

Software analysis and design

Activity diagrams - Exercise solutions

Exercise 1:

Analyze the example of *Orders* shown above, and write the explanation of this diagram following the same pattern than in previous examples.

Solution:

In this example, we are dealing with an order from a customer. Once the order is received, the flow control forks, and the system performs two tasks simultaneously:

- From one branch, the order is filled and, depending on the order type (express or normal) it will require an express or normal delivery.
- From the other branch, an invoice is sent to the customer, and the corresponding payment is received.

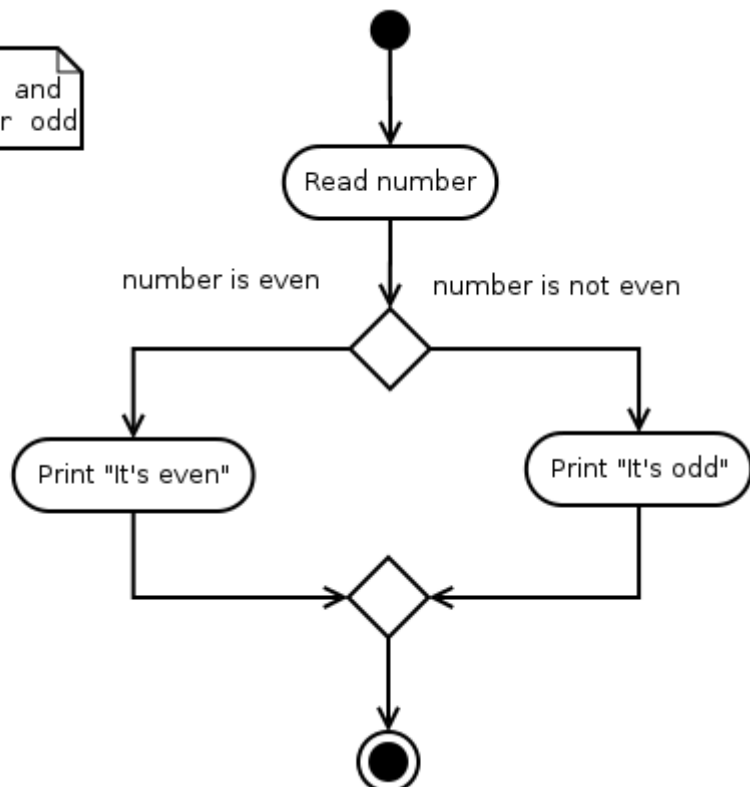
Exercise 2:

Create an activity diagram for the following simple programs:

1. A program that asks the user to enter a number and then tells if it is even or odd.

Solution:

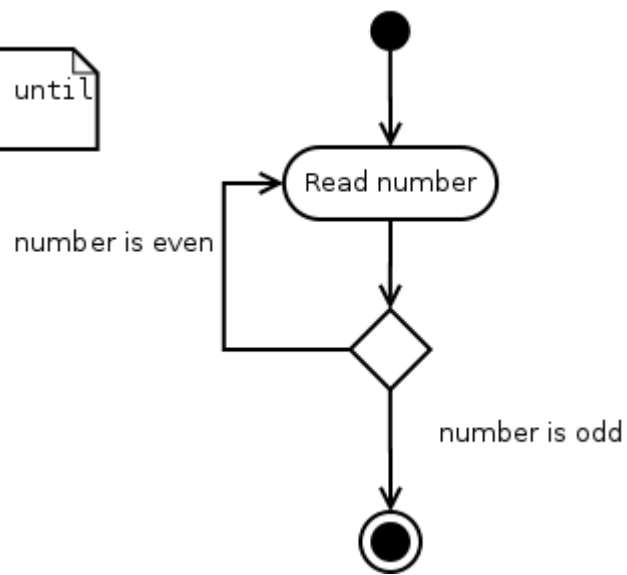
Exercise to read a number and determine if it is even or odd



2. A program that iteratively asks the user to enter a number until he types an odd number.

Solution:

