In[35]:=
```
Simpson[a0_, b0_] :=
 Module[{},
  a = a0;
  b = b0;
  h = (b - a) / 2;
  SI = (h / 3) * (f[a] + 4 * f[a + h] + f[a + 2 * h]);
  Print["Integration by Trapezoidal Rule is : ", N[SI]];
  DI = Integrate[f[x], {x, a, b}];
  Print["Integration by Direct : ", N[DI]];
  Print["Error : ", N[SI - DI]];
 ];
f[x_] := x^5 + 2 * x^4 + x + 1;
Simpson[1, 2];
```

```
Integration by Trapezoidal Rule is : 25.4792
Integration by Direct : 25.4
Error : 0.0791667
```

In[38]:=
```
f[x_] := 1 / (1 + x^2);
Simpson[0, 5];
```

```
Integration by Trapezoidal Rule is : 1.32515
Integration by Direct : 1.3734
Error : -0.048246
```

In[24]:=
```
f[x_] := 1 / (1 + x);
Simpson[0, 1];
```

```
Integration by Trapezoidal Rule is : 0.694444
Integration by Direct : 0.693147
Error : 0.00129726
```

In[28]:=
```
f[x_] := 2^x;
Simpson[0, 4];
```

```
Integration by Trapezoidal Rule is : 22.
Integration by Direct : 21.6404
Error : 0.359574
```