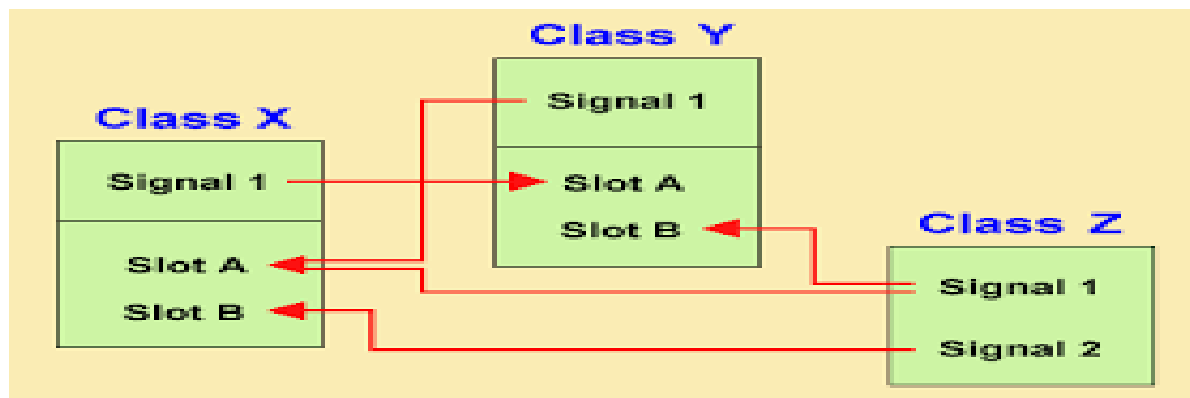


Work Report → QT

- 1- at first we install qt creator studio 5.1.2
- 2- install packages requirements
- 3- In this task, we had to open the webcam and put the square, rectangle and circle shapes on it and move it in the image.
- 4- We had to learn this basic concept first so that we could do our own work



- 5- We designed a button that opens the webcam with one tap and closes the webcam with another tap

```

void MainWindow::on_pushButton_clicked()
{
    cap.open(0);
    if(checkered == 1)
    {
        closeWebcam();
        checked *= -1;
    }
    if(cap.isOpened())
    {
        openWebcam();
        checked *= -1;
    }
}

```

6-Then, we had to design several options, each one of which would make a shape in the middle of the webcam

```

void MainWindow::on_rectangle_stateChanged()
{
    if(ui->rectangle->isChecked())
    {
        if(startRect == true)
        {
            reset(1);
        }
        rectangle(frame, rect1, rect2, Scalar(200,0,0), 2);
    }
}

void MainWindow::on_square_stateChanged()
{
    if(ui->square->isChecked())
    {
        if(startSqr == true)
        {
            reset(2);
        }
        rectangle(frame, sqr1, sqr2, Scalar(0,0,200), 2);
    }
}

void MainWindow::on_circle_stateChanged()
{
    if(ui->circle->isChecked())
    {
        if(startCircle == true)
        {
            reset(3);
        }
        circle(frame, center, radius, Scalar(50,200,70), 2);
    }
}

```

7-How we put the image in the middle of the screen according to the frame we were taking

```
void MainWindow::reset(int n)
{
    if(n == 1)
    {
        rect1.x = frame.cols / 2 - 30 ;
        rect1.y = frame.rows / 3 ;
        rect2.x = frame.cols / 2 + 30 ;
        rect2.y = frame.rows * 2 / 3 ;
    }

    if(n == 2)
    {
        sqr1.x = frame.cols / 2 - 40 ;
        sqr1.y = frame.rows / 2 - 40 ;
        sqr2.x = frame.cols / 2 + 40 ;
        sqr2.y = frame.rows / 2 + 40 ;
    }

    if(n == 3)
    {
        center.x = frame.cols / 2;
        center.y = frame.rows / 2;
        radius = 50 + (ratio + 1);
    }
}
```

8-Next, we had to design buttons that would move the shapes and the camera, the example below:

```
void MainWindow::on_right_clicked()
{
    if(rect1.x < frame.cols && rect2.x < frame.cols){
        if(ui->rectangle->isChecked())
        {
            rect1.x += 10;
            rect2.x += 10;
            startRect = false;
        }
    }
    if(sqr1.x < frame.cols && sqr2.x < frame.cols){
        if(ui->square->isChecked())
        {
            sqr1.x += 10;
            sqr2.x += 10;
            startSqr = false;
        }
    }
    if(center.x + 50 < frame.cols){
        if(ui->circle->isChecked())
        {
            center.x += 10;
            startCircle = false;
        }
    }
}
```