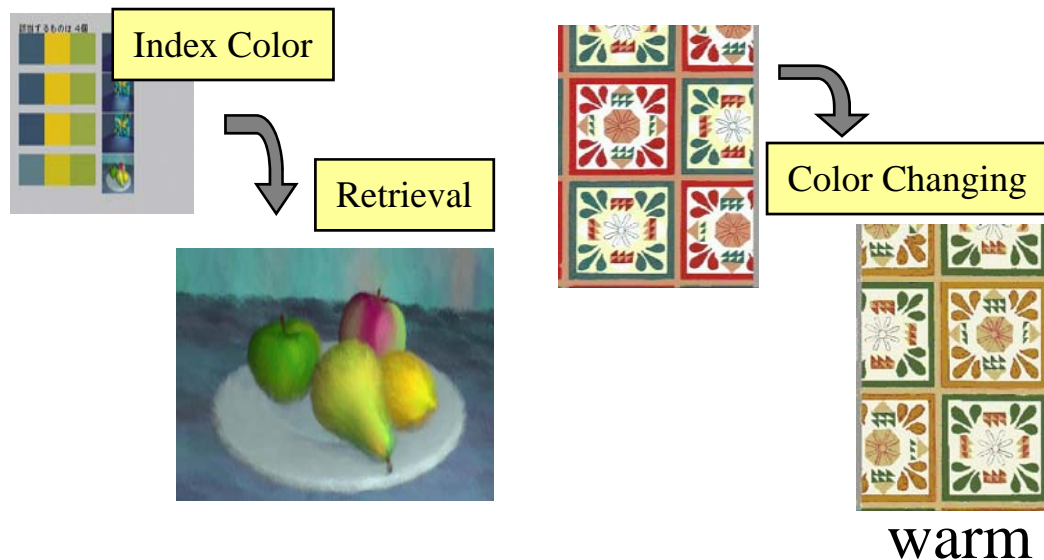


# Kansei information processing for Design Support System



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KONDO Kunio  
<http://www.teu.ac.jp/clab/kondo/>

