**KUIS 1 Point Operation**

**Berikut adalah matriks citra 8 bit :**   
**Kerjakan soal tersebut sesuai dengan NPM ANDA masing-masing**   
**Kerjakan semua pixel dan jelaskan cara perhitungan untuk pixel yang diberi warna kuning**

**Matriks untuk NPM Ganjil**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **0** | | | **1** | | | **2** | | | **3** | | | **4** | | |
| |  | | --- | | **R** | | |  | | --- | | **G** | | |  | | --- | | **B** | | |  | | --- | | **R** | | |  | | --- | | **G** | | |  | | --- | | **B** | | |  | | --- | | **R** | | |  | | --- | | **G** | | |  | | --- | | **B** | | |  | | --- | | **R** | | |  | | --- | | **G** | | |  | | --- | | **B** | | |  | | --- | | **R** | | |  | | --- | | **G** | | |  | | --- | | **B** | |
| |  | | --- | | **0** | | **34** | **57** | **39** | **177** | **103** | **209** | **173** | **10** | **32** | **76** | **116** | **166** | **221** | **83** | **7** |
| |  | | --- | | **1** | | **5** | **211** | **235** | **148** | **188** | **197** | **249** | **255** | **246** | **139** | **46** | **196** | **11** | **12** | **81** |
| |  | | --- | | **2** | | **41** | **216** | **166** | **123** | **95** | **136** | **65** | **208** | **100** | **138** | **74** | **72** | **162** | **19** | **142** |
| |  | | --- | | **3** | | **200** | **56** | **110** | **164** | **151** | **116** | **140** | **44** | **194** | **3** | **177** | **69** | **115** | **23** | **106** |
| |  | | --- | | **4** | | **53** | **43** | **67** | **7** | **58** | **106** | **130** | **63** | **40** | **152** | **12** | **136** | **13** | **90** | **17** |
| |  | | --- | | **5** | | **45** | **219** | **57** | **93** | **138** | **215** | **116** | **160** | **144** | **119** | **204** | **53** | **81** | **153** | **159** |
| |  | | --- | | **6** | | **177** | **237** | **221** | **55** | **116** | **117** | **136** | **107** | **68** | **158** | **141** | **254** | **235** | **26** | **54** |
| |  | | --- | | **7** | | **238** | **66** | **54** | **6** | **48** | **253** | **110** | **20** | **85** | **152** | **69** | **75** | **51** | **184** | **94** |
| |  | | --- | | **8** | | **147** | **224** | **11** | **235** | **240** | **104** | **146** | **98** | **144** | **81** | **12** | **147** | **2** | **235** | **139** |

**Matriks untuk NPM Genap**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | | | 1 | | | 2 | | | 3 | | | 4 | | | 5 | | |
| |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | | |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | | |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | | |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | | |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | | |  | | --- | | R | | |  | | --- | | G | | |  | | --- | | B | |
| |  | | --- | | 0 | | **130** | **252** | **237** | **132** | **87** | **32** | **54** | **218** | **49** | **61** | **112** | **173** | **173** | **52** | **224** | **10** | **120** | **125** |
| |  | | --- | | 1 | | **149** | **57** | **152** | **217** | **39** | **25** | **127** | **75** | **199** | **31** | **180** | **232** | **164** | **32** | **94** | **105** | **119** | **232** |
| |  | | --- | | 2 | | **144** | **2** | **123** | **196** | **131** | **109** | **7** | **66** | **79** | **21** | **53** | **241** | **31** | **233** | **40** | **155** | **46** | **235** |
| |  | | --- | | 3 | | **130** | **84** | **135** | **86** | **172** | **232** | **227** | **150** | **255** | **86** | **9** | **161** | **144** | **66** | **230** | **71** | **98** | **161** |
| |  | | --- | | 4 | | **147** | **117** | **16** | **137** | **143** | **56** | **26** | **50** | **82** | **123** | **162** | **40** | **49** | **56** | **58** | **76** | **206** | **227** |
| |  | | --- | | 5 | | **96** | **150** | **50** | **105** | **228** | **207** | **101** | **40** | **74** | **16** | **134** | **1** | **172** | **34** | **71** | **107** | **81** | **183** |
| |  | | --- | | 6 | | **53** | **35** | **22** | **97** | **87** | **40** | **191** | **103** | **47** | **228** | **112** | **148** | **235** | **196** | **231** | **70** | **6** | **33** |

**Lakukan operasi point operation berikut :**

**a.**  **Operasi Grayscale**

**b.**  **Operasi Biner (dari citra grayscale) dengan dua cara yaitu bandingkan dengan 128 dan nilai rata-rata.**

**c.**  **Operasi Brightness dengan tbrightness = 250 (dari citra grayscale) untuk NPM ganjil**

**Operasi Brightness dengan tbrightness = 200 (dari citra grayscale) untuk NPM genap**

**d.**  **Operasi Contrast dengan tcontrast =0.35 (dari citra yang grayscale) untuk NPM Ganjil**

**Operasi Contrast dengan tcontrast =0.45 (dari citra yang grayscale) untuk NPM Genap**

**\*\* Selamat Mengerjakan \*\***