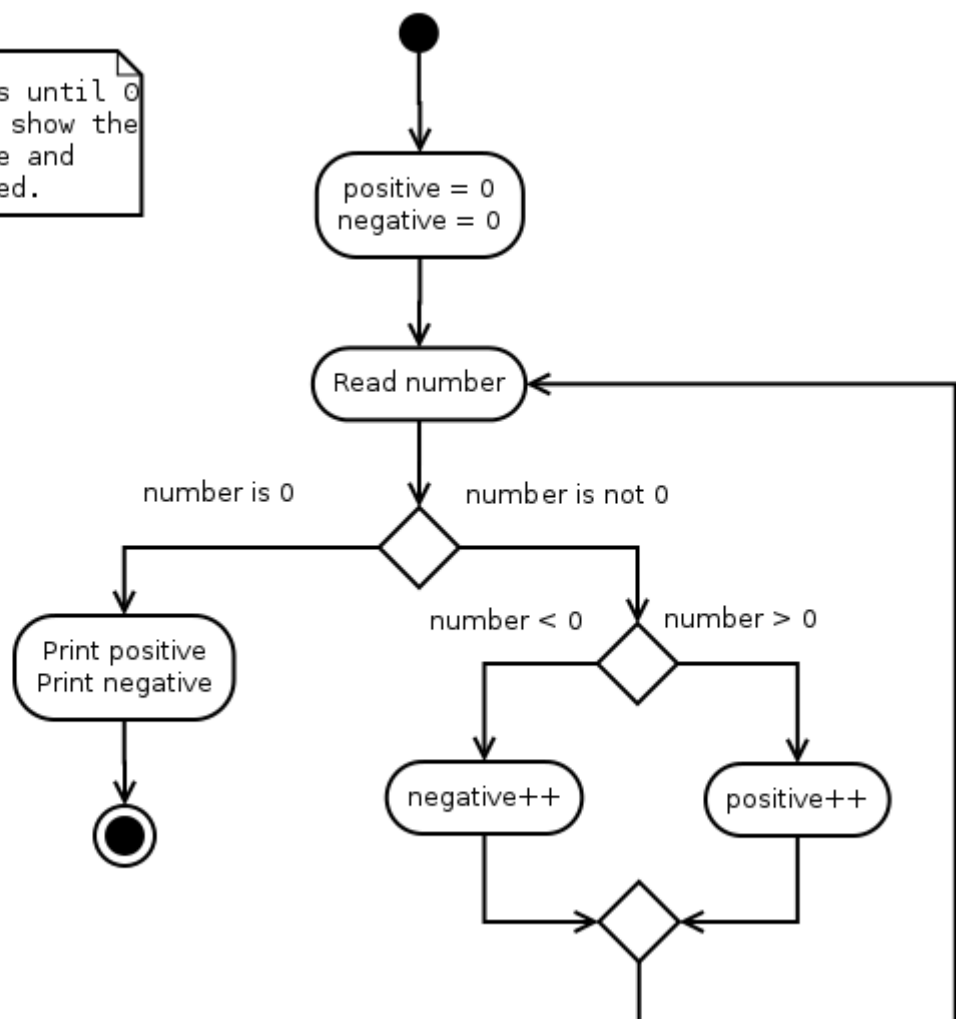
Exercise to read a number until
it is odd



3. A program that iteratively asks the user to enter a number until he types 0. Then, it will show the total amount of positive and negative numbers that the user has typed.

