

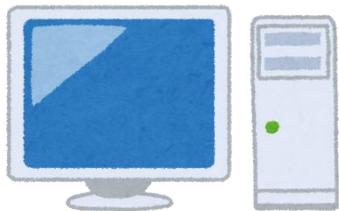
オンライン対戦ゲームを つくろう!

~クライアント/サーバシステムで問題解決~

使用するもの

プログラムを作るとき

PC1



プログラミングで使用

Smalruby



使用するアプリ

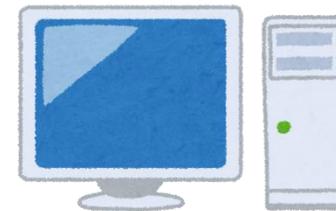
プログラムで遊ぶとき

PC1



クライアント1で使用

PC2



クライアント2で使用

PC3



サーバに使用

Smalruby



使用するアプリ

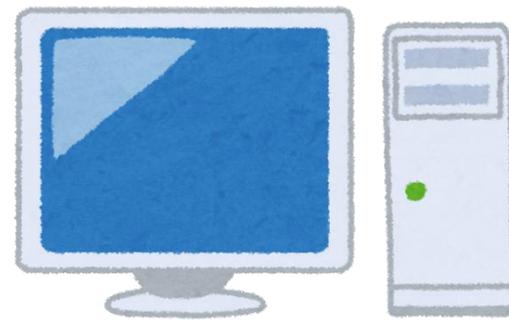
動画の内容

- ① サンプルプログラムに従ってプログラミングしよう。
- ② プログラムを実行して、制作したプログラムのデバッグをする。
- ③ サンプルプログラムを改良する。

クライアント1



サーバ



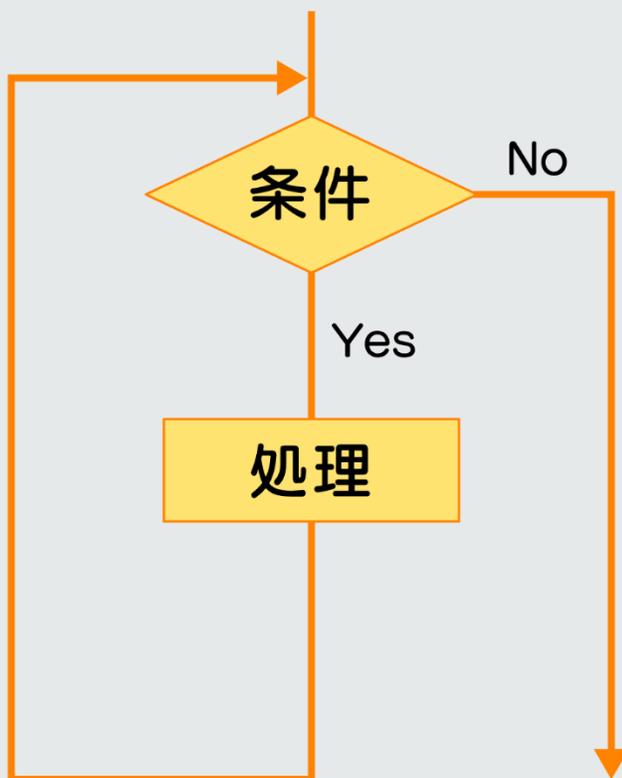
クライアント2



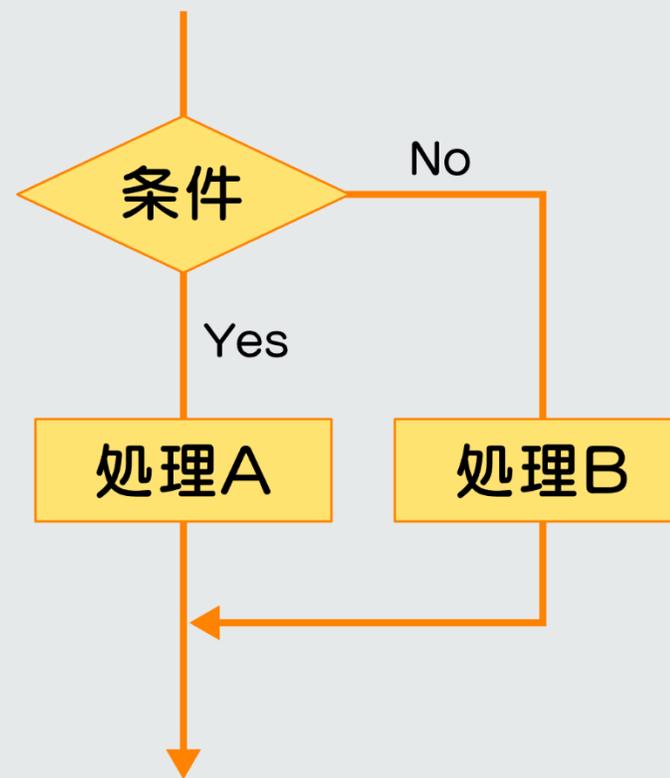
【1】順次



【2】繰り返し（反復）



【3】条件分岐（分岐）



クライアント | 赤いハートのプログラム完成形

The screenshot displays the Scratch programming environment with the following components:

