```
n = 100; %defining initial conditions and formula
a = -4;
b = -1;
f = @(x) (2+ x^3)* sin(exp(x));
h = (b-a)/n; %calculating h using given formula
xi = a:h:b; %creating a vector of evenly spaced points from x0 to xn
for i = 1:n %using a for loop to do a calculation for each midpoint in xi
    fi(1,i) = h*f((xi(i)+xi(i+1))/2); %using the formula to work out each midpoint approximat
ion and saving to vector fi
end
Int = abs(sum(fi)); %summing fi and taking its absolute value to give an integral approximati
on
fprintf('The Integral is %4.4f \n', Int) %printing the integral to console
```

```
The Integral is 2.5838
```

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