CO 789, Homework 1

Ganyu (Bruce) Xu (g66xu)

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1 First section

Definition 1.1 (Lattice)**.** *A lattice is a discrete subgroup of* $\mathbb{R}^n$

Theorem 1.1 (Minkowski's bound)**.** *let* $\mathcal{L}(B)$ *be a full-rank lattice with basis* $B \in \mathbb{R}^{n\times n}$*, and* $B^* = [\mathbf{b}_1^*, \mathbf{b}_2^*, \ldots, \mathbf{b}_n^*]$ *be the Gram-Schmidt orthogonalization of* B*, then*

$$\lambda_1(\mathcal{L}(B)) \geq \min_{1\leq i\leq n} \|\mathbf{b}_i^*\| \tag{1}$$

Algorithm 1 Caption for the algorithm

Require: This input, and that input

Make some statement with the "State" command
for Wrap for loop condition within the "For" command **do**
end for
while Wrap while loop condition within "While" command **do**
end while
if Wrap if else in the "If" command **then**
else if Another condition **then**
else
end if
return Return the output using the "Return" command