

Warcraft

Intro

Your task is to write a program that represents parts from the famous computer game – “**Warcraft**”.

Three famous heroes of the game take place into the scene.

Archmage – human wizard

DeathKnight – undead knight

DrawRanger – half elf, half undead ranger

You will simulate those heroes casting basic and ultimate spells.

Provided input

You are provided with folder called **Skeleton**, which contains:

- A header file that contains the most important information for the task.
- A Basic Skeleton to guide you in the initial direction. You don't need to strictly follow it.

You are also provided with folder called **tests**, which contains all of the tests that your program should pass.

- There are a total of 13 tests. 13 inputs and 13 outputs. The 3 of the tests are copy of the ones described in this document. The other 10 are unique.

Task description

Your task is to provide to **provide an implementation**, which with the given standard input will produce the correct standard output (detailed description below).

Each hero has the following attributes:

- name – name of the character;
- maxMaxa – the character mana pool for casting spells. (If you don't know what 'mana' is – think of it as a currency required to cast a spell).
- baseManaRegenRate – tell you how much mana points your character restores when an ActionType::REGENERATE_MANA is performed. Keep in mind that your character can **NOT** have more mana points than his “maxMaxa”. Your character can restore mana points **UP** to his “maxMaxa”.

NOTE: The **Archmage** class has a special bonus attribute: “manaRegenModifier”, which scales up his mana regeneration (multiplies baseManaRegenRate to manaRegenModifier) each time the character performs an ActionType::REGENERATE_MANA.

Each character has his unique BASIC and ULTIMATE spells that are already predefined.

```
#define MAX_SPELL_NAME_SIZE 20
```

```
typedef struct {  
    char name[MAX_SPELL_NAME_SIZE];  
    int manaCost;  
} Spell;
```

You are given the **main()** function, which read the data for the Archmage, DeathKnight and DrawRanger. It is your task to implement them using this input.

Next a single integer (N) is read from the standard input.

- The next N whitespace separated integer are special ActionType commands;

```
enum ActionType {  
    CAST_BASIC_SPELL, CAST_ULTIMATE_SPELL, REGENERATE_MANA  
};
```

“0” or ActionType::CAST_BASIC_SPELL command – all heroes should **TRY** to casts their BASIS spells (if they have enough mana points);

“1” or ActionType::CAST_ULTIMATE_SPELL command – all heroes should **TRY** to casts their ULTIMATE spells (if they have enough mana points);

“2” or ActionType::REGENERATE_MANA command – all heroes should use their ability to regenerate mana;

Console output

After each ActionType::CAST_BASIC_SPELL or ActionType::CAST_ULTIMATE_SPELL each hero should **print to the console** a result of his actions.

For successful cast you should print: ‘spell name’ casted for ‘spell mana’ followed by a **newline**.

For unsuccessful cast you should print: ‘spell name’ – not enough mana to cast ‘spell name’ followed by a **newline**.

Note: ActionType::REGENERATE_MANA does **NOT** print any result to the console.

Special hero abilities:

- Archmage – if SpellType::ULTIMATE is successfully casted the Archmage gets **immediately** a free ActionType::REGENERATE_MANA.
- DeathKnight – if SpellType::ULTIMATE is successfully casted the DeathKnight gets **immediately** a free ActionType::CAST_BASIC_SPELL.
Important note: on the free basic cast spell you should print to the console – ‘spell name’ casted for 0 mana (cast the spell for 0 mana).
- DrawRanger – if SpellType::BASIC is successfully casted the DrawRanger gets **immediately** a free ActionType::CAST_BASIC_SPELL.
Important note: on the free basic cast spell you should print to the console – ‘spell name’ casted for 0 mana (cast the spell for 0 mana).

Restrictions

Code should compile under the C 11 standard.

Code should not use any non-standard extensions.

Examples

Input	Output
Archmage 480 80 2 DeathKnight 420 70 DrawRanger 360 60 2 0 1	Archmage casted Water Elemental for 120 mana DeathKnight casted Death Coil for 75 mana DrawRanger casted Silence for 90 mana DrawRanger casted Silence for 0 mana Archmage casted Mass Teleport for 180 mana DeathKnight casted Animate Dead for 200 mana DeathKnight casted Death Coil for 0 mana DrawRanger casted Charm for 150 mana
Values 180 50 3 Are-not 220 80 Hardcoded 160 90 2 1 1	Values casted Mass Teleport for 180 mana Are-not casted Animate Dead for 200 mana Are-not casted Death Coil for 0 mana Hardcoded casted Charm for 150 mana Values - not enough mana to cast Mass Teleport Are-not - not enough mana to cast Animate Dead Hardcoded - not enough mana to cast Charm
ConjurusRex 280 80 1 Arthas 320 40 Sylvanas 160 50 4 1 2 2 1	ConjurusRex casted Mass Teleport for 180 mana Arthas casted Animate Dead for 200 mana Arthas casted Death Coil for 0 mana Sylvanas casted Charm for 150 mana ConjurusRex casted Mass Teleport for 180 mana Arthas casted Animate Dead for 200 mana Arthas casted Death Coil for 0 mana Sylvanas - not enough mana to cast Charm