People’s Democratic Republic of Algeria

Ministry of Higher Education and Scientific Research

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Hassiba Benbouali University - Chlef

Faculty of Exact Sciences and Informatics

Computer Science Department

**Dissertation**

Graduation Project for the award of a

**Computer science bachelor degree**

Specialty: Computer Systems

By

**Abdelhalim Esselami**

**Abdelkadir Cheklal**

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| **CNAS Virtual Counter** |

June, 1st 2023 In front of the jury composed of:

|  |  |  |
| --- | --- | --- |
| Mr. Zouaoui Guellil | UHB-Chlef | Examiner |
| Mr. Chahreddine Medjahed | UHB-Chlef | Examiner |
| Mr. Walid Kadri | UHB-Chlef | Supervisor |
| Mr. Abdellatif Esselami | Computer Engineer / CNAS | Co-Supervisor |

**2022-2023**