

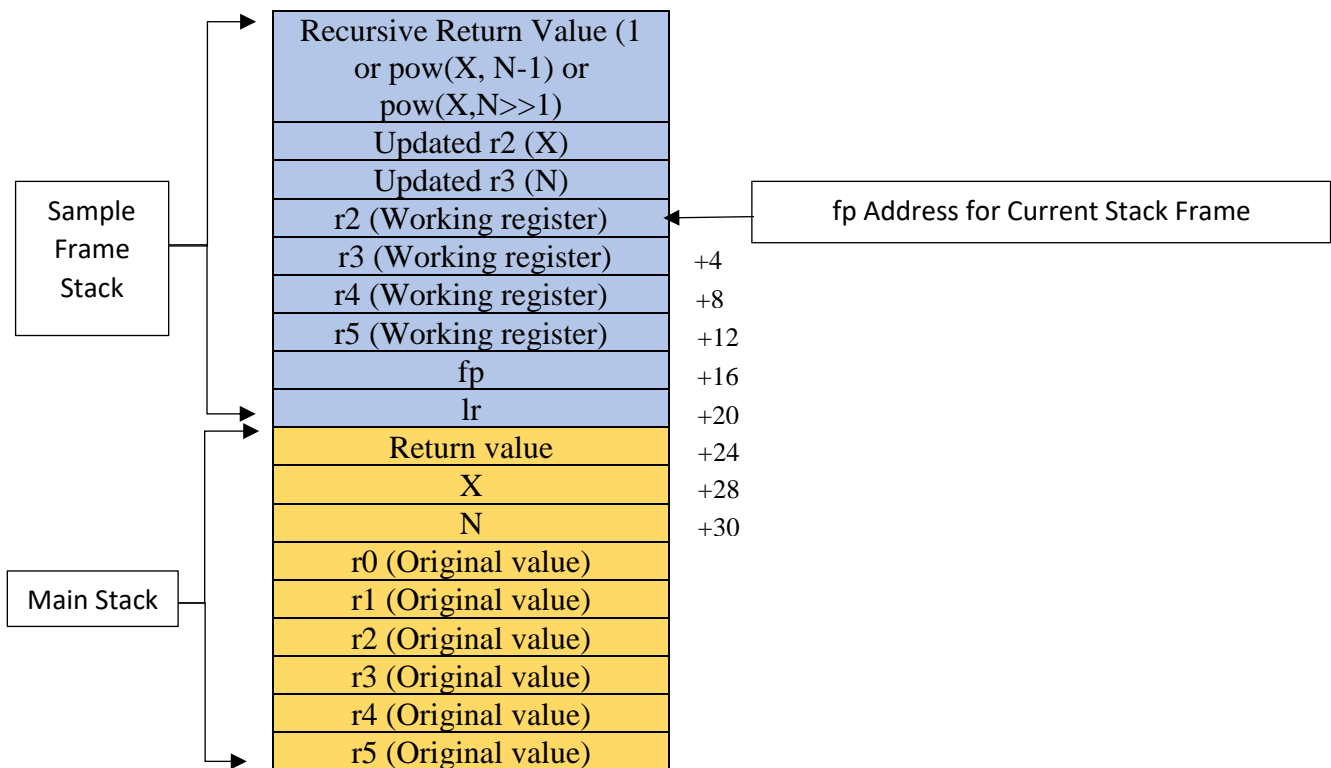
CS 2208 Assignment 5 Documentation:

Name: Yian (Bob) Zhou Student Number: 250916082

Copy of the original C source code:

```
int power(int x, unsigned int n)
{
    int y;
    if (n == 0)
        return 1;
    if (n & 1)
        return x * power(x, n - 1);
    else
    {
        y = power(x, n >> 1);
        return y * y;
    }
}
```

Sample Frame Stack Structure:



Additional Communication:

Working registers r2 to r5:

r2 = x

r3 = n

r4 = y

r5 = result

Excluding the main stacks, the number of stack frames for $n = 1, 2, \dots, 12$ are:

n = 0 has 1 stack frame

n = 1 has 2 stack frames

n = 2 has 3 stack frames

n = 3 has 4 stack frames

n = 4 has 4 stack frames

n = 5 has 5 stack frames

n = 6 has 5 stack frames

n = 7 has 6 stack frames

n = 8 has 5 stack frames

n = 9 has 6 stack frames

n = 10 has 6 stack frames

n = 11 has 7 stack frames

n = 12 has 6 stack frames