Software Engineering Project
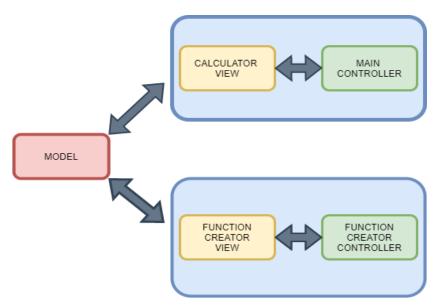
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Design of the architecture of the program

Scientific Programmable Calculator

Architectural Pattern

The software is based on a **Model View Controller architecture**.

In particular, **two different views** have been identified with the respective **controllers**.

The first is related to the main features of the program (enter and save numbers, perform operations, save values into variables, access to data etc.), while the other one refers to the

manipulation of user-defined functions. The **controllers** handle the user interface with these two views.

The **model** handles manipulation of data and makes them available to views and controllers.

Classes

ComplexNumber

The class **ComplexNumber** implements the mathematical concept of complex numbers and implements all the required operations.

NumberStack

The class **NumberStack** represents a structure that memorizes the values of numbers entered by the user and handles their manipulation through a LIFO technology.

Variables

The class **Variables** contains all 26 variables with their values and implements the related methods.

UserOperation

The class **UserOparation** represents the operations defined by the user indicating its name, and its formula.

MockUps

Scientific Programmable Calculator

| Segnaposto | Submit |

| sum | diff | prod |
| div | sqrt | invsign |

| Clear | Delete | Dup |
| Swap | ... |

Entered Numbers

$5 + 6j$

$17 - 9j$

6

-4

User Funcrtions

myfunction1

myfunction2

Create/Modify User Functions

Var	Value
x	-7
y	-
z	-
k	-

User-Defined Functions

| Segnaposto |

| Save | Modify | Delete |

User Funcrtions

myfunction1

myfunction2

myfunction3

myfunction4