```mermaid
flowchart TD
    Start((Start)) --> Switch[Switch blocktype]
    Switch --> Case5{Case 5}
    Case5 -->|True| WP[CRAFTED_WOODEN_PLANKS]
    Case5 -->|False| Case6{Case 6}
    Case6 -->|True| ST[CRAFTED_STICK]
    Case6 -->|False| Case7{Case 7}
    Case7 -->|True| II[CRAFTED_IRON_INGOT]
    Case7 -->|False| Default{Defult}
    Default --> Neg[-1]
    WP --> End((End))
    ST --> End
    II --> End
    Neg --> End
```

Start

Switch  blocktype

Case 5 — True → CRAFTED_WOODEN_PLANKS

False

Case 6 — True → CRAFTED_STICK

False

Case 7 — True → CRAFTED_IRON_INGOT

False

Defult → -1

End

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         │
                  ┌──────────────┐
                 / Input: blockType/
                └───────┬────────┘
                        │
              ┌──────────────────┐
              │ Initialize       │
              │ blockColor       │
              └────────┬─────────┘
                       │
                  Switch based on
                     blockType
```

Start

Input: blockType

Initialize blockColor

Switch based on blockType

Case AIR — True → "return ANSI_RESET + '- '

False

Case WOOD — True → "blockColor = ANSI_RED

False

Case LEAVES — True → blockColor = ANSI_GREEN

False

Case STONE — True → blockColor = ANSI_BLUE

False

Case IRON_ORE — True → blockColor = ANSI_WHITE

False

Default —True→ blockColor = ANSI_RESET

"Return: blockColor + getBlockChar(blockType) + ' '

End

```
Start

Enter Try
Block

Is OS
Windows?

Yes                          No

Execute 'cmd /c cls'         Print escape
command                      sequence
                             '\033[H\033[2J

Wait for process to          Flush the System
complete                     output stream

End
```

```
Start
```

```
Call
generateEmptyWorld()
```

```
Set playerX =
worldWidth / 2
```

```
Set playerX =
worldWidth / 2
```

```
Set playerX =
worldWidth / 2
```

```
End
```

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                    ◇ Is craftedItems ◇
                    ◇     null?        ◇
              ┌────────────────────────────┐
              │                            │
              ▼                            ▼
        ( Yes )                      ( No )
              │                            │
              ▼                            ▼
    ┌──────────────────┐        ┌──────────────────┐
    │ craftedItems = new│        │ craftedItems = new│
    │   ArrayList<>();  │        │   ArrayList<>();  │
    └──────────────────┘        └──────────────────┘
              │                            │
              └────────────┬───────────────┘
                           ▼
                    ┌─────────────┐
                    │     END     │
                    └─────────────┘
```

```
        ┌─────────────┐
        │    Start    │
        └─────────────┘
               │
               ▼
    ┌──────────────────────┐
    │ Print "Press Enter to│
    │     continue..."     │
    └──────────────────────┘
               │
               ▼
    ┌──────────────────────┐
    │       Scanner        │
    └──────────────────────┘
               │
               ▼
    ┌──────────────────────┐
    │  Scanner next line   │
    │      (String)        │
    └──────────────────────┘
               │
               ▼
        ┌─────────────┐
        │     End     │
        └─────────────┘
```

Start

B
switch (craftedItem)

c
CRAFTED_WOODEN_PLANKS

e
CRAFTED_IRON_INGOT

d
CRAFTED_STICK

g
default

h
return ""

f
return ANSI_BROWN

l
End

//   A --> B
B -->C
B --> D
B --> E
C --> F
D --> F
E --> F
B -->  G
G -->H
F--> I
H -->I

```
Start
```

```
JavaCraft.worldWidth
= worldWidth
```

```
JavaCraft.worldHeight
= worldHeight
```

```
JavaCraft.world =
new int[worldWidth]
[worldHeight]
```

```
playerX = worldWidth
/ 2
```

```
playerY = worldHeight
/ 2
```

```
inventory = new
ArrayList<>()
```

```
End
```

```
                          ┌─────────┐
                          │  Start  │
                          └─────────┘
                               │
                               ▼
                        ┌──────────────┐
                        │Clear Inventory│
                        └──────────────┘
                               │
                               ▼
                        ┌──────────────┐
                        │Initialize blockType to│
                        │       1      │
                        └──────────────┘
                               │
                               ▼
                          blockType <= 4?        ──No──▶  End
                               │
                              Yes
                               ▼
                        ┌──────────────┐
                        │Initialize i to 0│
                        └──────────────┘
                               │
                               ▼
                          i < INVENTORY_SIZE?    ──No──▶  Increment blockType
                               │                           by 1 (blockType++)
                              Yes
                               ▼
                        ┌──────────────┐
                        │inventory.add(blockType)│
                        └──────────────┘
                               │
                               ▼
                        ┌──────────────┐
                        │Increment i by 1│
                        │      (i++)     │
                        └──────────────┘
```

Start

Clear Inventory

Initialize `blockType` to 1

blockType <= 4?