- Top Bar:** Includes icons for settings, file, edit, and a tutorial. The title bar reads "002 基礎編クライアント...".
- Left Panel:** Contains the "Code" tab and a "Costume" tab. A vertical toolbar on the left lists various block categories: Motion, Looks, Sound, Events, Control, Cycles, Positioning, Operators, Variables, and Block Definition.
- Main Stage:** The central workspace where the code is written. It features a robot sprite and a red heart sprite. The heart's position is set to x: -168, y: 8, with a size of 20 and a rotation of 90 degrees.
- Right Panel:** Shows the "Stage" area with a "Game Start" counter set to 0. Below it, the "Sprite" panel displays the "Heart" sprite and its properties.
- Code Editor:** The main workspace contains several scripts:
 - When Green Flag Clicked:** A "Send Message" block (準備完了) is sent.
 - When Game Start Message Received:** A "Countdown" block (ゲームスタートまで) is set to 5, followed by a "Repeat" block (ゲームスタートまで = 0) that loops through: "Set Game Start Counter to 0", "Wait 1 second", and "Decrease Game Start Counter by 1".
 - When Start Message Received:** A "Countdown" block (カウントダウン) is set to 5, followed by "Turn", "Set Position (x: -198, y: -52)", "Wait 5 seconds", and "Show".
 - When Action Start Message Received:** Four scripts handle directional key presses:
 - Up Arrow:** "Increase y-coordinate by 10", "Send Red Heart Up", "Wait 0.05 seconds".
 - Down Arrow:** "Decrease y-coordinate by 10", "Send Red Heart Down", "Wait 0.05 seconds".
 - Right Arrow:** "Increase x-coordinate by 10", "Send Red Heart Right", "Wait 0.05 seconds".
 - Left Arrow:** "Decrease x-coordinate by 10", "Send Red Heart Left", "Wait 0.05 seconds".

クライアント | 紫のハートのプログラム完成形

The image shows a programming environment with a purple header bar. The main workspace contains a script for a character named 'Heart2'. The script is as follows:

```
ゲームスタートまで 0  
動き  
10 歩動かす  
15 度回す  
15 度回す  
どこかの場所へ行く  
x座標を 37、y座標を -54 にする  
1秒で どこかの場所へ行く  
1秒でx座標を 37に、y座標を -54にする  
90度に向ける  
マウスのポインターへ向ける  
x座標を 10ずつ変える  
x座標を 37にする  
y座標を 10ずつ変える  
y座標を -54にする  
もし端に着いたら、跳ね返る  
回転方法を 左右のみにする
```

When the character receives a click:

- If the click is on the top purple heart, the y-coordinate is increased by 10.
- If the click is on the bottom purple heart, the y-coordinate is decreased by 10.
- If the click is on the right purple heart, the x-coordinate is increased by 10.
- If the click is on the left purple heart, the x-coordinate is decreased by 10.

When the character receives a 'Countdown' event:

- The character is hidden.
- The x-coordinate is set to 37 and the y-coordinate is set to -54.
- The character waits for 5 seconds.
- The character is shown.

The right-hand side of the interface shows the 'Stage' area with a 'ゲームスタートまで' (Game Start) counter at 0, a 'Sprite' area with 'Heart2' selected, and a 'Stage' area with a '5' frame counter.

クライアント2 紫のハートのプログラム完成形

The screenshot displays the Scratch programming environment with the following components:

