5.3. Implement to check Balancing of Parenthesis

#include<iostream> #include<string.h> #include<conio.h> using namespace std; class node

{

public:

char data; node \*next;

};

class stack

{

public: node \*top; stack()

{

top = NULL;

}

void push(char x)

{

node \*p = new node; p->data = x;

p->next = NULL; if(top == NULL)

{

top = p;

}

else

{

node \*save = top; top = p;

p->next = save;

}

}

char pop()

{

if(top == NULL)

{

cout<<" UNDERFLOW ";

}

else

{

node \*ptr =top; top= top->next; delete ptr;

}

}

};

int main()

{

int i; stack s;

char c[30],a,y,z;

cout<<"ENTER THE EXPRESSION:\n";

cin>>c;

for(i=0; i< strlen(c); i++)

{

if((c[i]=='(') || (c[i]=='{') || (c[i]=='['))

{

s.push(c[i]);

}

else

{

switch(c[i])

{

case')':

a=s.pop(); if((a=='{')||(a=='['))

{

cout<<" INVALID EXPRESSION!! ";

getch();

}

break; case'}':

y= s.pop(); if((y=='[')||(y==')'))

{

cout<<"INVALID EXPRESSION!!" ;

getch();

}

break; case']':

z= s.pop(); if((z=='{')||(z=='('))

{

cout<<"invalid expr!!!!!" ; getch();

}

break;

}

}

}

if(s.top==NULL)

{

cout<<" BALANCED EXPRESSION!! ";

}

else

{

cout<<" STRING IS NOT VALID!! " ;

}

return 0;

}