

Отчет по лабораторной работе №7 по курсу _____ Фундаментальная информатика _____

Студент группы _____ М8О-102Б-21 _____, № по
списку _9_ - Кажкин Денис Андреевич

Контакты www, e-mail, icq,
skype _____ deniskazhekin@mail.ru _____

Работа выполнена:

Преподаватель: _____ Никулин Сергей Петрович _____
каф. 806 _____

Входной контроль знаний с оценкой

Отчет сдан « _____ » _____ 201 ____ г., итоговая
оценка _____

Подпись преподавателя

1. **Тема:** Программирование в алгоритмической модели Маркова
2. **Цель работы:** Составить программу по условию задачи
3. **Задание:** Составить алгоритм возведения числа в натуральной записи в квадрат. (37 вариант)
4. **Оборудование:**

Оборудование ПЭВМ студента, если использовалось:

Процессор: Apple M1, с ОП 8192 Мб, НМД 262144 Мб. Монитор: Retina 13,3; IPS 2560 x 1600.

5. Программное обеспечение ЭВМ студента, если использовалось

Операционная система семейства Linux, наименование Ubuntu, версия _____ 20.04.3 LTS _____ интерпретатор
команд _bash_ версия _____ 5.0.17(1) _____

Редактор текстов GNU emacs, версия 27.2

Прикладные системы и программы: nat

6. Идея, метод, алгоритм решения задачи (в формах: словесной, псевдокода, графической [блок-схема, диаграмма, рисунок, таблица] или формальные спецификации с пред- и постусловиями)

1. Переведем десятичное число X в унарную систему счисления
2. Допisać к получившемуся числу X в унарной системе счисления $(X-1)$ раз число X в унарной системе счисления
3. Переведем унарную запись в десятичную.

7. **Сценарий выполнения работы** [план работы, первоначальный текст программы в черновике (можно на отдельном листе) и тесты либо соображения по тестированию].

Тесты:

1. $7 \rightarrow 49$
2. $8 \rightarrow 64$
3. $5 \rightarrow 25$
4. $4 \rightarrow 16$
5. $2 \rightarrow 4$

Пункты 1-7 отчета составляются строго до начала лабораторной работы.

Допущен к выполнению работы. Подпись преподавателя

8. **Распечатка протокола** (подклеить листинг окончательного варианта программы с тестовыми примерами, подписанный преподавателем).

```
deniskazhekin@MacBook-Air-Denis ~ % cat lr7.nam
```

```
z^->za
```

```
o^->a
```

```
a^->b
```

```
b^->c
```

```
c^->d
```

```
d^->e
```

```
e^->f
```

```
f^->g
```

```
g^->h
```

```
h^->i
```

```
i^->^o
```

```
za->1z
```

```
zb->2z
```

```
zc->3z
```

```
zd->4z
```

```
ze->5z
```

```
zf->6z
```

```
zg->7z
```

```
zh->8z
```

```
zi->9z
```

```
zo->0z
```

```
z->.
```

```
BA->AOB
```

```
BO->OB
```

```
B->
```

```
OA->AO
```

```
$?->?B
```

```
*$->$A*
```

```
A$->$A
```

```
A*->*A
```

```
$*->$?
```

```
?A->Z
```

```
ZA->Z
```

```
ZO->O
```

```
^O->^^
```

```
O->y^
```

```
y->zo
```

```
1->0$
```

```
2->1$
```

```
3->2$
```

```
4->3$
```

```
5->4$
```

```
deniskazhekin@MacBook-Air-Denis ~ % cat nam.out
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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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[illegible]

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[illegible]


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□ f^ -> g ] "zag^^^^^^^^"
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  [ a^ -> b ] "zba^^^^"
  [ a^ -> b ] "zbb^^^^"
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  [ c^ -> d ] "zbd^"
  [ d^ -> e ] "zbe"
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[BA -> AOB] "?A0BAAA0000000000000000"
[BA -> AOB] "?A0A0BAA0000000000000000"
[BA -> AOB] "?A0A0A0BA0000000000000000"
[BA -> AOB] "?A0A0A0A0B0000000000000000"
[BO -> OB] "?A0A0A0A00B0000000000000000"
[BO -> OB] "?A0A0A0A000B0000000000000000"
[BO -> OB] "?A0A0A0A0000B0000000000000000"
[BO -> OB] "?A0A0A0A00000B0000000000000000"
[BO -> OB] "?A0A0A0A000000B0000000000000000"
[BO -> OB] "?A0A0A0A0000000B0000000000000000"
[BO -> OB] "?A0A0A0A00000000B0000000000000000"
[BO -> OB] "?A0A0A0A000000000B0000000000000000"
[BO -> OB] "?A0A0A0A0000000000B0000000000000000"
[BO -> OB] "?A0A0A0A00000000000B0000000000000000"
[BO -> OB] "?A0A0A0A000000000000B0000000000000000"
[B ->] "?A0A0A0A000000000000000000000"
[OA -> AO] "?AA00A0A000000000000000000000"
[OA -> AO] "?AA0A00A000000000000000000000"
[OA -> AO] "?AAA000A0000000000000000000000"
[OA -> AO] "?AAA00A0000000000000000000000"
[OA -> AO] "?AAAA0A0000000000000000000000"
[OA -> AO] "?AAAA000000000000000000000000"
[?A -> Z] "ZAAA0000000000000000000000"
[ZA -> Z] "ZAA0000000000000000000000"
[ZA -> Z] "ZA0000000000000000000000"
[ZA -> Z] "Z0000000000000000000000"
[ZO -> O] "0000000000000000000000"
[O -> y^] "y^0000000000000000000000"
[^O -> ^^] "y^^0000000000000000000000"
[^O -> ^^] "y^^^0000000000000000000000"
[^O -> ^^] "y^^^^0000000000000000000000"
[^O -> ^^] "y^^^^^0000000000000000000000"

