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## finitely generated projective module

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Let  $R$  be a unital ring. A finitely generated projective right  $R$ -module is of the form  $eR^n$ ,  $n \in \mathbb{N}$ , where  $e$  is an idempotent in  $\text{End}_R(R^n)$ .

Let  $A$  be a unital  $C^*$ -algebra and  $p$  be a projection in  $\text{End}_A(A^n)$ ,  $n \in \mathbb{N}$ . Then,  $\mathcal{E} = pA^n$  is a finitely generated projective right  $A$ -module. Further,  $\mathcal{E}$  is a pre-Hilbert  $A$ -module with ( $A$ -valued) inner product

$$\langle u, v \rangle = \sum_{i=1}^n u_i^* v_i, \quad u, v \in \mathcal{E}.$$