---

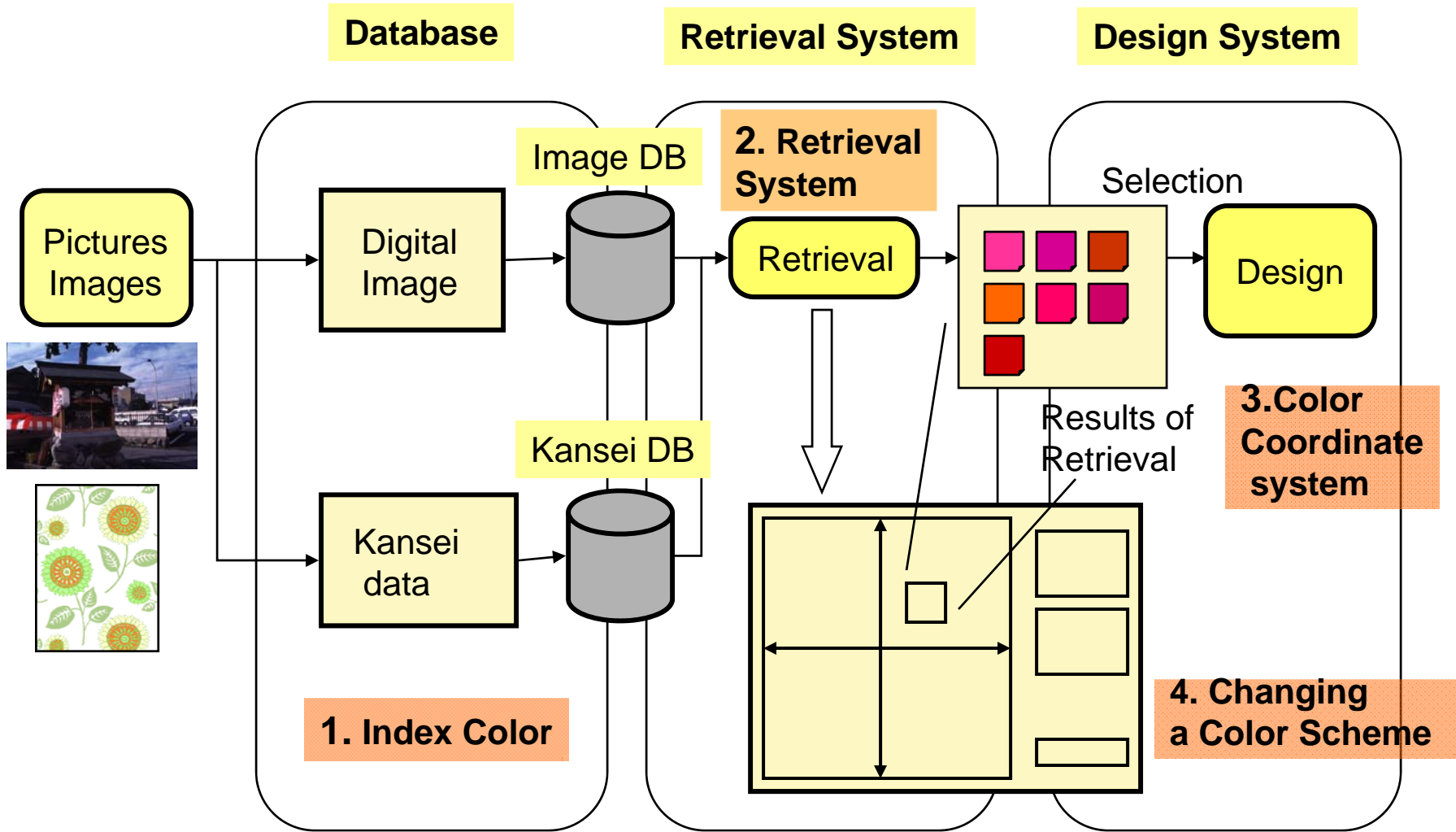
# Outline

## Design Support System

- [1] Extraction of Index Color
  - [2] Retrieval system using Index Color
  - [3] Color Coordinate System
  - [4] Changing a Color Scheme with Kansei Scales
-

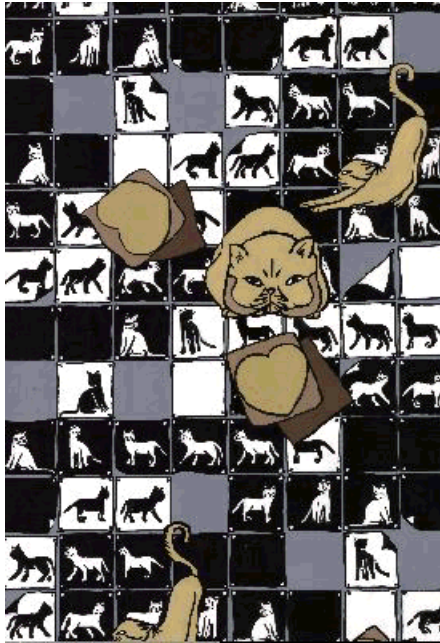
# Design Support System

A.Kuroda, K.Kondo: NICOGRAPH1993, pp.113-122



# 1 Extraction of Index Color

What is Index Color?



# Pick out of Index Colors

- Index Color (Morohara et al., 1994, 6th ICECGDG)

The index color is a combination of color that shows an impression of an image strongly.

- Limitation of Used Color

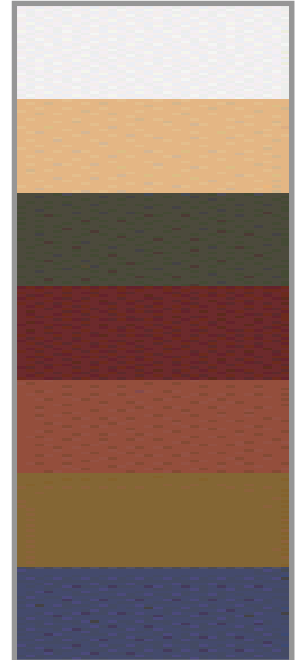
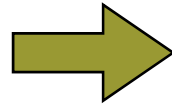
- Mixing near color of distance in  $L^*u^*v^*$  color space.

