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| **Name:Hemant Ranjan**  **Roll No:**40 |
| **Exp. No:**7 **Date:** 14/08/2020 |
| **Implementation of DFA-(0+1)\*00** |
| **Aim:** C program to implement a DFA accepting binary strings ending with 00. |
| **Program**  #include<stdio.h>  #include<string.h>  int dfa=0;  void state0(char a)  {  if(a=='0')  {  dfa=1;  }  else if(a=='1')  {  dfa=0;  }  else  {  dfa=-1;  }  }  void state1(char a)  {  if(a=='0')  {  dfa=2;  }  else if(a=='1')  {  dfa=0;  }  else  {  dfa=-1;  }  }  void state2(char a)  {  if(a=='0')  {  dfa=2;  }  else if(a=='1')  {  dfa=0;  }  else  {  dfa=-1;  }  }  int isacceptance(char ch[])  {  int len,i;  len=strlen(ch);  for(i=0;i<len-2;i++)  {  if(ch[i]=='0' || ch[i]=='1')  {  dfa=0;  }  else  {  return 0;  }  }  for(i=len-2;i<len;i++)  {  if(dfa==0)  {  state0(ch[i]);  }  else if(dfa==1)  {  state1(ch[i]);  }  else if(dfa==2)  {  state2(ch[i]);  }  else  {  return 0;  }  }  if(dfa==2)  {  return 1;  }  else  {  return 0;  }  }  void main()  {  char ch[10];  printf("Enter the binary string");  scanf("%s",ch);    if(isacceptance(ch))  {  printf("Accepted\n");  }  else  {  printf("Rejected\n");  }  } |
| **Result:** Implemented DFA for strings ending with 00 and obtained the output successfully. |
| **Remarks:**(To be filled by faculty) |
| **Algorithm**   1. Start 2. Initialize global variable dfa = 0 3. Input the binary string str 4. Pass string str to the function isaccepetance(str) 5. In function isacceptance(str) calculate length len of str 6. For every element a upto len-2   if a = 0 or 1 set dfa = 1  else goto step 13   1. For every element from len-2 in str   if dfa = 0 goto step 8  else if dfa = 1 goto step 9  else if dfa = 2 goto step 10  else goto step 13   1. In state0 if a = 1 dfa = 0   else if a = 0 dfa=1  else dfa = -1   1. In state1 if a = 1 dfa = 0   else if a = 0 dfa=2  else dfa = -1   1. In state2 if a = 1 dfa = 0   else if a = 0 dfa=2  else dfa = -1   1. If dfa = 2 goto step 12 else goto step 13 2. Print Accepted goto step 14 3. Print Rejected 4. Stop   **Sample Input and Output**    **NFA, DFA and Transition tables** |