

Delhi Technological University



Compiler Design Lab : COE-317

Submitted to:
Dr. Rajni Jindal

Submitted by :
Feroz Ahmad
2K14/CO/034
Computer Engineering
B. Tech.

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Experiment 1

Aim

Listing 1: Sample Perl Script With Highlighting

```

/*****
FLAG - @
ESC - !
*****/
5 #include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
#include <stdio.h>
#include <stdlib.h>
10 #include <string.h>
#define MSGSZ 1024
#define FLAG '@'
#define ESC '!'

15 struct message_buf
{
    long mtype;
    char s[MSGSZ];
};
20 void charCount(char* s, int a);
void byteStuffing(char* s, int a);

int main()
{
25     int msqid;
    int msgflg = 0666;
    key_t key;
    size_t buf_length;
    //buffer struct
30     struct message_buf sbuf;

    key = 2929;

    if((msqid = msgget(key, msgflg)) < 0)
35     {
        perror("msgget");
        exit(1);
    }
    else
40     printf("connected\n");

    char c;
    printf("Press 1 for character count\n Press 2 for Byte Stuffing \n");
    scanf("%c",&c);
45     if(msgrcv(msqid, &sbuf, MSGSZ, 1, 0) < 0)
    {
        perror("msgrcv");
        exit(1);
    }
}
```

```

    }
50
    printf("Message:  Received\n");
    buf_length = strlen(sbuf.s);
    if(c == '1')
    {
55        charCount(sbuf.s, buf_length);
    }
    else
    {
        byteStuffing(sbuf.s, buf_length);
60    }
    return 0;
}

void charCount(char* s,int len)
65 {
    int fsize,i,j;
    for(i=0; i < len ; )
    {
        fsize=(s[i]-'0');
70        printf("Frame : \t");
        for(j=i+1; j < i + fsize; j++)
        {
            printf("%c",s[j]);
        }
75        printf("\n");

        i += fsize;
    }
}

80 void byteStuffing(char* s,int len)
{
    int fflag = 0, eflag = 0;;
    int i = 0;
    char t;
85    for(i = 0; i < len; i++)
    {
        t = s[i];

        if(eflag == 1)
90        {
            //ignore
            printf("%c", t);
            eflag = 0;
        }
95        else if(eflag == 0 && t == ESC)
        {
            eflag = 1;
        }
        else if(t == FLAG && fflag == 1) //ending flag
100        {
            fflag = 0;
        }
    }
}
```

```
        printf("\n");
    }
    else if(t == FLAG && fflag == 0) //starting flag
105  {
        fflag = 1;
        printf("Frame :\t");
    }
    else
110  {
        printf("%c", t);
    }
}
}
```

Screenshot



Example Figure

Experiment 2

Aim

Listing 2: Sample Perl Script With Highlighting

```

/*****
FLAG - @
ESC - !
*****/
5 #include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
#include <stdio.h>
#include <stdlib.h>
10 #include <string.h>
#define MSGSZ 1024
#define FLAG '@'
#define ESC '!'

15 struct message_buf
{
    long mtype;
    char s[MSGSZ];
};
20 void charCount(char* s, int a);
void byteStuffing(char* s, int a);

int main()
{
25     int msqid;
    int msgflg = 0666;
    key_t key;
    size_t buf_length;
    //buffer struct
30     struct message_buf sbuf;

    key = 2929;

    if((msqid = msgget(key, msgflg)) < 0)
35     {
        perror("msgget");
        exit(1);
    }
    else
40     printf("connected\n");

    char c;
    printf("Press 1 for character count\n Press 2 for Byte Stuffing \n");
    scanf("%c",&c);
45     if(msgrcv(msqid, &sbuf, MSGSZ, 1, 0) < 0)
    {
        perror("msgrcv");
        exit(1);
    }
}
```

```

    }
50
    printf("Message:  Received\n");
    buf_length = strlen(sbuf.s);
    if(c == '1')
    {
55        charCount(sbuf.s, buf_length);
    }
    else
    {
        byteStuffing(sbuf.s, buf_length);
60    }
    return 0;
}

void charCount(char* s,int len)
65 {
    int fsize,i,j;
    for(i=0; i < len ; )
    {
        fsize=(s[i]-'0');
70        printf("Frame : \t");
        for(j=i+1; j < i + fsize; j++)
        {
            printf("%c",s[j]);
        }
75        printf("\n");

        i += fsize;
    }
}

80 void byteStuffing(char* s,int len)
{
    int fflag = 0, eflag = 0;;
    int i = 0;
    char t;
85    for(i = 0; i < len; i++)
    {
        t = s[i];

        if(eflag == 1)
90        {
            //ignore
            printf("%c", t);
            eflag = 0;
        }
95        else if(eflag == 0 && t == ESC)
        {
            eflag = 1;
        }
        else if(t == FLAG && fflag == 1) //ending flag
100        {
            fflag = 0;
        }
    }
}
```



```
        printf("\n");
    }
    else if(t == FLAG && fflag == 0) //starting flag
    {
        fflag = 1;
        printf("Frame :\t");
    }
    else
    {
        printf("%c", t);
    }
}
}
```

Screenshot



Example Figure

Experiment 3

Aim

Listing 3: Sample Perl Script With Highlighting

```

/*****
FLAG - @
ESC - !
*****/
5 #include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
#include <stdio.h>
#include <stdlib.h>
10 #include <string.h>
#define MSGSZ 1024
#define FLAG '@'
#define ESC '!'

15 struct message_buf
{
    long mtype;
    char s[MSGSZ];
};
20 void charCount(char* s, int a);
void byteStuffing(char* s, int a);

int main()
{
25     int msqid;
    int msgflg = 0666;
    key_t key;
    size_t buf_length;
    //buffer struct
30     struct message_buf sbuf;

    key = 2929;

    if((msqid = msgget(key, msgflg)) < 0)
35     {
        perror("msgget");
        exit(1);
    }
    else
40     printf("connected\n");

    char c;
    printf("Press 1 for character count\n Press 2 for Byte Stuffing \n");
    scanf("%c",&c);
45     if(msgrcv(msqid, &sbuf, MSGSZ, 1, 0) < 0)
    {
        perror("msgrcv");
        exit(1);
    }
}
```

```

    }

50     printf("Message:  Received\n");
    buf_length = strlen(sbuf.s);
    if(c == '1')
    {
55         charCount(sbuf.s, buf_length);
    }
    else
    {
        byteStuffing(sbuf.s, buf_length);
60    }
    return 0;
}

void charCount(char* s,int len)
65 {
    int fsize,i,j;
    for(i=0; i < len ; )
    {
        fsize=(s[i]-'0');
70         printf("Frame : \t");
        for(j=i+1; j < i + fsize; j++)
        {
            printf("%c",s[j]);
        }
75         printf("\n");

        i += fsize;
    }
}

80 void byteStuffing(char* s,int len)
{
    int fflag = 0, eflag = 0;;
    int i = 0;
    char t;
85     for(i = 0; i < len; i++)
    {
        t = s[i];

        if(eflag == 1)
90         {
            //ignore
            printf("%c", t);
            eflag = 0;
        }
95         else if(eflag == 0 && t == ESC)
        {
            eflag = 1;
        }
        else if(t == FLAG && fflag == 1) //ending flag
100        {
            fflag = 0;
        }
    }
}
```

```
        printf("\n");
    }
    else if(t == FLAG && fflag == 0) //starting flag
    {
        fflag = 1;
        printf("Frame :\t");
    }
    else
    {
        printf("%c", t);
    }
}
}
```

Screenshot



Example Figure