- Pick out of Index Colors from Used Color

- Selection of conspicuous colors

- An Area of a color wide
  - Eye-catching nature
  - The height of a contrast impression
-

# Example



Number of Color 255

Extracted Color 7

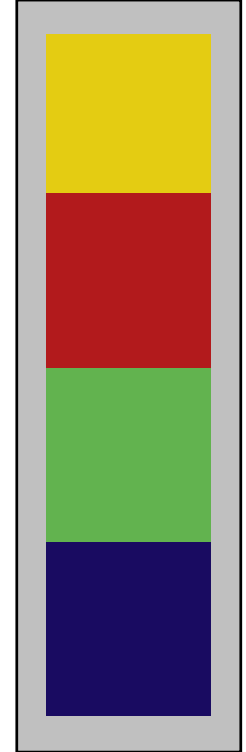
# Example



Original Image



Extracted Color



Index Color

# 2 Retrieval System using Color Scheme

Image Reference System

色相 150 base 150

明度 150 base 150

彩度 & 明度: 同一

彩度: 類似

選択色

選択色カラーデータ

HLS	RGB
h: 141	r: 0
l: 72	g: 98
s: 255	b: 144

背景色

明度の閾値を設定 (10段階)

小 大

近似補色配色: 鮮やかな効果

画像カラーデータファイル読み込み


CG画像

色相、明度、彩度の各幅を設定

色相	50
明度	60
彩度	100

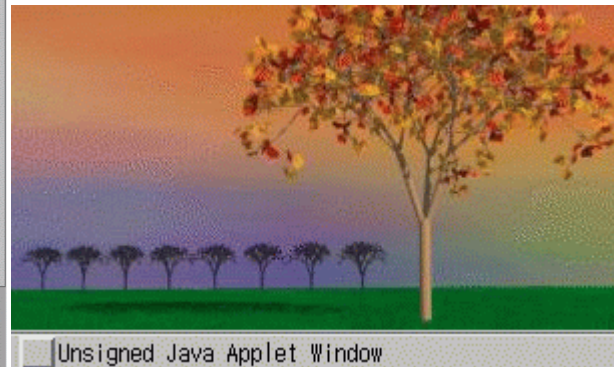
検索開始 & 結果

Applet ImageReference running

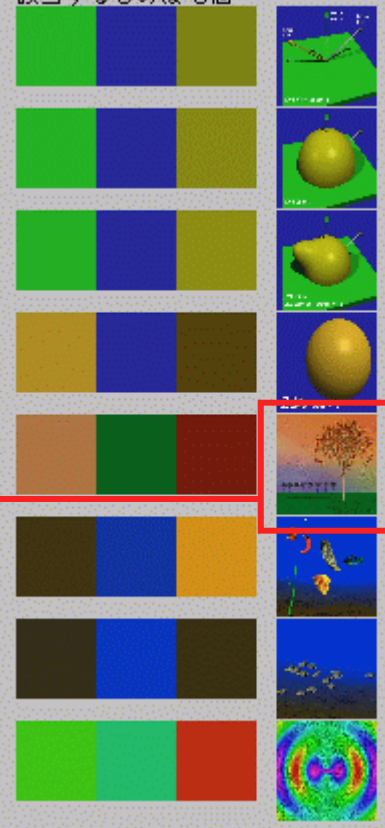


R:	118	12	144
G:	104	93	27
B:	25	131	0
H:	36	141	7
L:	71	71	72
S:	165	212	255

Unsigned Java Applet Window



該当するものは 8個



Unsigned Java Applet Window



# Example

Index Color



Image Database :

