|           |
|   P A U S E   |
|           |
+-----+
Press any key to resume..
```

- If players press ESC button to quit the game, the program ends
  - In this case, logs should not be recorded

# Implementation Rules

---

- Game Records are saved to .txt file which include the following information:
  - 1) The starting time of the game
  - 2) The following information for the two players
    - the total number of removed lines
    - the total number of obtained item
    - the total number of used item

# Implementation Rules

---

- During P1's turn, P2's direction keys should be de-activated and vice versa
- Blocks should be distinguished by different colors until the game ends
- In each turn, the program should show whose turn it is at the upper-right side of the screen