No

End

Yes

Initialize `i` to 0

`i < INVENTORY_SIZE`?

Yes

No

`inventory.add(blockType)`

Increment `blockType` by 1 (`blockType++`)

Increment `i` by 1 (`i++`)

```
                    start

                      |
                      v
          +---------------------------+
          |  check  if there is a     |
          |      block to place       |
          +---------------------------+
           |                         |
           v                         v
          yas                        no
           |                         |
           v                         v
    +----------------+      display error message
    | place the block|
    +----------------+              |
           |                        |
           v                        v
    display a succeed  ------->    End
        message
```

```
Start
  │
  ▼
blockType =
world[playerX]
[playerY]
  │
  ▼
Switch
  │
  ▼
Case wood ──True──► Print: Print " You ──► inventory.add(WOOD) ──► break ──►
  │                 gather wood from the
False               tree"
  │
  ▼
Case leaves ──True──► Print:"You gather ──► inventory.add(LEAVES) ──► break ──►
  │                   leaves from the tree."
False
  │
  ▼
Case stone ──True──► Print:"You gather ──► inventory.add(Stone) ──► break ──►
  │                  stones from the
False                ground"
  │
  ▼
Case Iron_ore ──True──► Print: You gather iron ──► inventory.add(Iron_ore) ──► break ──►
  │                     ore from the ground
False
  │
  ▼
Case air ──True──► print: Nothing to ──► break ──►
  │                interact with here
False
  │
  ▼
Defult ──► Print: Unrecognized ──────────────► End
           block. Cannot
           interact.
```

```
                          Start

                    blockType =
                    world[playerX]
                    [playerY]

                Does blockType not
                  equal AIR?

        Yes                              NO

   Mine block
                                    Print "No block to
                                      mine here."
  Add blockType to
    inventory

  Set world[playerX]
   [playerY] to AIR

   Output "Mined " +
 getBlockName(blockType)
       + "."

                    waitForEnter

                          End
```

```
                    ┌─────────┐
                   (   Start   )
                    └─────────┘
                         │
                         ▼
                 ┌────────────────┐
                 │ Switch craftedItem │
                 └────────────────┘
                         │
                         ▼
              ◇ case CRAFTED_WOODEN_PLANKS: ◇ ──True──▶ ┌──────────┐
                         │                              │ return 5 │ ──────▶
                       False                            └──────────┘
                         │
                         ▼
              ◇ case CRAFTED_STICK: ◇ ──True──▶ ┌──────────┐
                         │                      │ return 6 │ ──────▶
                       False                    └──────────┘
                         │
                         ▼
              ◇ case CRAFTED_IRON_INGOT ◇ ──True──▶ ┌──────────┐
                         │                          │ return 7 │ ──────▶
                       False                        └──────────┘
                         │
                         ▼
              ◇ Defult ◇ ──────▶ ┌───────────┐
                                 │ return -1 │ ──────▶
                                 └───────────┘
                                                      │
                                                      ▼
                                                 ┌─────────┐
                                                (   End    )
                                                 └─────────┘
```

```
Start
   |
   v
Display "Crafting
Recipes:
   |
   v
Display "1. Craft
Wooden Planks: 2
Wood
   |
   v
Display "2. Craft
Stick: 1 Wood
   |
   v
Display "3. Craft Iron
Ingot: 3 Iron Ore
   |
   v
End
```

```
            ┌─────────┐
            │  Start  │
            └─────────┘
                 │
                 ▼
         ┌───────────────┐
         │ Switch recipe │
         └───────────────┘
                 │
                 ▼
              ◇ Case 1 ◇ ──True──▶ craftWoodenPlanks(); ──▶ break ──────────────┐
                 │                                                                │
               False                                                             │
                 ▼                                                                │
              ◇ Case 2 ◇ ──True──▶ craftStick(); ──▶ break ─────────────────────┤
                 │                                                                │
               False                                                             │
                 ▼                                                                │
              ◇ Case 3 ◇ ──True──▶ craftIronIngot() ──▶ break ──────────────────┤
                 │                                                                │
               False                                                             │
                 ▼                                                                │
              ◇ Defult ◇ ───────▶ Print :"Invalid recipe ───────────────────────┤
                                         number."                                │
                                                                                 ▼
                                                                            ┌─────────┐
                                                                            │   End   │
                                                                            └─────────┘
```