Chichibu Design Resource Saitama  
Industrial Technology Center

Number of Pictures 1294

# 3. Color Coordinate System

色相 30 base 30

彩度 & 明度: 同一

彩度: 類似

彩度: 対照

明度: 類似

明度: 対照

カラーデータ	
HLS	RGB
h: 233	r: 160
l: 80	g: 0
s: 255	b: 82

- 《3配色》
  - ポルタメント(3): 滑らかな効果
  - セクスタード(3): 魅力的効果
  - オブリガード: デリケートな効果
  - トリオ: 円満の快さ
  - 近似補色配色: 鮮やかな効果
- 《4配色》
  - ポルタメント(4): 滑らかな効果
  - セクスタード(4): 均衡的の主調効果
  - クワドラド: この上ない派手
  - 魅力的補色対: 清純な魅力
  - 刺激補色対: 刺激的效果
  - 鮮やかな補色配色: 鮮やかな調和感
  - 完全4色調和: バランス魅力効果
- 《5配色》
  - ポルタメント(5): 滑らかな効果
  - セクスタード(5): 均衡的の主調効果
- 《6配色》
  - セクスタード(6): 円満の魅力

Ex1

色相 30 base 30

彩度 & 明度: 同一

彩度: 類似

彩度: 対照

明度: 類似

明度: 対照

Ex.2

色相 30 base 30

彩度 & 明度: 同一

彩度: 類似

彩度: 対照

明度: 類似

明度: 対照

# Example of Design Work

Original Image



Example1



 Selected Color



Example 2



 Selected Color

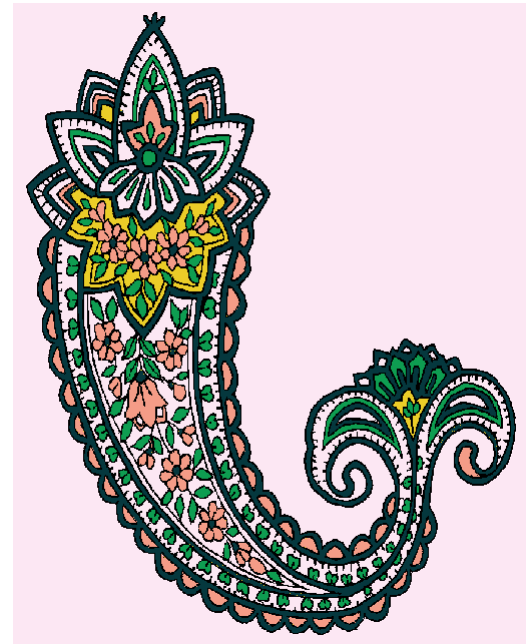
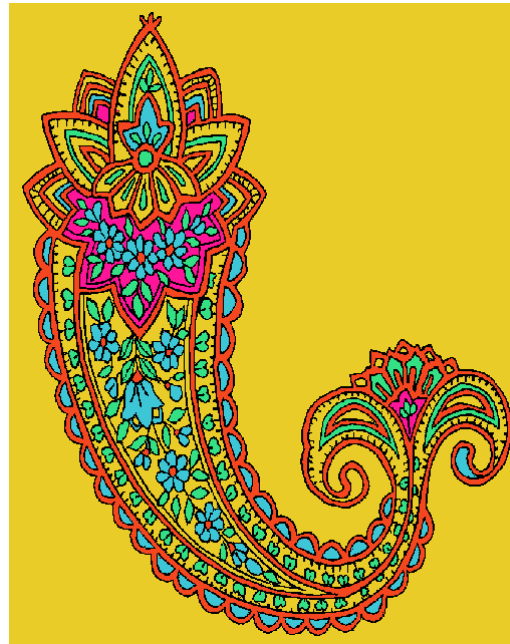
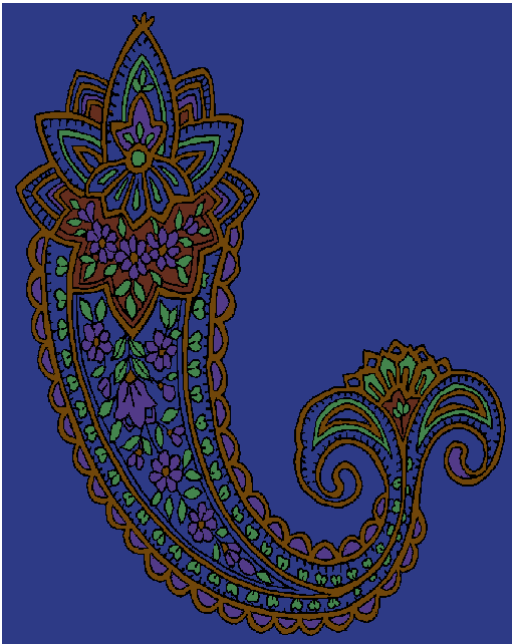


