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| **File Name: asc2bin** |
| function dn = asc2bin(txt)  dec=double(txt) %Text to ASCII (decimal)  p2=2.^(0:-1:-7) % 2^0,2^-1,.......,2^-7  B=mod(floor(p2'\*dec),2) %Decimal to binary conversion  %Columns of B are bits of chars  dn=reshape(B,1,numel(B));%Bytes to serial conbversion  end |

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| **File Name: bin2asc** |
| function txt = bin2asc(dn)  L=length(dn); %Length of input string  L8=8\*floor(L/8); %Multiple of 8 Length  B=reshape(dn(1:L8),8,L8/8); %Cols of B are bits of chars  p2=2.^(0:7); %power of 2  dec=p2\*B; %Binary to decimal conversion  txt=char(dec); %ASCII (decimal) to txt  end |

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| **Main Code** |
| clc;  clear all;  close all;    Transmitted\_Message= 'Red'  %Converting Information Message to bit%  x=asc2bin(Transmitted\_Message); % Binary Information  bp=.000001; % bit period  disp(' Binary information at Transmitter :');  disp(x);    %XX representation of transmitting binary information as digital signal XXX  bit=[];  for n=1:1:length(x)  if x(n)==1;  se=5\*ones(1,100);  else x(n)==0;  se=zeros(1,100);  end  bit=[bit se];  end  t1=bp/100:bp/100:100\*length(x)\*(bp/100);  subplot(4,1,1);  plot(t1,bit,'lineWidth',2.5);grid on;  axis([ 0 bp\*length(x) -.5 6]);  ylabel('amplitude(volt)');  xlabel(' time(sec)');  title('Transmitting information as digital signal');    %XXXXXXXXXXXXXXXXXXXXXXX Binary-ASK modulation XXXXXXXXXXXXXXXXXXXXXXXXXXX%  A1=5; % Amplitude of carrier signal for information 1  A2=0; % Amplitude of carrier signal for information 0  br=1/bp;  % bit rate  f=br\*10; %carrier frequency  t2=bp/99:bp/99:bp;  ss=length(t2);  m=[];  for (i=1:1:length(x))  if (x(i)==1)  y=A1\*cos(2\*pi\*f\*t2);  else  y=A2\*cos(2\*pi\*f\*t2);  end  m=[m y];  end  t3=bp/99:bp/99:bp\*length(x);  subplot(4,1,2);  plot(t3,m);  axis([ 0 bp\*length(x) -6 6]);  xlabel('time(sec)');  ylabel('amplitude(volt)');  title('Modulated Signal at Transmitter');    disp('\*\*\*\*\*\*\*\*\*\*')  disp(' Message transmitted through a Transmission medium');  disp('\*\*\*\*\*\*\*\*\*\*')  %Channel Noise%  t4=bp/99:bp/99:bp\*length(x);  Rec=awgn(m,10);  subplot(4,1,3);  plot(t4,Rec);  axis([ 0 bp\*length(x) -6 6]);  xlabel('time(sec)');  ylabel('amplitude(volt)');  title('Received signal at Receiver');    %XXXXXXXXXXXXXXXXXXXX Binary ASK demodulation XXXXXXXXXXXXXXXXXXXXXXXXXXXXX  mn=[];  for n=ss:ss:length(Rec)  t=bp/99:bp/99:bp;  y=cos(2\*pi\*f\*t); %carrier siignal  mm=y.\*Rec((n-(ss-1)):n);  t5=bp/99:bp/99:bp;  z=trapz(t5,mm) ;  % intregation  zz=round((2\*z/bp));  if(zz>2.5) % logic level =(A1+A2)/2=7.5  a=1;  else  a=0;  end  mn=[mn a];  end  disp(' Binary information at Reciver :');  disp(mn);  %XXXXX Representation of binary information as digital signal which achived  %after ASK demodulation XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX  bit=[];  for n=1:length(mn);  if mn(n)==1;  se=5\*ones(1,100);  else mn(n)==0;  se=zeros(1,100);  end  bit=[bit se];  end  t5=bp/100:bp/100:100\*length(mn)\*(bp/100);  subplot(4,1,4)  plot(t5,bit,'LineWidth',2.5);grid on;  axis([ 0 bp\*length(mn) -.5 6]);  ylabel('amplitude(volt)');  xlabel(' time(sec)');  title('Demodulated signal at receiver');    %Converting Information bit to Message%  Received\_Message=bin2asc(mn)  %>>>>>>>> end of program >>>>>>>>>>>>>>>>% |