AP19110010221
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CSE E

1. Implementation of Language recognizer for set of all strings over input alphabet ∑={a,b}
containing an even number of a's and even number of b's.

C Code:

```
#include<stdio.h>
void
main ()
{

int state = 0, i = 0;


char present_state, input[20];

printf ("Enter input:");

scanf ("%s", input);

while ((present_state = input[i++]) != '\0')
   {

switch (state)

         {

case 0:
          if (present_state == 'a')

state = 1;

          else if (present_state == 'b')

state = 2;

          else
```

```
            {
printf ("Invalid token");
exit (0);
}
break;
case 1:
            if (present_state == 'a')
state = 0;
            else if (present_state == 'b')
state = 3;
            else
              {
printf ("Invalid token");
exit (0);
}
break;
case 2:
            if (present_state == 'a')
state = 3;
            else if (present_state == 'b')
state = 0;
            else
              {
```

```
printf ("Invalid token");

exit (0);

}

break;

case 3:
        if (present_state == 'a')

state = 2;

        else if (present_state == 'b')

state = 1;

        else

          {

printf ("Invalid token");

exit (0);

}

break;

}

}

if (state == 0)

printf ("String accepted\n");

  else

printf ("String not accepted\n\n");

}
```

2. Implementation of Language recognizer for a set of all strings ending with two symbols of the same type.

C Code:

```
#include<stdio.h>
void main ()
{
  int state = 0, i = 0;
  char present_state, input[20];

  printf ("Enter str:\n");
  scanf ("%s", input);

  while ((present_state = input[i++]) != '\0')
    {
      switch (state)
        {
        case 0:
          if (present_state == 'a')
            state = 1;
          else if (present_state == 'b')
            state = 3;
          else
            {
              printf ('Invalid\n');
              exit (0);
            }
          break;
        case 1:
          if (present_state == 'a')
            state = 2;
          else if (present_state == 'b')
```

```
    state = 3;
  else
    {
      printf ("Invalid\n");
      exit (0);
    }
  break;
case 2:
  if (present_state == 'a')
    state = 2;
  else if (present_state == 'b')
    state = 3;
  else
    {
      printf ("Invalid\n");
      exit (0);
    }
  break;
case 3:
  if (present_state == 'a')
    state = 1;
  else if (present_state == 'b')
    state = 4;
  else
    {
      printf ("Invalid\n");
      exit (0);
    }
  break;
case 4:
  if (present_state == 'a')
    state = 1;
  else if (present_state == 'b')
    state = 4;
  else
    {
      printf ("Invalid\n");
```

```
            exit (0);
          }
        break;
      }
  }
 if (state == 2 || state == 4)
  {
    printf ("String accepted\n");
  }
 else
  {
    printf ("String not accepted\n");
  }
}
```

Test Cases:

Input	Output
bab	String : bab is not Accepted
bbbaa	String : bbbaa is Accepted
babb	String : babb is Accepted