# Example of Design Work

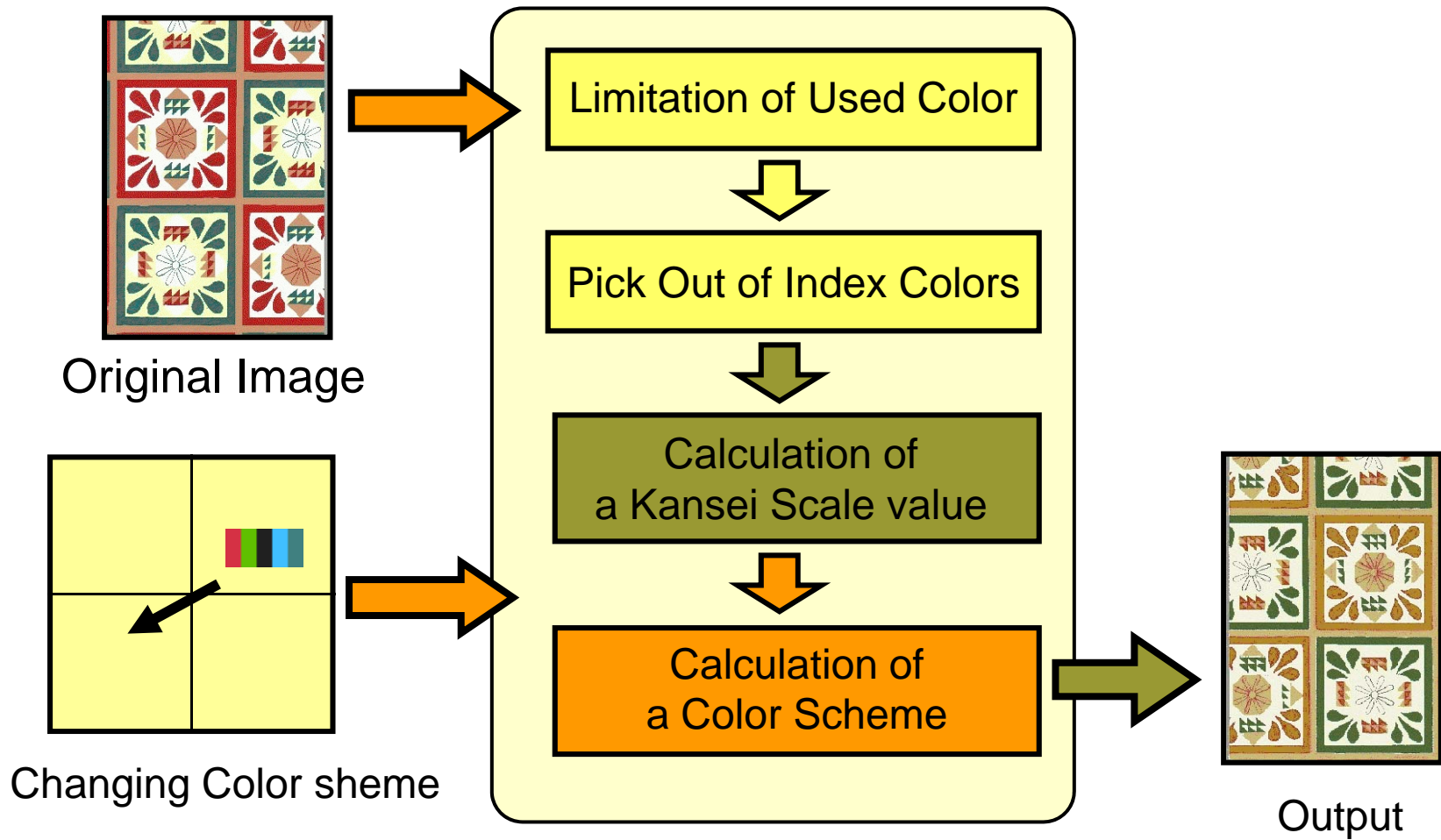
Selected Color :



