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**REPORT TASK 3 AND TASK 4**

**Task 3:**

**Time Compute using key save to Ber:**

**Window:** Using **UI**

* **Design:**
  + **GenKey:**

**A screenshot of a computer

Description automatically generated**

* + **Encryption:**

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* + **Decryption:**

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* **Compute :**

**Encryption:**

* + **Base64 :**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Encryption | Lần 1 | Lần 2 | Lần 3 | Lần 4 | Lần 5 | Lần 6 |
| 35 Bytes | 0.143 | 0.14 | 0.137 | 0.138 | 0.142 | 0.144 |
| 100 Bytes | 0.143 | 0.139 | 0.14 | 0.141 | 0.14 | 0.137 |
| 150 Bytes | 0.137 | 0.146 | 0.142 | 0.136 | 0.139 | 0.137 |
| 200 Bytes | 0.157 | 0.141 | 0.145 | 0.138 | 0.148 | 0.137 |
| 250 Bytes | 0.148 | 0.145 | 0.149 | 0.148 | 0.141 | 0.15 |

* + **Hex:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Encryption** | **Lần 1** | **Lần 2** | **Lần 3** | **Lần 4** | **Lần 5** | **Lần 6** |
| **35 Bytes** | 0.34 | 0.336 | 0.332 | 0.343 | 0.345 | 0.337 |
| **100 Bytes** | 0.345 | 0.356 | 0.382 | 0.32 | 0.362 | 0.324 |
| **150 Bytes** | 0.342 | 0.312 | 0.364 | 0.342 | 0.362 | 0.352 |
| **200 Bytes** | 0.356 | 0.392 | 0.387 | 0.349 | 0.411 | 0.372 |
| **250 Bytes** | 0.374 | 0.382 | 0.369 | 0.41 | 0.402 | 0.309 |

* **Decryption:**
  + **Base64:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Encryption** | **Lần 1** | **Lần 2** | **Lần 3** | **Lần 4** | **Lần 5** | **Lần 6** |
| **35 Bytes** | 50.06 | 49.96 | 51.02 | 50.55 | 49.62 | 50.98 |
| **100 Bytes** | 50.12 | 50.92 | 50.4 | 50.3 | 51.33 | 50.82 |
| **150 Bytes** | 49.92 | 51.22 | 50.03 | 49.17 | 50.12 | 50.15 |
| **200 Bytes** | 50.22 | 50.35 | 49.92 | 51.02 | 50.69 | 50.11 |
| **250 Bytes** | 50.01 | 50.09 | 50.01 | 50.32 | 50.49 | 49.92 |

* + **Hex:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Encryption** | **Lần 1** | **Lần 2** | **Lần 3** | **Lần 4** | **Lần 5** | **Lần 6** |
| **35 Bytes** | 50.31 | 50.12 | 49.02 | 50.66 | 51.62 | 50.13 |
| **100 Bytes** | 50.2 | 49.04 | 50.4 | 50.2 | 51.3 | 50.62 |
| **150 Bytes** | 49.95 | 50.02 | 50.67 | 49.88 | 50.98 | 50.39 |
| **200 Bytes** | 50.54 | 50.43 | 50.12 | 50.4 | 51.23 | 50.23 |
| **250 Bytes** | 50.56 | 50.23 | 49.01 | 50.65 | 50.2 | 51.04 |

* **Ubuntu:**
  + **Base64:**

|  |  |  |
| --- | --- | --- |
| **Size** | **Encryption** | **Decryption** |
| **35 Bytes** | 0.018 | 4.21 |
| **100 Bytes** | 0.024 | 4.17 |
| **150 Bytes** | 0.016 | 4.15 |
| **200 Bytes** | 0.019 | 4.23 |
| **250 Bytes** | 0.02 | 4.19 |

* + **Hex:**

|  |  |  |
| --- | --- | --- |
| **Size** | **Encryption** | **Decryption** |
| **35 Bytes** | 0.041 | 4.03 |
| **100 Bytes** | 0.038 | 4.19 |
| **150 Bytes** | 0.045 | 4.11 |
| **200 Bytes** | 0.041 | 4.2 |
| **250 Bytes** | 0.044 | 4.12 |

**Task 4:**

* **Design UI:**
  + **GenKey:**

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* + **Signature:**

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Description automatically generated**

* + **Verify :**

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