We generalize aspects of Fourier Analysis from intervals on $\mathbb{R}$ to bounded and measurable subsets of $\mathbb{R}$. In doing so, we obtain two interesting results. The first is a new proof of the famous Integral Cauchy-Schwarz Inequality. The second is a restatement of Parseval’s Equation that doubles as a representation of integrating bounded and measurable functions over bounded and measurable subsets of $\mathbb{R}$. (Received September 09, 2018)