Original Image



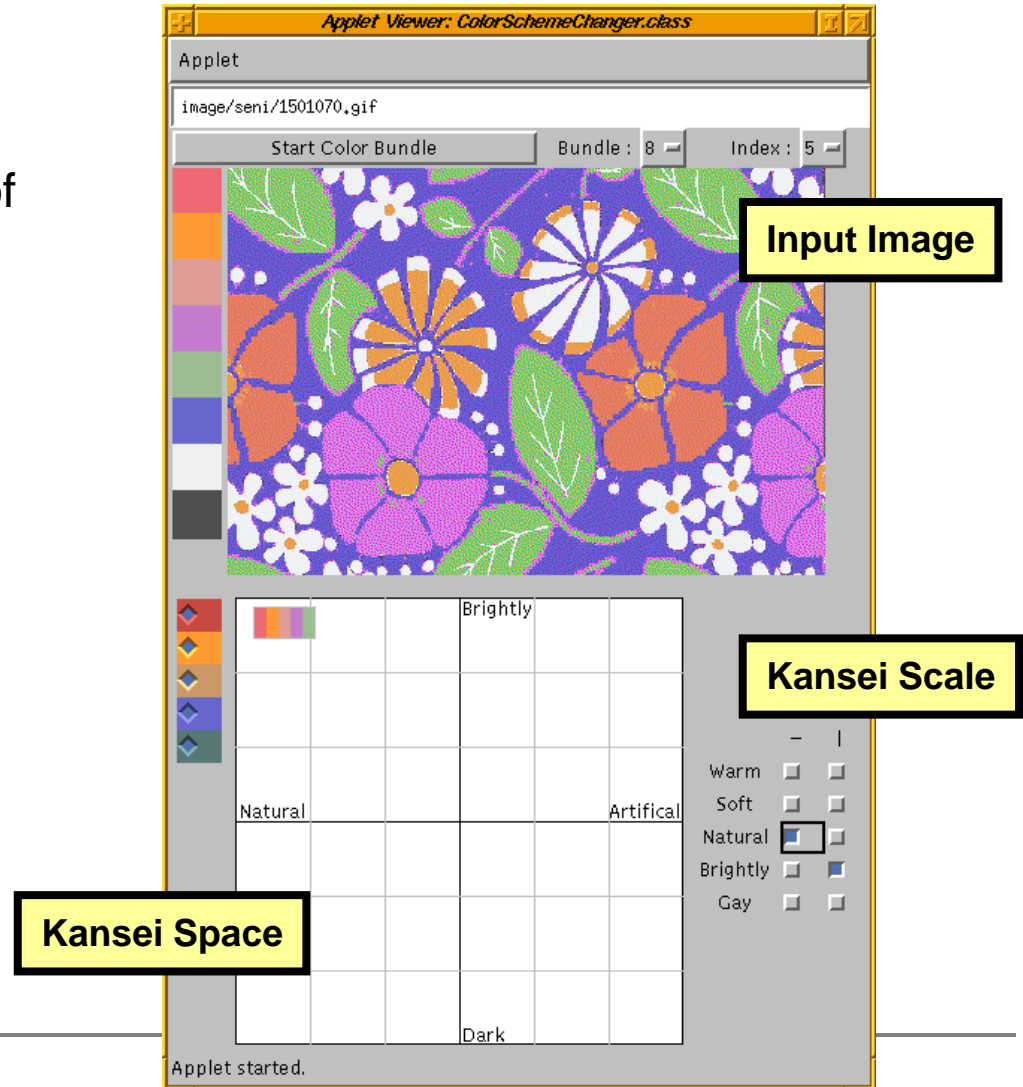
# 4. Outline of Changing a Color Scheme



# A Method of Changing a Color Scheme with Kansei Scales

H.Yamazaki,K.Kondo,Journal of Geometry and Graphics, Vol3,No,1,pp.77-84,1999

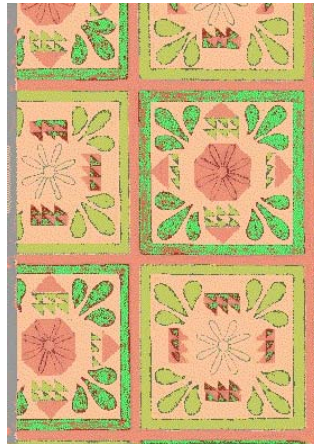
JAVA Applet that used method of changing a color scheme



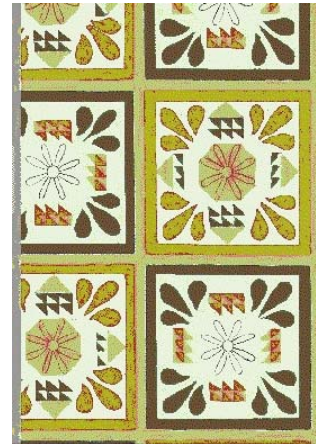
# Example of Changing Color Scheme 1



Original



natural



gay



quiet



soft



cool



warm

