In the study of computable functions on the Cantor space, it is well-known that the image of such a function is a decidable closed set and we showed recently that the set of itineraries of a computable function is also a decidable closed set. Also every decidable closed set is the image of a computable function and every decidable subshift is the set of itineraries of a computable function. However, there do exist non-decidable \( \Pi^0_1 \) classes (non-decidable effectively closed sets). We define the notion a conservatively approximable function on the Cantor space and show that the \( \Pi^0_1 \) classes are exactly the images of \( 2^N \) under conservatively approximable functions. Furthermore, every \( \Pi^0_1 \) subshift is the set of itineraries of some computably approximable function. We are now extending these notions and results to computable and semi-computable functions on the real interval. (Received March 01, 2013)