```
Lagrange Interpolation function
Parameters:
     n – order of polynomial+1
     x - where to evaluate
     xk[n] – x_values
     fk[n] – Y_value(true value)
```

```
double lagrange (int n, double x, double* xk, double* fk)
{
int i, k;
double p, lk;
p = 0.0;
for (k=0; k < n; k++) {
lk = 1.0;
for (i=0; i < n; i++) {
if (i==k)
 continue;
/* accumulate Lk(x) */
lk *= (x - xk[i])/(xk[k] - xk[i]);
}
/* accumulate the sum */
p += lk*fk[k];
}
return p;
}
```

```
//To call your function:
```

```
for (k=0; k < 41; k++) {

xk = y[k];
p = lagrange (order+1 , xk, x, f);
```