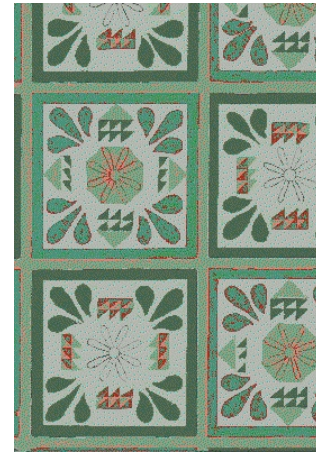
# Example of Changing Color Scheme 2



Original



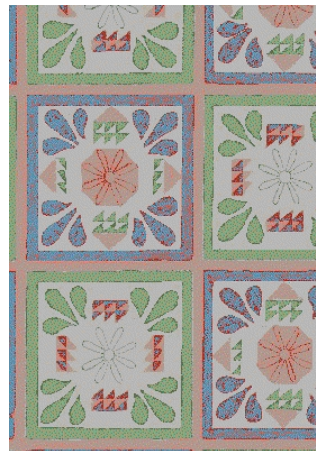
Cool - Hard



Cool - Quiet



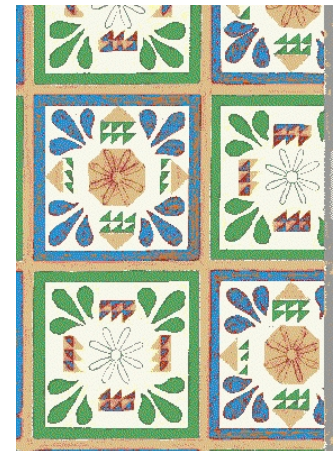
Gay - Natural



Soft - Quiet



Warm - Gay



Warm - Soft



# Examples of Design Work



Original Image



Example (1)



Example (2)

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# Design Support System

- [1] Extraction of Index Color
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