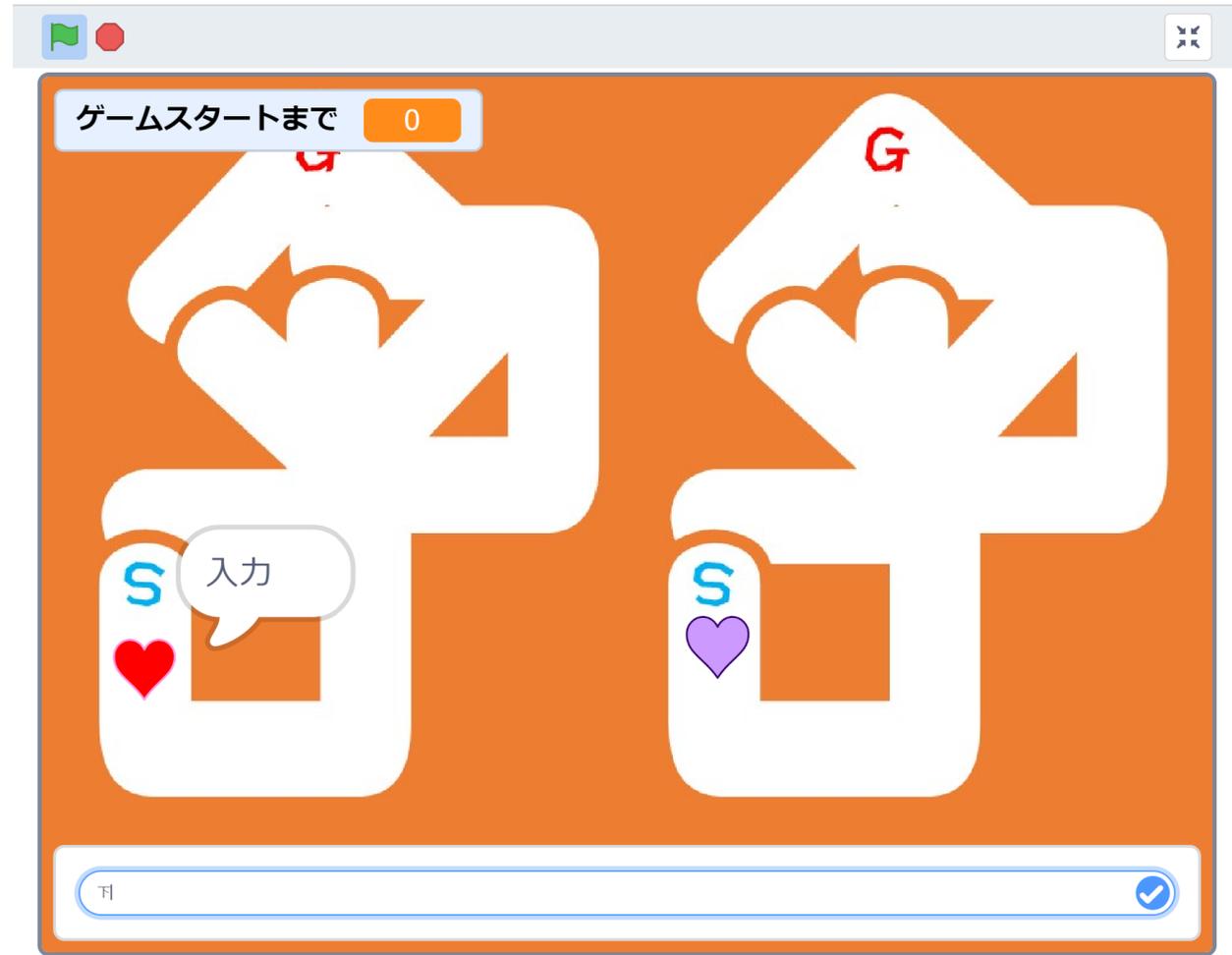
- Top Bar:** Includes menu options like '設定' (Settings), 'ファイル' (File), '編集' (Edit), and the current project name '003 基礎編クライアント...'. A 'チュートリアル' (Tutorial) icon is also present.
- Left Panel (Costume and Sound):** Shows the 'コード' (Code) tab selected. The '動き' (Motion) category is active, displaying various motion blocks such as '10歩動かす' (Move 10 steps), '15度回す' (Turn 15 degrees), 'どこかの場所へ行く' (Go to some location), and 'x座標を37、y座標を-54にする' (Set x coordinate to 37, y coordinate to -54).
- Main Stage:** The central workspace contains the completed code for the purple heart character. The code is organized into several event-driven blocks:
 - When Green Flag Clicked:** Sends a '準備完了' (Ready) message.
 - When 'ゲームスタートまで' (Game Start) Message Received:** Sets 'ゲームスタートまで' to 5, enters a loop to set it to 0, waits 1 second, and then decrements it by 1.
 - When 'スタート' (Start) Message Received:** Triggers a 'カウントダウン' (Countdown) block that sets the character's position to (37, -54), waits 5 seconds, and then displays the character.
 - When '紫ハート上' (Purple Heart Up) Message Received:** Moves the character up by 10 units and sends a '紫ハート上' message.
 - When '紫ハート下' (Purple Heart Down) Message Received:** Moves the character down by 10 units and sends a '紫ハート下' message.
 - When '紫ハート左' (Purple Heart Left) Message Received:** Moves the character left by 10 units and sends a '紫ハート左' message.
 - When '紫ハート右' (Purple Heart Right) Message Received:** Moves the character right by 10 units and sends a '紫ハート右' message.
- Right Panel (Stage and Sprites):** Shows the 'ゲームスタートまで' (Game Start) message box with a value of 0. The stage contains a purple heart sprite and a robot sprite. The 'スプライト' (Sprite) panel shows the 'Heart2' sprite selected, with its position set to (37, -54) and its size to 20. The 'ステージ' (Stage) panel shows the background set to '5'.