```

[ ^O -> ^^ ] "y^^^^^^0000000000"
[ ^O -> ^^ ] "y^^^^^^0000000000"
[ ^O -> ^^ ] "y^^^^^^0000000000"
[ ^O -> ^^ ] "y^^^^^^00000000"
[ ^O -> ^^ ] "y^^^^^^0000000"
[ ^O -> ^^ ] "y^^^^^^000000"
[ ^O -> ^^ ] "y^^^^^^00000"
[ ^O -> ^^ ] "y^^^^^^0000"
[ ^O -> ^^ ] "y^^^^^^000"
[ ^O -> ^^ ] "y^^^^^^00"
[ ^O -> ^^ ] "y^^^^^^0"
[ ^O -> ^^ ] "y^^^^^^"
[ y -> zo ] "zo^^^^^^"
[ o^ -> a ] "za^^^^^^"
[ a^ -> b ]
□ "zb^^^^^^"
[ b^ -> c ] "zc^^^^^^"
[ c^ -> d ] "zd^^^^^^"
[ d^ -> e ] "ze^^^^^^"
[ e^ -> f ] "zf^^^^^^"
[ f^ -> g ] "zg^^^^^^"
[ g^ -> h ] "zh^^^^^^"
[ h^ -> i ] "zi^^^^^^"
[ i^ -> ^o ] "z^o^^^^^^"
[ z^ -> za ] "zao^^^^^^"
[ o^ -> a ] "zaa^^^^^^"
[ a^ -> b ] "zab^^^^^^"
[ b^ -> c ] "zac^^^^^^"
[ c^ -> d ] "zad^^^^^^"
[ d^ -> e ] "zae^^^^^^"
[ e^ -> f ] "zaf^^^^^^"
[ za -> 1z ] "1zf"
[ zf -> 6z ] "16z"
[ z -> . ] "16"

```

2

```

[ 2 -> 1$ ] "1$"
[ 1 -> 0$ ] "0$$"
[ 0 -> ] "$$"
[ $ -> *$ ] "*$$"
[ *$ -> $A* ] "$A*$"
[ *$ -> $A* ] "$A$A*"
[ A$ -> $A ] "$$AA*"
[ A* -> *A ] "$$A*A"
[ A* -> *A ] "$$*AA"
[ $* -> $? ] "$$?AA"
[ $? -> ?B ] "$?BAA"
[ BA -> AOB ] "$?AOBA"
[ BA -> AOB ] "$?AOAOB"
[ B -> ] "$?AOAO"
[ OA -> AO ] "$?AAOO"
[ $? -> ?B ] "?BAAOO"

```

```

[ BA -> AOB ] "?AOBAOO"
[ BA -> AOB ] "?AOAOBBO"
[ BO -> OB ] "?AOAOOB"
[ BO -> OB ] "?AOAOOB"
[ B -> ] "?AOAOOO"
[ OA -> AO ] "?AAOOOO"
[ ?A -> Z ] "ZA0000"
[ ZA -> Z ] "Z0000"
[ ZO -> O ] "0000"
[ O -> y^ ] "y^000"
[ ^O -> ^^ ] "y^^00"
[ ^O -> ^^ ] "y^^^0"
[ ^O -> ^^ ] "y^^^^"
[ y -> zo ] "zo^^^^"
[ o^ -> a ] "za^^^^"
[ a^ -> b ] "zb^^^^"
[ b^ -> c ] "zc^^^^"
[ c^ -> d ] "zd"
[ zd -> 4z ] "4z"
[ z -> . ] "4"

```

9. Дневник отладки должен содержать дату и время сеансов отладки, и основные события (ошибки в сценарии и программе, нестандартные ситуации) и краткие комментарии к ним. В дневнике отладки приводятся сведения об использовании других ЭВМ, существенном участии преподавателя и других лиц в написании и отладке программы.

	Ла б. или до м.	Д а т а	Вре мя	Событие	Действие по исправлению	Примечание

10. Замечания автора по существу работы

11. Выводы Я научился пользоваться нормальными алгоритмами Маркова и работать с утилитой `nam`

Подпись студента _____