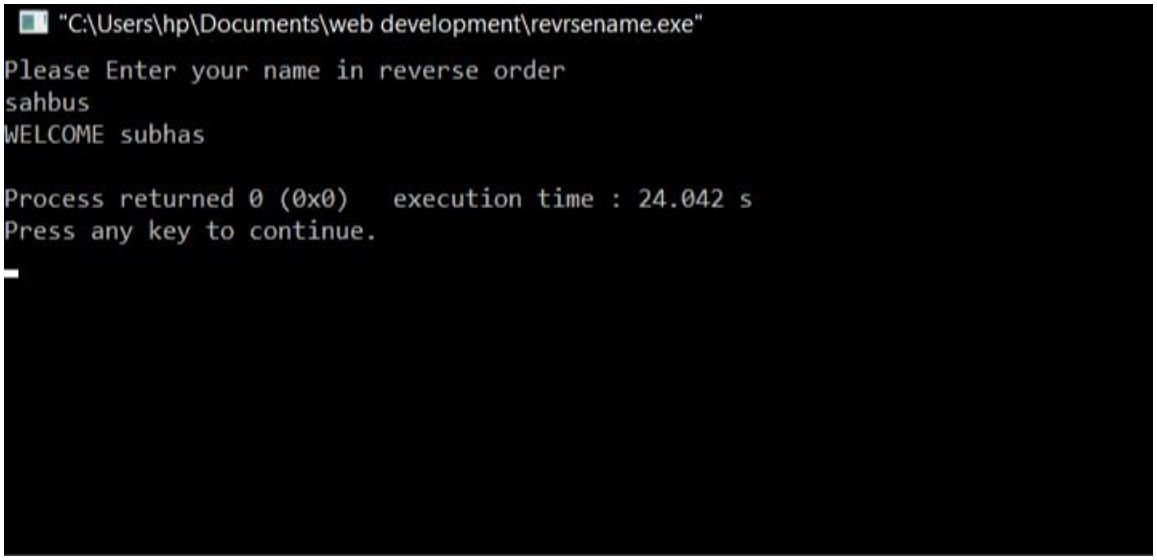
The machine in a gaming centre asks the customer to spell their name in reverse order and then it welcomes the customer with the correct name. Develop an application (C Program) to simulate the above situation using a suitable data structure.

```
#include<stdio.h>
#include<string.h>
#include<math.h>
#include<malloc.h>
#include<stdlib.h>
struct node
{
   char item;
   struct node *next;
};
typedef struct node *Node;
Node getNode()
{
   Node x;
   x=(Node)malloc(sizeof(struct node));
   return x;
}
Node insert_end(Node first,char data)
{
   Node last;
   Node new_node;
   new_node=getNode();
   new_node->item=data;
   new_node->next=NULL;
   if(first==NULL)
   {
```

```
        return new_node;
    }
    last=first;
    while(last->next!=NULL)
    {
      last=last->next;
    }
    last->next=new_node;
    return first;
}
Node reverse(Node first)
{
    Node cur,prev,temp;
    if(first==NULL)
    {
        printf("List Is Empty\n");
        return first;
    }
    cur=NULL;
    while(first!=NULL)
    {
     temp=first;
     first=first->next;
     temp->next=cur;
     cur=temp;
    }
    return cur;
}
void display(Node first)
{
```

```
    Node temp;
    if(first==NULL)
    {
        printf("List Is Empty\n");
    }
    for(temp=first;temp!=NULL;temp=temp->next)
    {
        printf("%c",temp->item);
    }
    printf("\n");
}
int main()
{
    Node first=NULL;
    Node name_correct=NULL;
    char name[100];
    printf("Please Enter your name in reverse order\n");
    scanf("%s",name);
    for(int i=0;i<strlen(name);i++)
    {
        first=insert_end(first,name[i]);
    }
    name_correct=reverse(first);
    printf("WELCOME\t");
    display(name_correct);
}
```

Output:


"C:\Users\hp\Documents\web development\revrsename.exe"
Please Enter your name in reverse order
sahbus
WELCOME subhas
Process returned 0 (0x0)   execution time : 24.042 s
Press any key to continue.