クライアント2 赤いハートのプログラム完成形

The screenshot displays a programming environment with the following components:

- Menu Bar:** Includes options for settings (設定), files (ファイル), editing (編集), a project name (003 基礎編クライアント...), and a tutorial (チュートリアル).
- Left Sidebar:** Lists block categories: 動き (Motion), 見た目 (Looks), 音 (Sound), イベント (Events), 制御 (Control), 調べる (Sensing), 演算 (Operators), 変数 (Variables), and ブロック定義 (Block Definitions).
- Script Area:** Contains the following code blocks:
 - When green flag clicked (when green flag clicked):
 - Go to location: (-168, 8) and play sound (1 sec).
 - Turn 90 degrees clockwise.
 - Point mouse cursor to me.
 - Move x by 10, y by 10.
 - Move x to -168, y to 8.
 - When red heart up is clicked: move y by 10.
 - When red heart down is clicked: move y by -10.
 - When red heart right is clicked: move x by 10.
 - When red heart left is clicked: move x by -10.
 - When countdown is clicked: hide, move to (-198, -52), wait 5 seconds, then show.
- Stage Area:** Shows a robot sprite and a red heart. A text box at the top right indicates "ゲームスタートまで 0".
- Right Sidebar:** Shows the "Heart" sprite selected, with its position (x: -168, y: 8), size (20), and rotation (90) settings.

小学生のタイピングスキル向上のためのプログラム



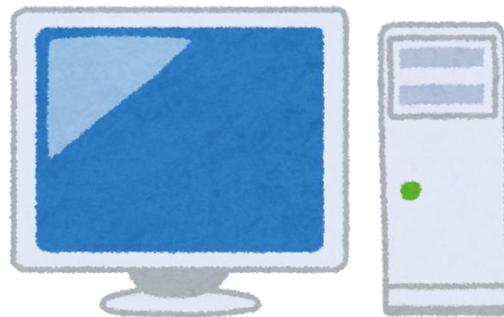
ふりかえり

① クライアント/サーバシステムについて

クライアント1



サーバ



クライアント2



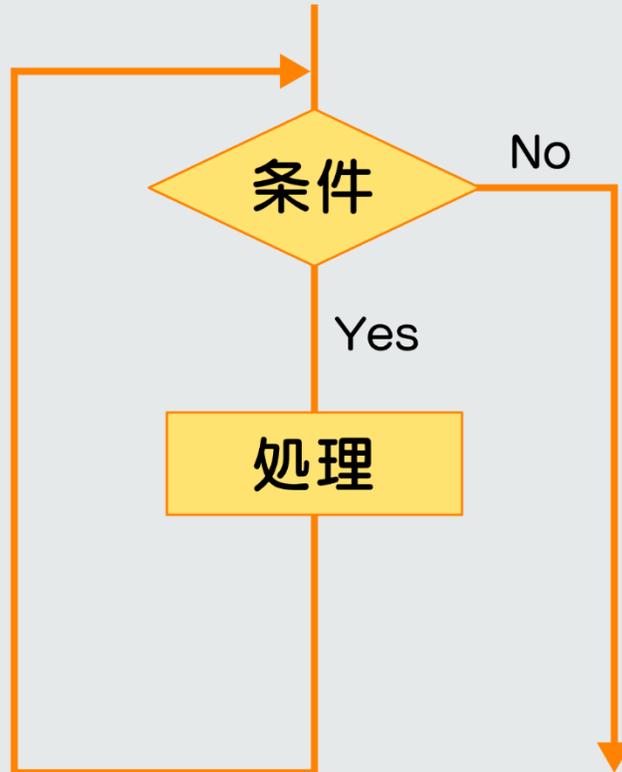
ふりかえり

② プログラムの基本的な構造について

【1】 順次



【2】 繰り返し (反復)



【3】 条件分岐 (分岐)

