Факультет Программной Инженерии и Компьютерной Техники

Домашняя работа №2

По дискретной математике

Вариант 91

Выполнил:

Студент группы P3110

Бармичев Григорий Андреевич

Преподаватель:

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1. А = 75, В = 41.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А > 0, B > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Апр. | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |  | 75 |  | 75 |
| Bпр. | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |  | 41 |  | 41 |
| Спр. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |  | 116 |  | 116 |

|  |  |  |  |  |  |  |
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| CF=0, | ZF=0, | PF=1, | AF=0, | SF=0, | OF=0. |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А > 0, B < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Апр. | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |  | 75 |  | 75 |
| Bдоп. | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |  | -41 |  | 215 |
| Спр. | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | 34 |  | 34? |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=1, | AF=1, | SF=0, | OF=0. |  |
| Для беззнаковой интерпретации результат неверен вследствие возникающего переноса из старшего разряда. Вес этого переноса составляет 256. | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | | | | | | | | | | | | | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | А < 0, B > 0. | | | | | | | | | Интерпретации | | | | |  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая | | | Адоп | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |  | -75 |  | 181 | | | Bпр. | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |  | -41 |  | 41 | | | Сдоп. | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |  |  |  | 222 | | | Спр. | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |  | -34 |  | |  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | CF=0, | ZF=0, | PF=1, | AF=0, | SF=1, | OF=0. | | | | | | | | | | | | | | | |
| А < 0, B < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Адоп | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |  | -75 |  | 181 |
| Bдоп. | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |  | -41 |  | 215 |
| Сдоп. | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |  |  |  | 140? |
| Спр. | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |  | -116 |  |  |

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| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=1, | AF=1, | SF=1, | OF=0. |

Для БзИ результат неверен вследствие возникающего переноса из старшего разряда. Вес этого переноса составляет 256.

1. Правило для подбора выглядит следующим образом:

А + В > 128, значит 127>B >128 - A, пусть В = 63.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| В | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |

А

7 0 7 0

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А > 0, B > 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Апр. | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |  | 75 |  | 75 |
| Bпр. | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |  | 63 |  | 63 |
| Сдоп. | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |  |  |  | 138 |
| Спр. | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |  | -118? |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=1. |

Для знакового сложения результат является некорректным вследствие переполнения формата.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А < 0, B < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Адоп. | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |  | -75 |  | 180 |
| Bдоп. | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |  | -63 |  | 193 |
| Спр. | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 |  | 117? |  | 117? |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=0, | AF=0, | SF=0, | OF=1. |

Для знаковой интерпретации результат неверен вследствие возникающего переполнения, для беззнаковой интерпретации результат неверен вследствие возникающего переноса из старшего разряда.

3. Значение числа В фиксируем (В = 70), а значение А подбираем согласно формуле А + В = 128, по которой при сложении положительных чисел будет фиксироваться переполнение, а при сложении отрицательных этого не будет. Тогда А = 58.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| B | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |

А

7 0 7 0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А > 0, B > 0. | | | | | | | Интерпретации | | | | | | |
|  |  |  |  |  |  |  | |  |  |  | Знаковая |  | Беззнаковая | |
| Апр. | 0 | 0 | 1 | 1 | 1 | 0 | | 1 | 0 |  | 58 |  | 58 | |
| Bпр. | 0 | 1 | 0 | 0 | 0 | 1 | | 1 | 0 |  | 70 |  | 70 | |
| Сдоп. | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |  |  |  | 128 | |
| Спр. | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |  | -128? |  |  | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=1. |

Для знаковой интерпретации результат некорректен вследствие возникающего переполнения.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А < 0, B < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Адоп. | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |  | -58 |  | 198 |
| Bдоп. | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |  | -70 |  | 186 |
| Сдоп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  | 128? |
| Спр. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128 |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=0. |

Для беззнаковой интерпретации результат неверен вследствие возникающего переноса из старшего разряда, результат знаковой интерпретации корректен.

Значение числа В фиксируем (В = 70), а значение А подбираем согласно формуле А + В = 128, по которой при сложении положительных чисел будет фиксироваться переполнение, а при сложении отрицательных этого не будет. Тогда А = 58.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| B | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |

А

7 0 7 0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А > 0, B > 0. | | | | | | | Интерпретации | | | | | | |
|  |  |  |  |  |  |  | |  |  |  | Знаковая |  | Беззнаковая | |
| Апр. | 0 | 0 | 1 | 1 | 1 | 0 | | 1 | 0 |  | 58 |  | 58 | |
| Bпр. | 0 | 1 | 0 | 0 | 0 | 1 | | 1 | 0 |  | 70 |  | 70 | |
| Сдоп. | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |  |  |  | 128 | |
| Спр. | 1 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |  | -128? |  |  | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=0, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=1. |

Для знаковой интерпретации результат некорректен вследствие возникающего переполнения.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| А < 0, B < 0. | | | | | | | | | Интерпретации | | | |
|  |  |  |  |  |  |  |  |  |  | Знаковая |  | Беззнаковая |
| Адоп. | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |  | -58 |  | 198 |
| Bдоп. | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 |  | -70 |  | 186 |
| Сдоп. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  | 128? |
| Спр. | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | -128 |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CF=1, | ZF=0, | PF=0, | AF=1, | SF=1, | OF=0. |

Для беззнаковой интерпретации результат неверен вследствие возникающего переноса из старшего разряда, результат знаковой интерпретации корректен.