Formal Methods

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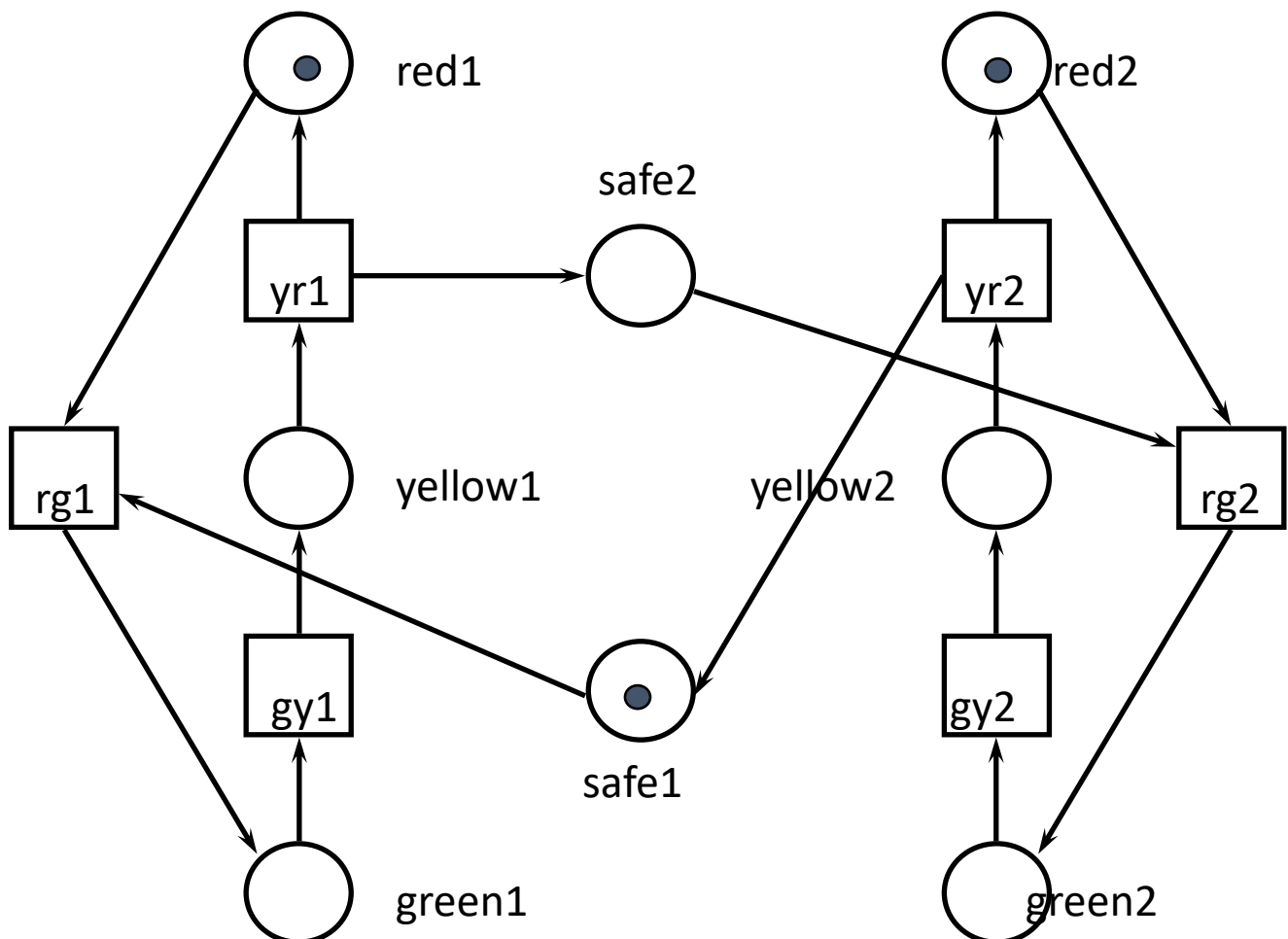
Section: A

