

```
// CPS411 Recur.Factorial.c
// Expanded with printf stmts to provide operation sequencing visibility
```

```
#include <stdio.h>
```

```
int fact_rec(int);
```

```
main() {
```

```
    int n, ret;
```

```
    printf(" Input a number less than 17: ");
```

```
    scanf("%d", &n);
```

```
    printf(" About to call fact_rec(%d) \n", n);
```

```
    ret = fact_rec(n);
```

```
    printf(" What is returned from fact_rec(%d): %d \n", n, ret);
```

```
    return 0;
```

```
}
```

```
int fact_rec(int n)
```

```
{
```

```
    int ret;
```

```
    printf("Have just called fact_rec(%d) \n", n);
```

```
    if (n == 1)
```

```
    {
```

```
        printf("\nAbout to return the value 1 from fact_rec(1)\n");
```

```
        return 1;
```

```
    }
```

```
    ret = fact_rec(n-1);
```

```
    printf("About to return the value %d from fact_rec(%d)\n", n * ret, n);
```

```
    return n * ret;
```

```
}
```

Input a number less than 17: 4

About to call fact_rec(4)

Have just called fact_rec(4)

Have just called fact_rec(3)

Have just called fact_rec(2)

Have just called fact_rec(1)

About to return the value 1 from fact_rec(1)

About to return the value 2 from fact_rec(2)

About to return the value 6 from fact_rec(3)

About to return the value 24 from fact_rec(4)

What is returned from fact_rec(4): 24