

Programming assignment 7

README

[Link to assignment in Schoology.](#)

Problem

- Modify the code from class ("Battle by numbers" [in GitHub](#)) to use characters as menu choices instead of numbers.
- To do this, you need to change from an integer data type to a character data type.
- Both `scanf` functions and `if` structure have to be changed to accommodate this change.
- The conversion specification for characters is `%c`.
- Note that character variables should be defined and used with single quotes, e.g. `response = 'a'` or `response == 'a'`.

Character conversion

- Create an input file with one character 'a' in it.

```
echo 'y' > input
```

- Declare a variable `response`, scan the character from the input file `input`, and print it.

```
char response = '\0';  
scanf("%c", &response);  
printf("The character input was: %c\n", response);
```

- To check the value of a character variable, use logical operators like `==`. E.g. if `char r = 'y'`, then `r == 'y'` is true, and `r != 'y'` is false.

Submission

- Submit the code as a C source code file.
- Make sure that the C code compiles and runs properly before submitting.
- ~~Late submissions will not be accepted for this assignment.~~
- Extra credit (5 pts) for submitting a commented Org mode file (with the usual meta data in the header, and the results of a trial run).
- Extra credit (5 pts) for submitting an Org mode file with a BPMN diagram of the algorithm included (send both files to me via email).

Solution

Here is the template, the code in 1 for number input from the file created in 1 first, then the solution for character input in 1, including the bonus solution (inline image of the BPMN model for the algorithm).

Battle by numbers

The code in 1 below reads input from a file idrink (the file contains the number 1, one of the two possible responses to the battle question). You can change the input to 2 to get the other response.

```
echo "1" > idrink
```

```
int response = 0; // initialize response

puts("\n\tIn-Battle Healing\n\n1:\tDrink health potion\n\n2:\tResume battle\n");

printf("\nEnter your selection: ");
scanf("%d", &response);

if (response == 1)
    printf("\nYou entered \"%d\":\nDrinking health potion!\n", response);

if (response == 2)
    printf("\nYou entered \"%d\":\nResuming battle!\n", response);
```

Battle with character

The code in 1 below reads input from a file cdrink (the file contains the character a, one of the two possible responses to the battle question). You can change the input to b to get the other response.

```
echo "b" > cdrink
```

```
char cresponse = '\0'; // initialize response

puts("\n\tIn-Battle Healing\n\na:\tDrink health potion\n\nb:\tResume battle\n");

printf("\nEnter your selection: ");
scanf("%c", &cresponse);

if (cresponse == 'a')
    printf("\nYou entered \"%c\":\nDrinking health potion!\n", cresponse);

if (cresponse == 'b')
    printf("\nYou entered \"%c\":\nResuming battle!\n", cresponse);
```

BPMN model

The only difference between this solution and the classroom models is that the start event is overloaded and is triggered only when a selection has been received.

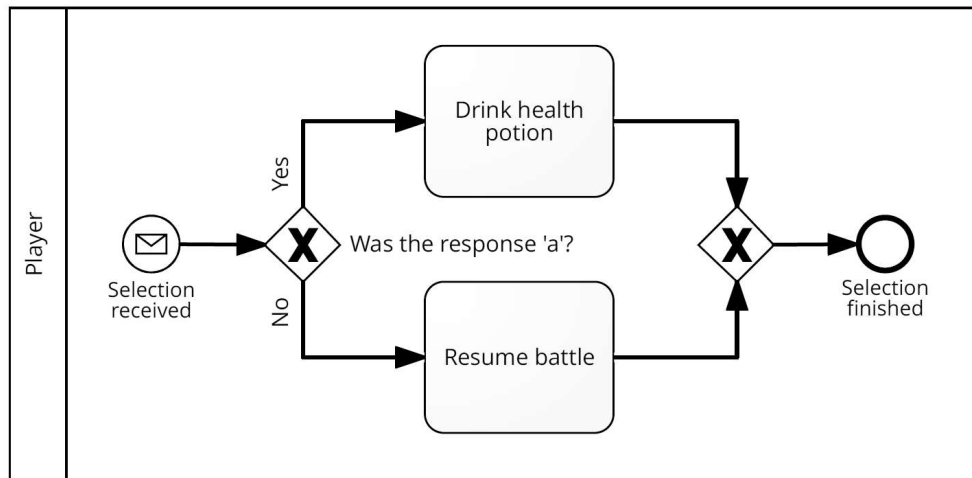


Figure 1: BPMN model of battle with character

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Validate