**NIT Warangal: IP Lab Assignments-2 February 2019**

**Note:**

* *You have to paste the code and the screen shot showing the results.*
* *Final submission should be a word document.*
* *The name of the document must be* **cvip\_assignment3a\_rollno\_name.doc**
* **You have to send it to :** [**nitwmtechcvip@gmail.com**](mailto:nitwpumpinglemmas@gmail.com)

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|  | **Compression –Part** |
| C1 | Obtain the Entropy value for the image M1 |
| C2 | Implement the Huffman coding and compress the image M2. Give the compression ratio. After that decompress the compressed image and show that Huffman coding is lossless compression technique. |
| C3 | Implement the run-length coding to compress the image M2.  (i) By using binary bit planes  (ii) By using the Gray codes (you get the gray codes for 0-255 such that only bit differs with the next value in order) (See the attached html file) |

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| **Morphology** |
| Write a program to perform dilation and erosion and try to get results shown in Fig 9.7 and Fig 9.5 (M1-1, M1-2) |
| For the Fig.M2, extract the boundary and display the original and resultant images |
| A preprocessing step in an application of microscopy is concerned with the issue of isolation individual round particles from similar particles that overlap in groups of two or more particles (see the Fig.M3). Assuming that all particles are of the same size, propose a morphological algorithm that produces three images consisting respectively of  (a) Only particles that have merge with the boundary of the image.  (b) Only overlapping particles.  (c) Only nonoverlapping parcicles. |