

Ex 6: Evaluation Arithmetic Expression

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DATE:16.4.24

PROGRAM:

```
#include <stdio.h>

#include <string.h>

#include <ctype.h>

int top = -1;

int stack[100];

void push (int data) {

    stack[++top] = data;

}

int pop () {

    int data;

    if (top == -1)

        return -1;

    data = stack[top];

    stack[top] = 0;

    top--;

    return (data);

}

int main()

{

    char str[100];

    int i, data = -1, operand1, operand2, result;

    printf("Enter ur postfix expression:");
```

```

fgets(str, 100, stdin);

for (i = 0; i < strlen(str); i++){
    if(isdigit(str[i]))
    {
        data = (data == -1) ? 0 : data;
        data = (data * 10) + (str[i] - 48);
        continue;
    }

    if (data != -1){
        push(data);
    }

    if (str[i] == '+' || str[i] == '-' || str[i] == '*' || str[i] == '/'){
        operand2 = pop();
        operand1 = pop();

        if (operand1 == -1 || operand2 == -1)
            break;

        switch (str[i])
        {
            case '+':
                result = operand1 + operand2;
                push(result);
                break;

            case '-':
                result = operand1 - operand2;
                push(result);
                break;

            case '*':

```

```
result = operand1 * operand2;

push(result);

break;

case '/':

result = operand1 / operand2;

push(result);

break;

}

}

data = -1;

}

if (top == 0)

printf("The answer is:%d\n", stack[top]);

else

printf("u have given wrong postfix expression\n");

return 0;

}
```

OUTPUT:

```
aiml231501129@cselab:~$ gcc ex6.c
aiml231501129@cselab:~$ ./a.out
Enter ur postfix expression:1 2*3*4+
The answer is:10
aiml231501129@cselab:~$
```