Solution:

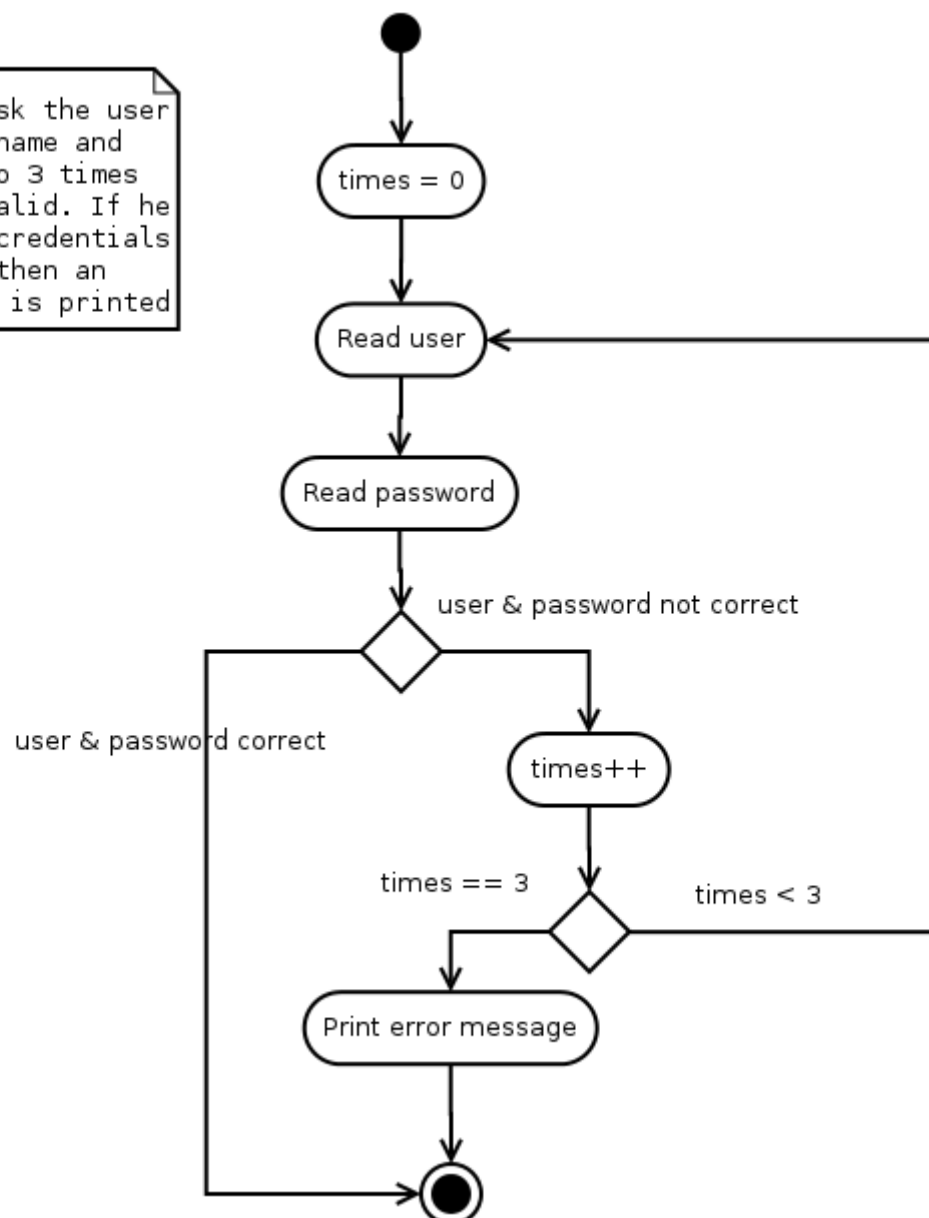
Exercise to read numbers until 0 is typed. Then, it will show the total amount of positive and negative numbers entered.



4. A program that asks the user to enter his username and password. If they are not correct, the program must ask again, up to 3 times. After the 3rd attempt, the program will show an error message and then, it will finish.

Solution:

Exercise to ask the user to enter username and password up to 3 times until it is valid. If he enters wrong credentials for 3 times, then an error message is printed



Exercise 3:

Create the activity diagram of any use case from exercise about the cultural organization of previous section.

Solution:

We can create the diagram for the "search by type" activity, for instance:

Exercise to create the activity diagram for the cultural organization application. In this case, we create the diagram for the "search by type" activity.