Assignment: 04
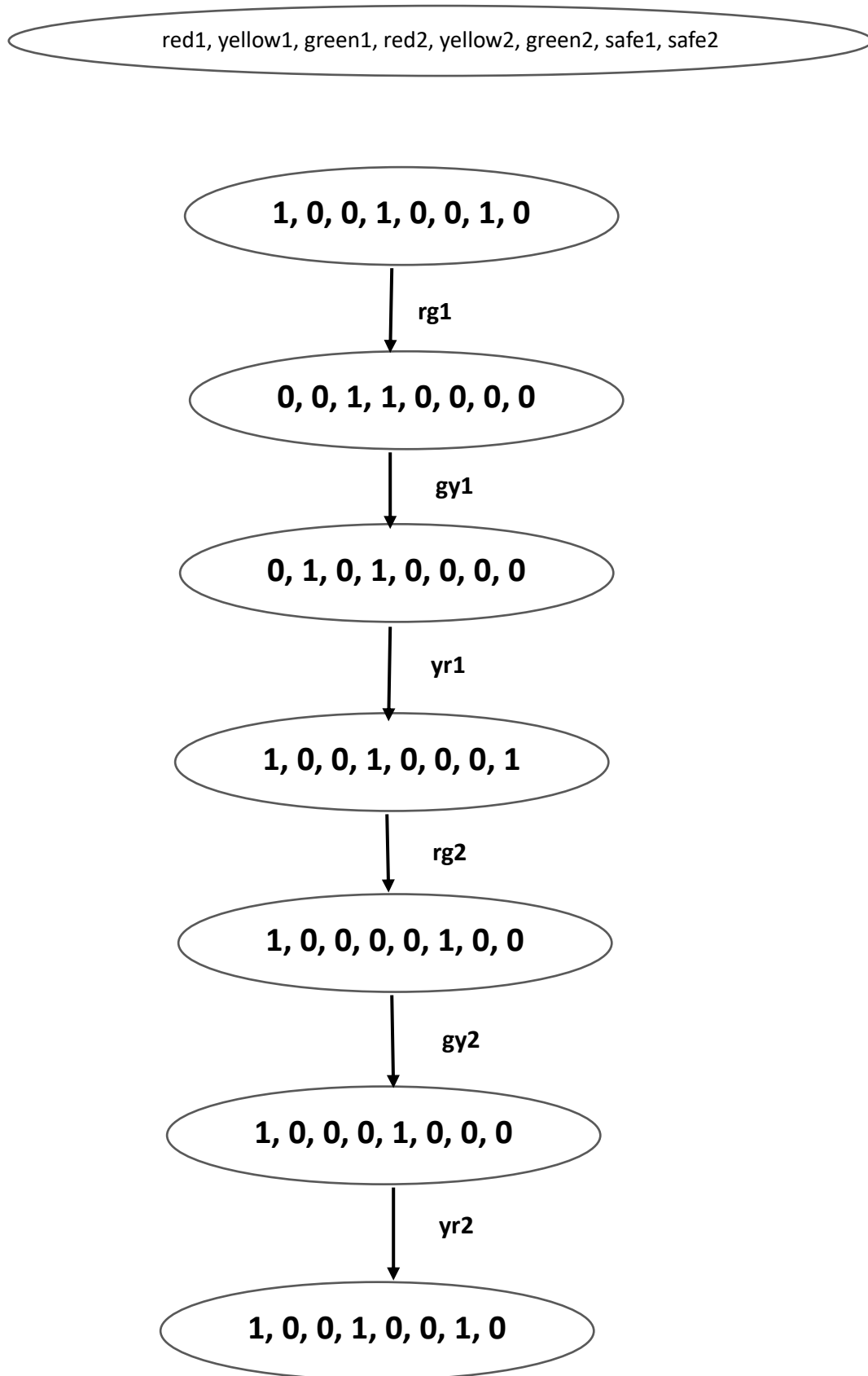
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Question: 01

A Petri net model of two safe and fair traffic lights is given below:

1 Generate the reachability tree of the model.

2 Generate the reachability graph of the model.

Reachability Tree:

red1, yellow1, green1, red2, yellow2, green2, safe1, safe2

1, 0, 0, 1, 0, 0, 1, 0

| rg1

0, 0, 1, 1, 0, 0, 0, 0

| gy1

0, 1, 0, 1, 0, 0, 0, 0

| yr1

1, 0, 0, 1, 0, 0, 0, 1

| rg2

1, 0, 0, 0, 0, 1, 0, 0

| gy2

1, 0, 0, 0, 1, 0, 0, 0

| yr2

1, 0, 0, 1, 0, 0, 1, 0

Reachability Graph:

red1, yellow1, green1, red2, yellow2, green2, safe1, safe2

1, 0, 0, 1, 0, 0, 1, 0

| rg1

0, 0, 1, 1, 0, 0, 0, 0

| gy1

0, 1, 0, 1, 0, 0, 0, 0

| yr1

1, 0, 0, 1, 0, 0, 0, 1

| rg2

1, 0, 0, 0, 0, 1, 0, 0

| gy2

1, 0, 0, 0, 1, 0, 0, 0

yr2